



# **The Lancashire Permit Scheme for Road & Street Activities**

**Year 3 Review, 2017-18**





*Lancashire County Council Permit Scheme,  
Year 3 Review, 2017-18*

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# 1 INTRODUCTION

## 1.1 Background

- 1.1.1 The Lancashire County Council (LCC) Permit Scheme went live on 2<sup>nd</sup> March 2015.
- 1.1.2 The operation of the first year of operation was evaluated and reported in the *'Lancashire County Council 12 Month review, 2015-16'*.
- 1.1.3 The purpose of the 12-month review was to;
- Demonstrate a reduction in the duration of works.
  - Demonstrate a reduction in the number of Permit applications (through an increase in collaborative working).
  - Report the monitored Key Performance Indicators (KPI 1, KPI 2, KPI 3 & KPI 7).
  - Re-evaluate the Cost Benefit Assessment to show an economic return on the investment.
  - Report the annual scheme benefit to all road users.
- 1.1.4 The reduction in number of works across the network was not significant at 3%; but combined with a significant reduction in average works durations, resulted in an overall 17% reduction in number of days worked on the road network. This equated to nearly 28,000 fewer days worked on the network in the last year.
- 1.1.5 The financial benefit to road users of the Permit Scheme in year 1 is calculated at **£16.4M per annum**. This saving equated to approximately 23% of the overall cost of works calculated in the CBA (£72.0M per annum total cost to road users).

## 1.2 Year 3 Review

- 1.2.1 The operation of the second year of operation was evaluated and reported in the report *'Lancashire County Council Year 2 Review, 2016-17'*.
- 1.2.2 The overall reduction in the number of days worked in year 2 reduced to approximately 18,000 fewer days, compared with year 1; a 17% reduction compared with performance prior to introducing the Scheme. The financial benefit to road users of the Permit Scheme in year 2 was calculated at **£10.6M per annum**.
- 1.2.3 Following the third anniversary of the Permit Scheme on 2<sup>nd</sup> February 2018, GK-TC has been commissioned to undertake a detailed review of the operation during year 3 and to determine whether benefits achieved in the first two years have been maintained.
- 1.2.4 The operation of the second year of operation is evaluated and reported in this report *'Lancashire County Council Year 3 Review, 2017-18'*.
- 1.2.5 Chapter 2 presents the analysis of the permit applications and actual durations. The review of the key performance indicators is reported in Chapter 3.
- 1.2.6 Chapter 4 presents the report summary, conclusions and recommendations.



## 2 PERMIT APPLICATIONS

### 2.1 Methodology

2.1.1 Data sources available for this review are:

- Noticing work stops notices, 2010 - 2013 (Exor database)
- Permit Scheme work stops notices, February 2015 - February 2018 (Symology database)

2.1.2 This review will assess the year on year change in the number of Permit applications and to review the breakdown of key metrics. The purpose of the review is to quantify the benefit of the Permit Scheme in terms of a reduction in number of days worked on the road network.

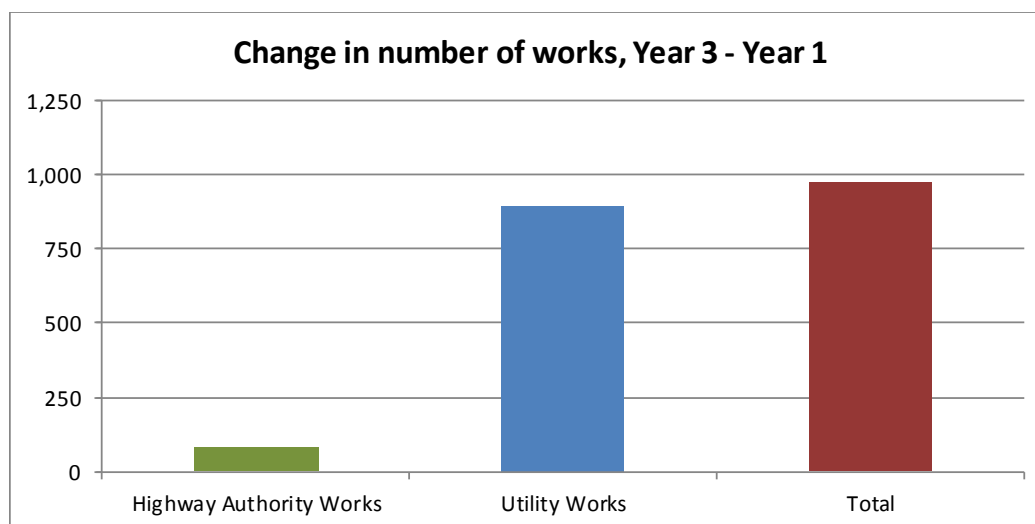
### 2.2 All works

2.2.1 The following series of charts and tables present a comparison of the first three years under the Permit Scheme.

2.2.2 The total number of Permit applications and a breakdown by highway authority and utility company is shown in Table 1 and the accompanying chart.

**Table 1 Number of Permit applications**

PROMOTER TYPE	Year 1 2015-16	Year 2 2016-17	Year 3 2017-18	Diff Yr 3 - Yr 1
Highway Authority Works	2,116	3,558	2,194	78
Utility Works	26,176	24,741	27,073	897
<b>Total</b>	<b>28,292</b>	<b>28,299</b>	<b>29,267</b>	<b>975</b>



2.2.3 The year 3 data shows a small overall increase in the number of utility permit applications compared with year 1, offsetting a similar reduction in year 2. The number of highway authority permit applications is consistent in year 3 with the year 1 data.

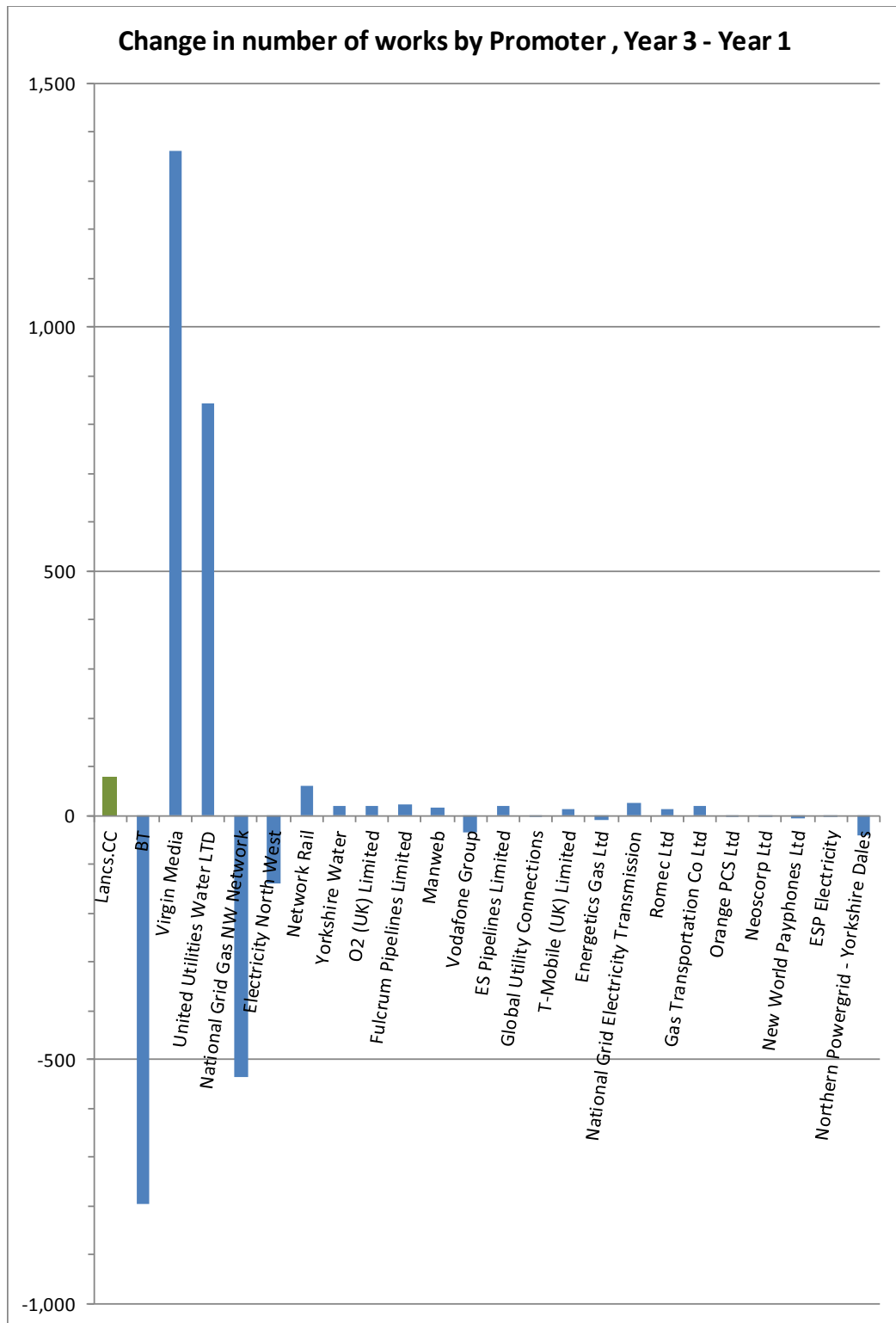
2.2.4 Overall the number of permit applications is 3% higher in year 3 than in year 1.



2.2.5 The change in number of Permit applications by works promoter is presented in Table 2 and the accompanying chart.

**Table 2 Change by works promoter**

PROMOTER	Year 1 2015-16	Year 2 2016-17	Year 3 2017-18	Diff Yr 3 - Yr 1
Lancs.CC	2,116	3,558	2,194	78
BT	6,482	4,881	5,688	-794
Virgin Media	2,518	2,360	3,879	1,361
United Utilities Water LTD	9,662	9,891	10,506	844
National Grid Gas NW Network	3,396	3,529	2,862	-534
Electricity North West	3,240	3,143	3,100	-140
Network Rail	152	157	211	59
Yorkshire Water	94	143	112	18
O2 (UK) Limited	10	6	28	18
Fulcrum Pipelines Limited	57	41	78	21
Manweb	45	52	61	16
Vodafone Group	193	138	157	-36
ES Pipelines Limited	51	54	71	20
Global Utility Connections	47	69	46	-1
T-Mobile (UK) Limited	42	64	55	13
Energetics Gas Ltd	28	15	18	-10
National Grid Electricity Transmission	1	1	27	26
Romec Ltd	9	7	23	14
Gas Transportation Co Ltd	26	30	45	19
Orange PCS Ltd	5	7	2	-3
Neoscorp Ltd	2	2	1	-1
New World Payphones Ltd	7	8		-7
ESP Electricity	8	18	4	-4
Northern Powergrid - Yorkshire Dales	101	89	59	-42
Section 50 Licences				
Others		36	40	40
<b>Total</b>	<b>28,292</b>	<b>28,299</b>	<b>29,267</b>	<b>975</b>



2.2.6 The increase in number of utility permit applications in year 3 is wholly a result of a 1,361 or 54% increase works undertaken by Virgin Media.

2.2.7 There are smaller changes in works by the other promoters, with BT and National Grid Gas showing reductions of 12% to 15% compared with year 1.

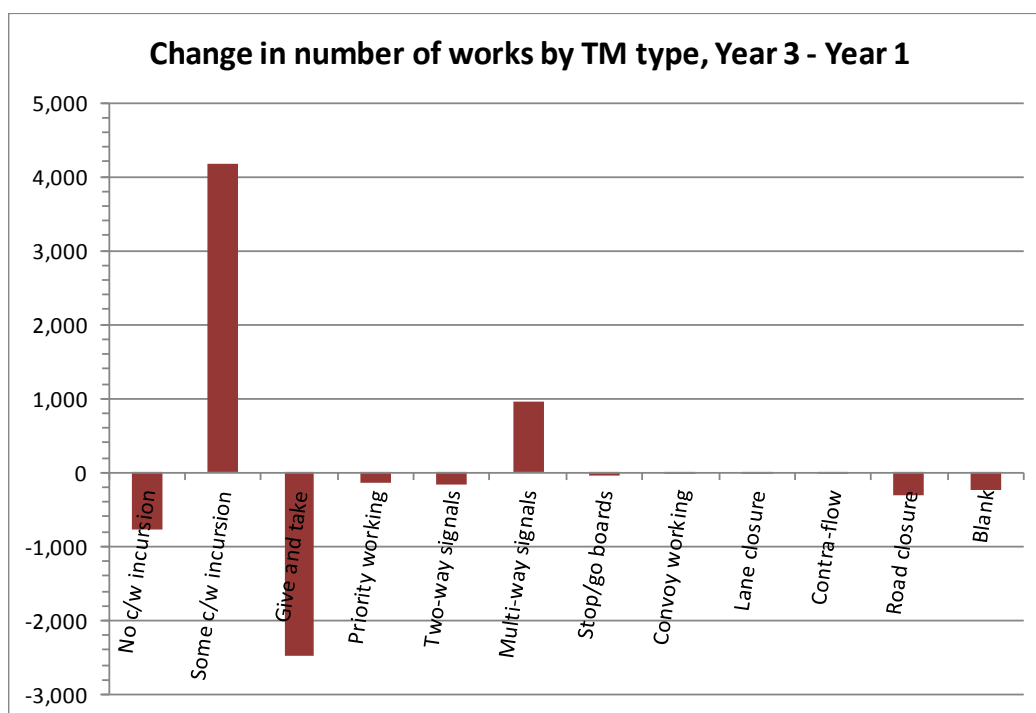




- 2.2.8 Other than the 54% increase in works by Virgin Media, the changes are not felt to be significant and are generally indicative of annual fluctuations in promoter works numbers to be expected year on year.
- 2.2.9 The following analysis is presented for applications by all works promoters. The same analysis is presented separately in Appendix A for highway authority works and utility company works.
- 2.2.10 Table 3 and the accompanying chart presents a comparison of the change in number of all works applications by traffic management type.

**Table 3 Number of applications by traffic management type**

TRAFFIC MANAGEMENT TYPE	Year 1 2015-16	Year 2 2016-17	Year 3 2017-18	Diff Yr 3 - Yr 1
No c/w incursion	6,784	5,037	6,014	-770
Some c/w incursion	8,836	12,979	13,002	4,166
Give and take	5,441	3,128	2,963	-2,478
Priority working	334	252	194	-140
Two-way signals	3,111	2,758	2,940	-171
Multi-way signals	1,045	1,625	2,007	962
Stop/go boards	730	651	685	-45
Convoy working	12	5	3	-9
Lane closure	268	347	254	-14
Contra-flow	7	4	3	-4
Road closure	1,499	1,332	1,202	-297
Blank	225	181		-225
<b>Total</b>	<b>28,292</b>	<b>28,299</b>	<b>29,267</b>	<b>975</b>





2.2.11 The increase in Some Carriageway Incursion works and reduction in Give and Take works evident in year 2 is repeated in year 3.

2.2.12 There is a 11% and 45% reduction in the number of works defined as operating under no carriageway incursion or give and take traffic management and a corresponding 47% increase in works operating under some carriageway incursion.

***Recommendation 01: Monitor applications for Some Carriageway Incursion to determine whether they should be more accurately defined as Give & Take.***

2.2.13 There is a further increase in works operating under multi-way signals. Increasing by 60% in year 2 and by 100% in year 3; from 1,045 in year 1 and 1,625 in year 2 to 2,007 in year 3.

2.2.14 The number of utility works operating under multi-way signal control increased by 549 in year 2. This is likely to be a result of promoters being given a FPN for using give and take traffic management close to a junction in year 1, therefore specifying multi-way signals to cover against this in years 2 and 3.

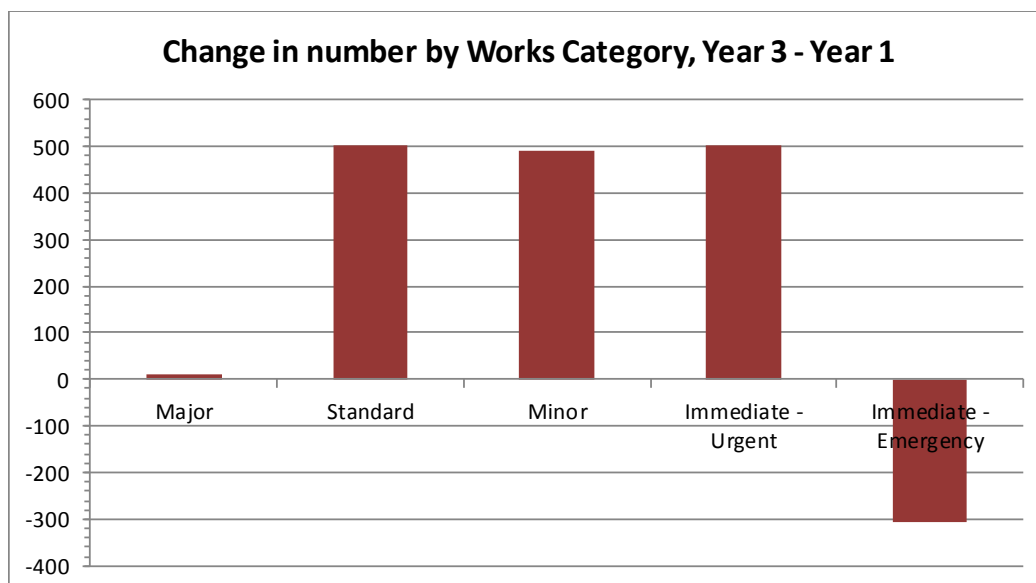
***Recommendation 02 (ongoing): Monitor give and take and some incursion permit applications to identify if the works are likely to take place close to a junction. If so, consider directing promoter to use multi-way signal control.***

2.2.15 The changes in other traffic management types is not thought to be significant.

2.2.16 The total number of Permit applications by Works Category is shown in Table 4 and the accompanying chart.

**Table 4 Applications by works category**

WORKS STOPPED	Year 1 2015-16	Year 2 2016-17	Year 3 2017-18	Diff Yr 3 - Yr 1
Major	1,595	1,732	1,604	9
Standard	3,340	4,501	3,844	504
Minor	13,433	12,495	13,923	490
Immediate - Urgent	8,127	7,764	8,630	503
Immediate - Emergency	1,572	1,626	1,266	-306
Intention to Issue Licence	225	181		-225
<b>Total</b>	<b>28,292</b>	<b>28,299</b>	<b>29,267</b>	<b>975</b>

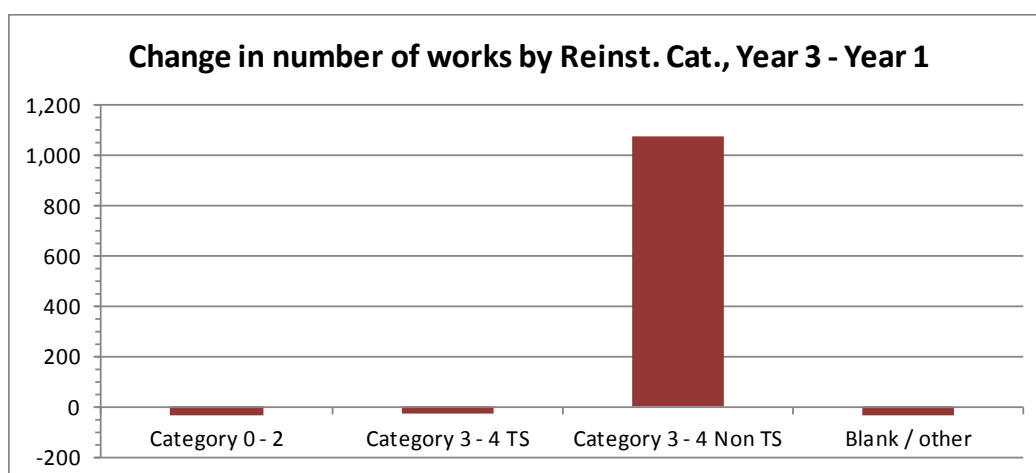


2.2.17 The variation in the number of works under each category is not thought to be significant, given the increase in permits overall.

2.2.18 The total number of Permit applications by reinstatement category type is shown in Table 5 and the accompanying chart.

**Table 5 Number by reinstatement category type**

REINSTATEMENT CATEGORY	Year 1 2015-16	Year 2 2016-17	Year 3 2017-18	Diff Yr 3 - Yr 1
Category 0 - 2	6,464	6,395	6,428	-36
Category 3 - 4 TS	5,338	5,238	5,311	-27
Category 3 - 4 Non TS	15,942	16,215	17,016	1,074
Blank / other	548	451	512	-36
<b>All works</b>	<b>28,292</b>	<b>28,299</b>	<b>29,267</b>	<b>975</b>





2.2.19 The change in works by road type is not significant. The overall increase in number of works permitted in year 3 appears to be predominantly across the Category 3 and 4 non-traffic sensitive network.

2.2.20 Table 6 shows a comparison of the average works duration for all works.

**Table 6 Average works duration**

DURATION	Year 1 2015-16	Year 2 2016-17	Year 3 2017-18	Diff Yr 3 - Yr 1
Average duration (days)	4.7	5.1	4.2	-0.5
<b>Total number of days worked</b>	<b>133,791</b>	<b>143,595</b>	<b>121,996</b>	<b>-11,795</b>

2.2.21 Overall the average works duration has reduced significantly in year 3, from 4.7 days in year 1 and 5.2 days in year 2.

2.2.22 As a result, the number of days worked across the network throughout the year has reduced by almost 12,000 compared with year 1, a reduction of 9%, despite a 3% increase in the number of works carried out.

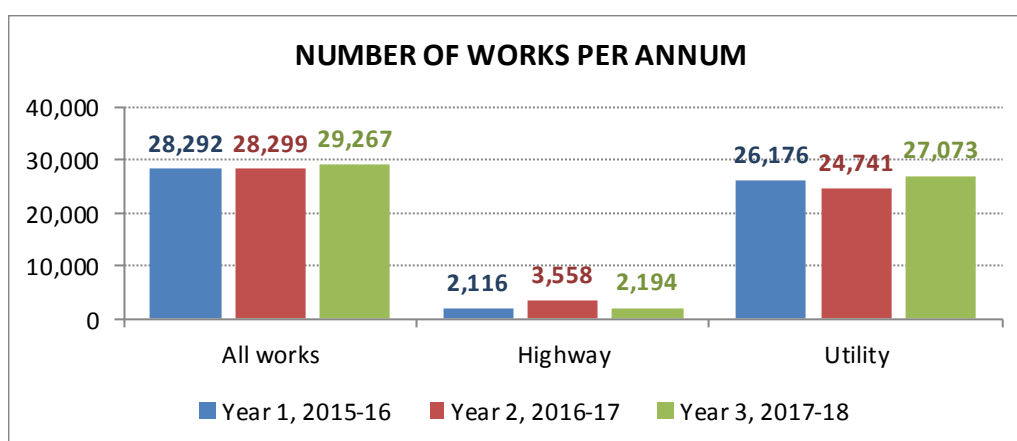
2.2.23 The year 3 data shows a larger 15% overall reduction in number of days worked, when compared with the previous year.

2.2.24 Overall, the average duration of highway works (Appendix A.1) reduces from 12.8 days to 9.9 days. The average duration of Major works reduces from 26.9 days to 16.0 days.

2.2.25 The average duration of all utility works reduces from 4.1 days to 3.7 days (Appendix A.2).

### 2.3 Scheme Benefit

2.3.1 Figure 1 presents the number of works per annum during the first 3 years since the introduction of the Permit Scheme.



**Figure 1 Number of works per annum**

2.3.2 The change in number of works across the network is not significant. A reduction in highway works in year 3 is offset by a corresponding increase in the number of utility works.



2.3.3 The average duration for both highway and utility works reduces by 11% compared with year 1. There are approximately 12,000 fewer days worked, split almost equally between highway and utility works promoters.

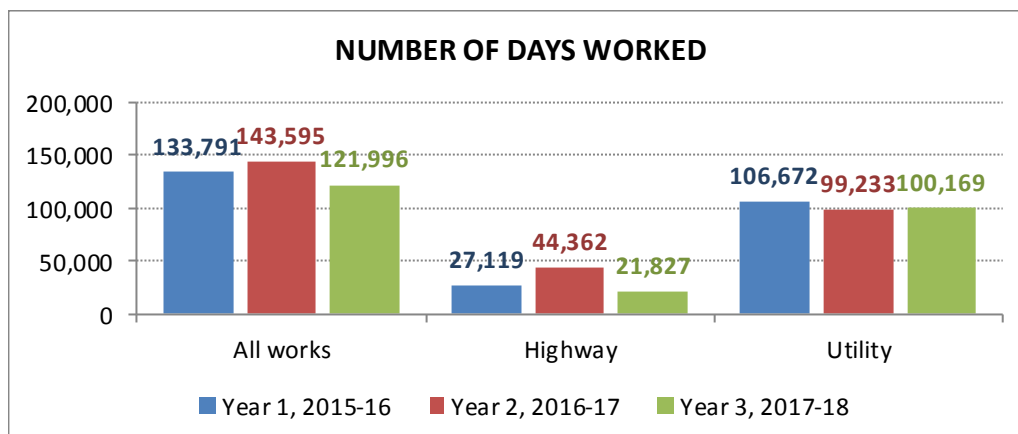


Figure 2 Number of days worked per annum

2.3.4 The benefit is assessed against the benchmark prior to the introduction of the Permit Scheme.

2.3.5 The CBA business case calculated the cost per day for each traffic management type on each street type. Since the majority of the reduction in days worked numbers is accounted for across all traffic management types, the financial benefit to road users of the Permit Scheme in year 2 is calculated as:

- Average monetary cost of works per day, £592 (source: CBA report 2010 prices, average cost of impact for all works involving some form give & take traffic management)
- Number of days saved under Permit Scheme, 39,591
- **Monetary benefit to road users, £23.4M per annum**

2.3.6 This saving equates to approximately 32% of the overall cost of works calculated in the CBA (£72.0M per annum total cost to road users).

## 2.4 Conclusions

2.4.1 The year 3 data shows a small overall increase in the number of utility permit applications compared with year 1, offsetting a similar reduction in year 2. The number of highway authority permit applications is consistent in year 3 with the year 1 data.

2.4.2 Overall the average works duration has reduced by 11% from 4.7 days in year 1 to 4.2 days in year 3.

2.4.3 The introduction of the permit scheme reduced the total number of days worked across the network by almost 28,000. The reduction in average duration in year 3 further reduces the total number of days worked on the network by an additional 11,795 or 9%, compared with year 1.

2.4.4 The CBA business case calculated the cost per day for each traffic management type on each street type. The financial benefit to road users of the Permit Scheme in year 3 is calculated at **£23.4M per annum**. This saving equates to approximately 32% of the overall cost of works calculated in the CBA (£72.0M per annum total cost to road users).



- 2.4.5 The 24% reduction in number of days worked since Noticing is substantially higher than the 5% benefit specified in the DfT guidelines for the business case justification for a move to Permit Schemes.
- 2.4.6 The benefit achieved in year 3 is higher than that achieved in years 1 and 2. Recommendation 04 in the year 2 annual report, to monitor highway Standard works permit applications to determine if this works category is appropriate and to challenge the proposed duration if not, contributed to the substantial improvement achieved in year 3.



### 3 KPI MONITORING

#### 3.1 Introduction

3.1.1 The four Key Performance Indicators committed for inclusion in the annual review are;

- **KPI 1**, the number of Permit and Permit Variation applications received and a breakdown of the number granted and refused
- **KPI 2**, the number of conditions applied by condition type
- **KPI 3**, the number of approved Permit variations (extensions)
- **KPI 7**, the number of inspections carried out to monitor conditions

3.1.2 The above data should be presented separately for highway authority and utility company applications to demonstrate parity in the application of the Scheme.

#### 3.2 KPI review

3.2.1 KPI 1 - the number and proportion of Permit and Permit Variation applications received and refused; a breakdown of refusal rate is presented below.

3.2.2 Table 7 and Figure 3 shows the breakdown of number of permit applications and permit variation requests received and the refusal rate.

**Table 7 KPI 1, Permit and Variation applications received and refused**

Promoter	Received	Refused	%
Highway authority	2,654	151	5.7%
Utility	30,737	2,611	8.5%
ALL	33,391	2,762	8.3%

3.2.3 The refusal rate is slightly higher in year 3 compared with the previous year; highway authority refusal rate increasing from 3% to 5.7% and for utility applications from 7.8% to 8.5%. Neither of these increases is significant.

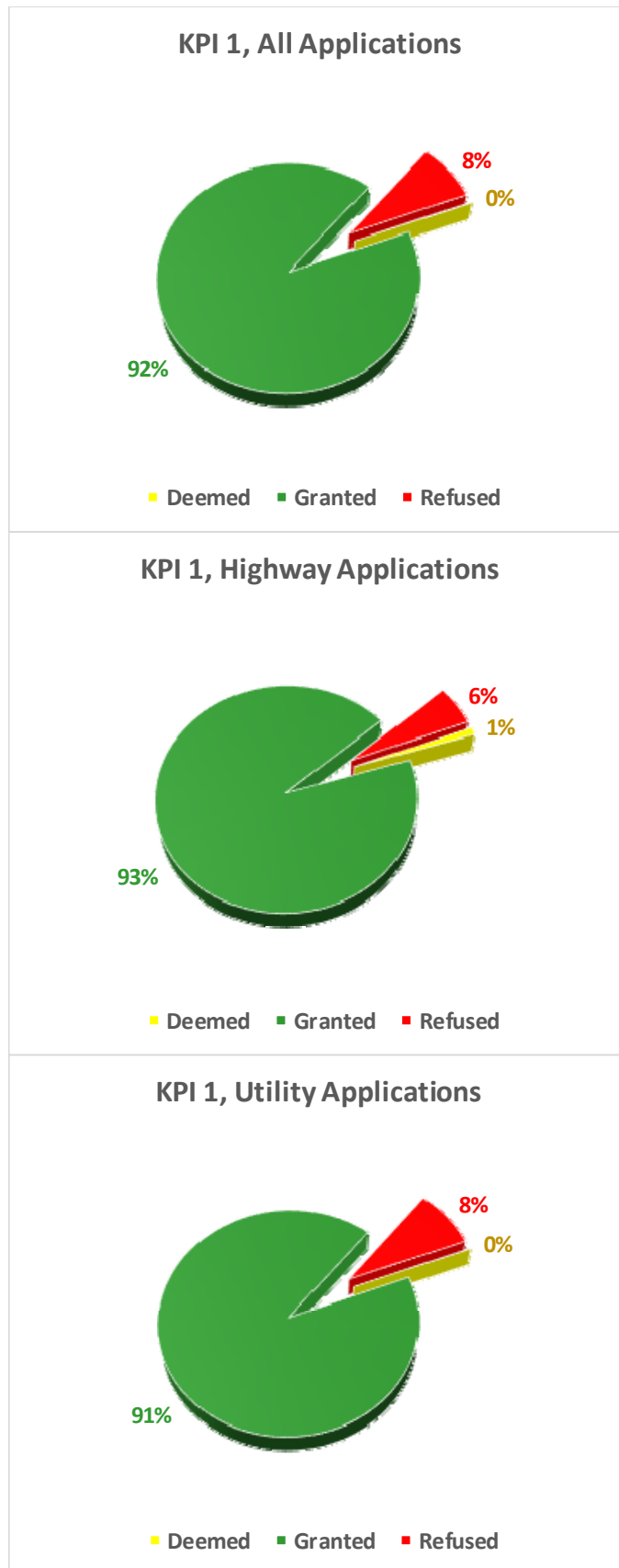


Figure 3: KPI 1, Permit and Variation Applications





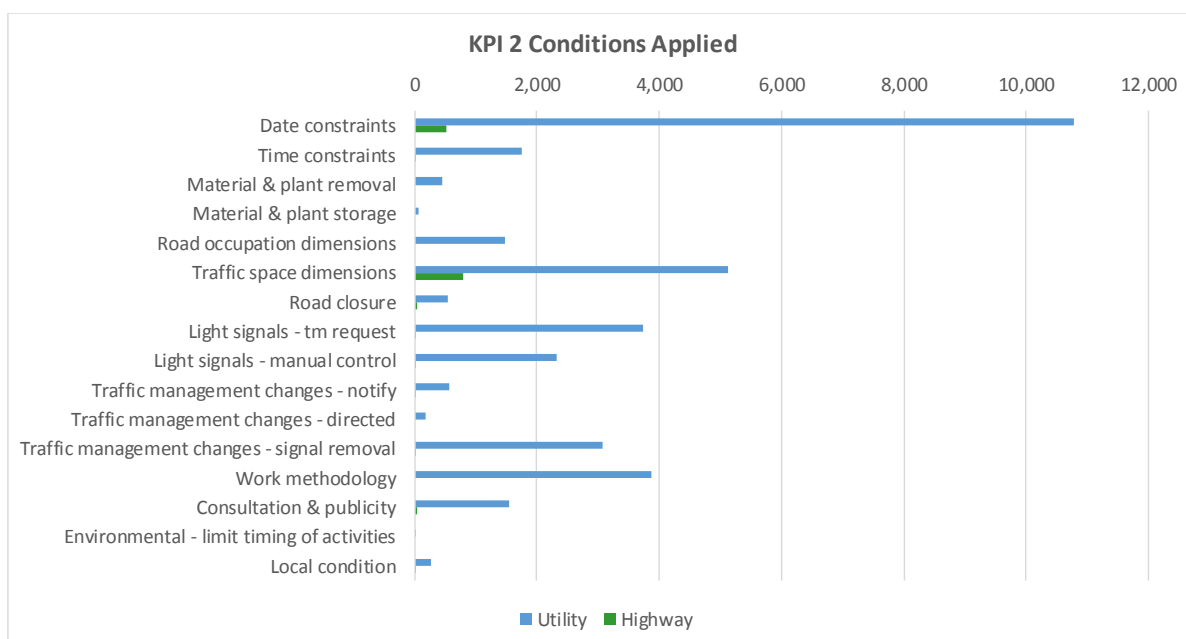
- 3.2.4 KPI 1 – Approximately 8% all permit and permit variation applications by statutory undertakers were refused. 6% of applications by the highway authority were refused.
- 3.2.5 KPI 2 – the number of conditions applied by condition type; a breakdown of the number of conditions applied by condition type for highway and utility permit applications is shown in Table 8 and Figure 4.

**Table 8 KPI 2, Conditions applied, number and type**

All Conditions		Utility	Highway	All
	TOTAL	35,750	1,474	37,224
		96%	4%	

Condition	Condition Description	Utility	Highway	All
NCT02a	Date constraints	10,770	526	11,296
NCT02b	Time constraints	1,749	15	1,764
NCT04a	Material & plant removal	446	0	446
NCT04b	Material & plant storage	67	0	67
NCT05a	Road occupation dimensions	1,475	0	1,475
NCT06a	Traffic space dimensions	5,132	792	5,924
NCT07a	Road closure	542	51	593
NCT08a	Light signals - tm request	3,737	4	3,741
NCT08b	Light signals - manual control	2,313	10	2,323
NCT09a	Traffic management changes - notify	563	2	565
NCT09b	Traffic management changes - directed	188	0	188
NCT09c	Traffic management changes - signal removal	3,069	7	3,076
NCT10a	Work methodology	3,876	0	3,876
NCT11b	Consultation & publicity	1,541	40	1,581
NCT12a	Environmental - limit timing of activities	5	0	5
NCT13	Local condition	277	27	304
	TOTAL	35,750	1,474	37,224



**Figure 4: KPI 2, Conditions Applied**

- 3.2.6 The number of conditions reported has reduced slightly in year 3 to almost 36,000 from 47,000 in the previous year. This is still substantially higher than the 4,000 conditions submitted in year 1.
- 3.2.7 This is a result of Recommendations 03 and 04 in the 12 month review report, to apply more conditions to highway works (increased tenfold by year 2) and to ensure condition types are correctly referenced NCT0xx by all works promoters (to ensure Symology reports all condition codes correctly).
- 3.2.8 The ratio of utility conditions to highway conditions is unchanged and the ratio of each condition type is broadly consistent with year 2.
- 3.2.9 Conditions are more widely spread for utility applications, with date constraints, traffic space dimensions, traffic signal conditions and consultation/publicity accounting for the bulk of the increase.
- 3.2.10 BT and United Utilities Water continue to account for almost 60% of the conditions applied.
- 3.2.11 KPI 3 – number of approved extensions; the following figures show the number of extensions granted and refused, for all promoters, and separately for highway authority applications and for statutory undertakers.
- 3.2.12 The number of applications to extend permit duration has reduced from 2,551 in year 2 to 1,710 in year 3.

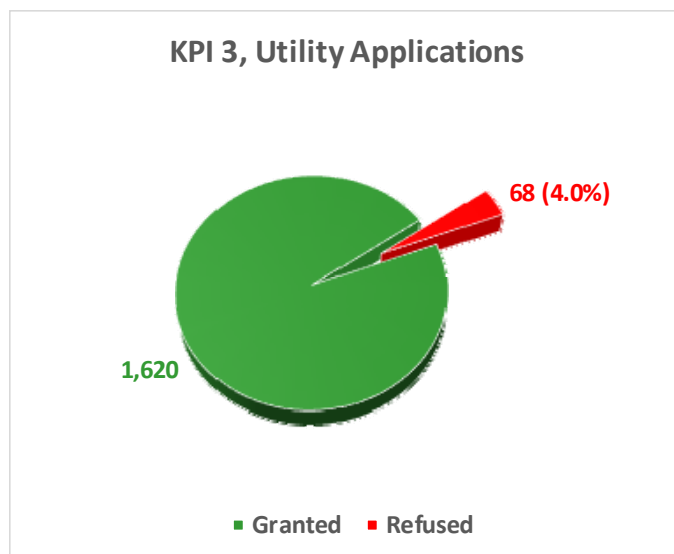
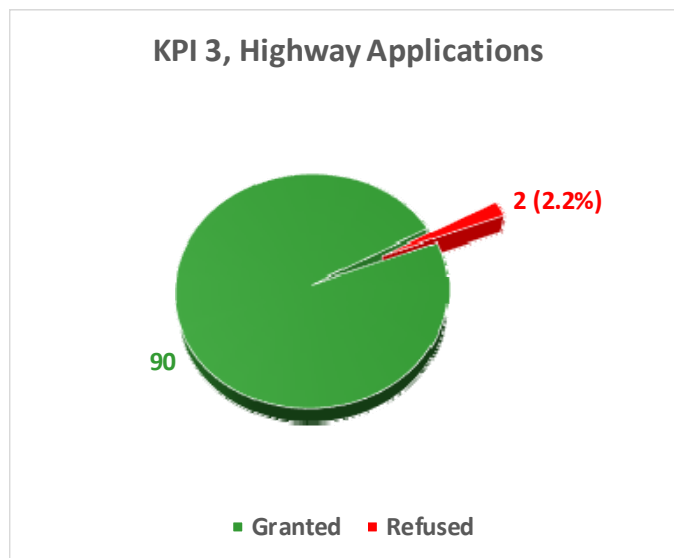
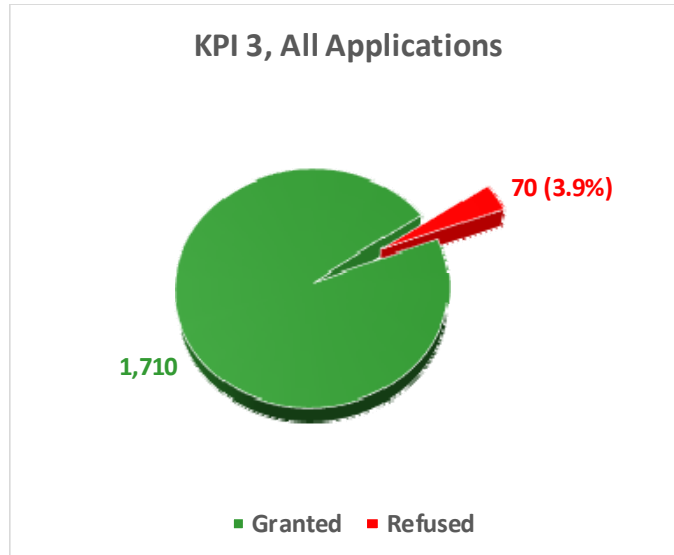


Figure 5: KPI 3, Permit Extensions



- 3.2.13 The number of highway authority applications for permit extensions reduced from 334 in year 2 to 90. Two were refused, a refusal rate of 2%.
- 3.2.14 The number of applications for extensions by utility works promoters reduced by 35% from 2,217 to 1,620. 68 were refused, a refusal rate of 4%, which is slightly higher than the 2% refusal rate in year 2.
- 3.2.15 KPI 7 - the Number of Inspections carried out to monitor conditions. During the year 4,845 inspections have been carried out to monitor permit conditions and from these inspections 3,922 passed and 923 (19%) were found to be non-compliant, see Table 9 below.

**Table 9 Number of inspections carried out to monitor conditions**

Permit Condition Inspections	Passed	Non-Compliant	Abortive	Number of Inspections	Fail %
Utility	3,922	923		4,845	19%

- 3.2.16 The failure rate has reduced slightly from 21% to 19%.

### 3.3 Conclusions

- 3.3.1 **KPI 1**, the number of Permit and Permit Variation applications received and a breakdown of the number granted and refused; approximately 8% all permit and permit variation applications by statutory undertakers were refused. 6% of applications by the highway authority were refused. The refusal rate has not changed significantly from years 1 and 2.
- 3.3.2 **KPI 2**, the number of conditions applied by condition type; all but 5% of the conditions applied relate to applications by utility promoters. The number of conditions reported has reduced slightly in year 3 to almost 36,000 from 47,000 in the previous year. The ratio of utility conditions to highway conditions is unchanged and the ratio of each condition type is broadly consistent with year 2. BT and United Utilities Water continue to account for almost 60% of the conditions applied.
- 3.3.3 **KPI 3**, the number of approved Permit variations (extensions); applications recorded reduced from 2,551 in year 2 to 1,710. Of the 90 requests for extensions by the highway authority 2 were refused (2% refusal rate). Of the 1,620 applications for extensions by the utilities, 68 were refused (4%)%, which is slightly higher than the 2% refusal rate in year 2.
- 3.3.4 **KPI 7**, the number of inspections carried out to monitor conditions; the number of inspections carried out for utility works reduced from 5,973 to 4,845. The failure rate has reduced marginally from 21% to 19%.



## 4 CONCLUSIONS

### 4.1 Summary

- 4.1.1 The Lancashire County Council (LCC) Permit Scheme went live on 2<sup>nd</sup> March 2015.
- 4.1.2 Following the third anniversary of the Permit Scheme on 2<sup>nd</sup> February 2018, GK-TC has been commissioned to undertake a detailed review of the operation during year 3 and to determine whether benefits achieved in the first two years have been maintained.
- 4.1.3 The operation of the second year of operation is evaluated and reported in this report '*Lancashire County Council Year 3 Review, 2017-18*'.

### 4.2 Scheme benefits

- 4.2.1 The year 3 data shows a small overall increase in the number of utility permit applications compared with year 1, offsetting a similar reduction in year 2. The number of highway authority permit applications is consistent in year 3 with the year 1 data.
- 4.2.2 Overall the average works duration has reduced by 11% from 4.7 days in year 1 to 4.2 days in year 3.
- 4.2.3 The introduction of the permit scheme reduced the total number of days worked across the network by almost 28,000. The reduction in average duration in year 3 further reduces the total number of days worked on the network by an additional 11,795 or 9%, compared with year 1.
- 4.2.4 The CBA business case calculated the cost per day for each traffic management type on each street type. The financial benefit to road users of the Permit Scheme in year 3 is calculated at **£23.4M per annum**. This saving equates to approximately 32% of the overall cost of works calculated in the CBA (£72.0M per annum total cost to road users).
- 4.2.5 The 24% reduction in number of days worked since Noticing is substantially higher than the 5% benefit specified in the DfT guidelines for the business case justification for a move to Permit Schemes.
- 4.2.6 The benefit achieved in year 3 is higher than that achieved in years 1 and 2. Recommendation 04 in the year 2 annual report, to monitor highway Standard works permit applications to determine if this works category is appropriate and to challenge the proposed duration if not, contributed to the substantial improvement achieved in year 3.

### 4.3 Recommendations

- 4.3.1 Only two recommendations have been made to monitor performance during year 4 to help maintain the significant benefits achieved in year 3;

***Recommendation 01: Monitor applications for Some Carriageway Incursion to determine whether they should be more accurately defined as Give & Take.***

***Recommendation 02 (ongoing): Monitor give and take and some incursion permit applications to identify if the works are likely to take place close to a junction. If so, consider directing promoter to use multi-way signal control.***



## 4.4 Conclusions

- 4.4.1 Monitoring the key performance indicators and evidence gained from the first 3 years of operation demonstrates that the Permit Scheme;
- improves coordination of activities
  - improves safety at road and street works
  - improves communication between authority and utility companies
  - reduces occupancy of the highway
  - improves accuracy of works records recorded in the Register
  - reduces customer complaints
- 4.4.2 This review has demonstrated that Scheme has achieved its objectives in the second year, as defined in the application documents.

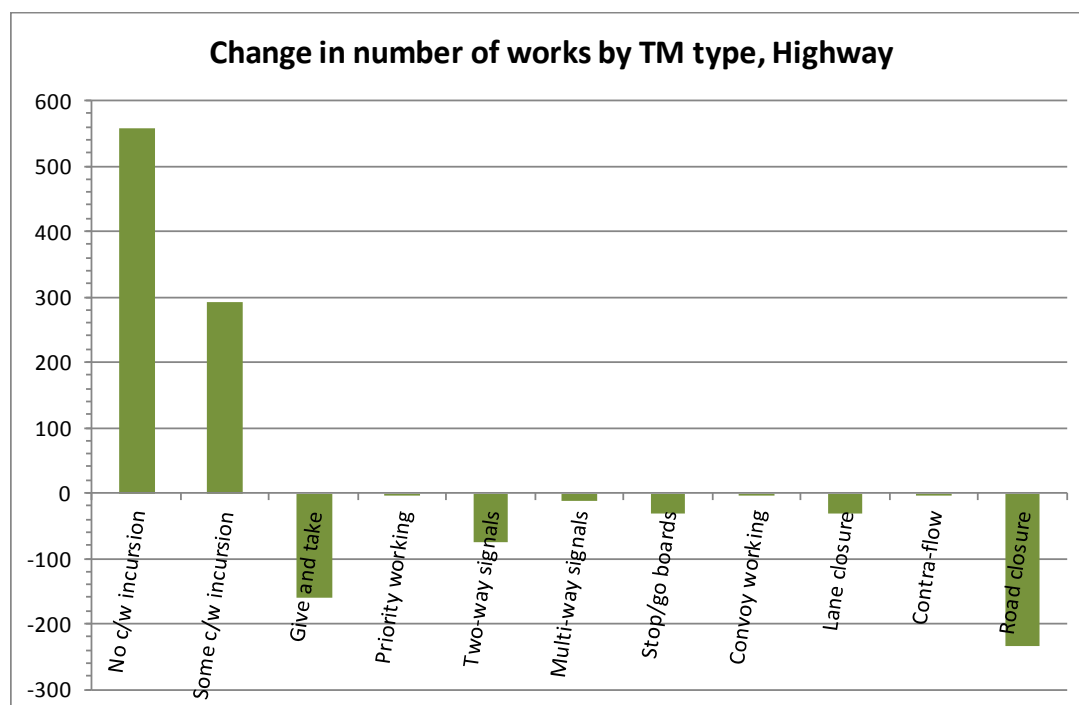
## A. PERMIT APPLICATIONS 2017-18

### A.1 Highway authority works

The number of highway authority applications by traffic management type is shown in Table A.1.

**Table A.1 Number of applications by traffic management type**

TRAFFIC MANAGEMENT TYPE	Year 1 2015-16	Year 2 2016-17	Year 3 2017-18	Diff Yr 3 - Yr 1
No c/w incursion	126	1,685	685	559
Some c/w incursion	201	147	492	291
Give and take	328	285	169	-159
Priority working	13	16	8	-5
Two-way signals	231	293	156	-75
Multi-way signals	62	93	51	-11
Stop/go boards	230	186	199	-31
Convoy working	1			-1
Lane closure	82	158	51	-31
Contra-flow	1	1		-1
Road closure	616	513	383	-233
Blank	225	181		-225
<b>Total</b>	<b>2,116</b>	<b>3,558</b>	<b>2,194</b>	<b>78</b>



There is a 559 increase in the number of works with traffic management type classified as no carriageway incursion – this is a 450% increase on year 1. Some carriageway incursion works have increased by 145% to 492.

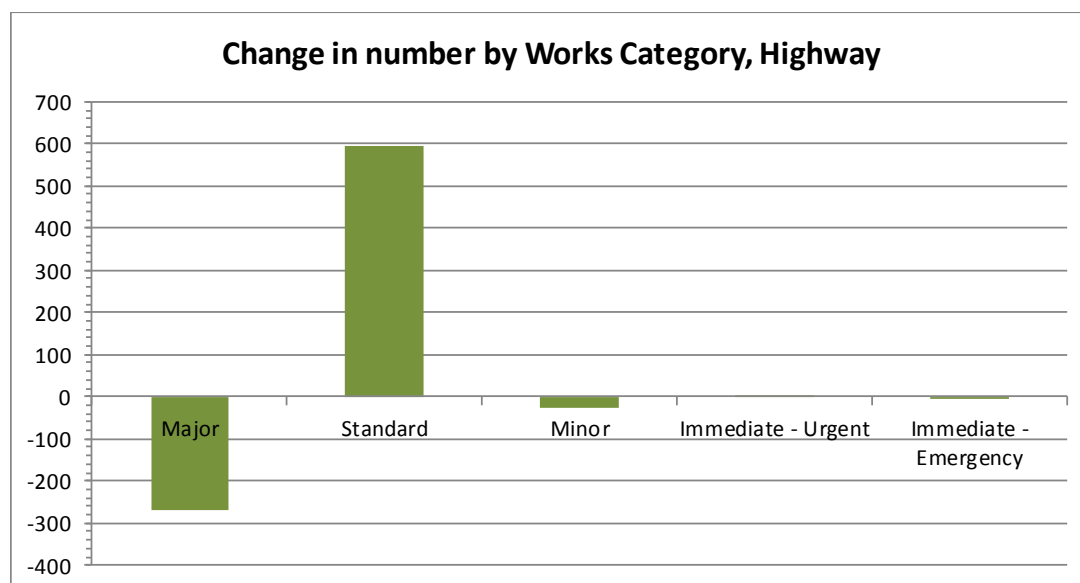
There is a reduction in works operating under Give & Take, temporary traffic signals and road closures, reducing by 30% to 50% compared with year 1.

The year 2 data showed a 1,500 increase in the number of works operating incursion, suggesting the traffic management type was defaulting to this traffic management type.

The current data suggests this issue has been addressed in year 3.

**Table A.2 Applications by works category**

WORKS STOPPED	Year 1 2015-16	Year 2 2016-17	Year 3 2017-18	Diff Yr 3 - Yr 1
Major	768	835	497	-271
Standard	574	1,918	1,170	596
Minor	443	432	417	-26
Immediate - Urgent	63	94	68	5
Immediate - Emergency	43	98	42	-1
Intention to Issue Licence	225	181		-225
<b>Total</b>	<b>2,116</b>	<b>3,558</b>	<b>2,194</b>	<b>78</b>



Standard works increase by almost 600, but shows a near 750 reduction compared with year 2. Major works have reduced by 35% compared with year 1 and by 60% compared with year 2.

The change in number of Minor and Immediate works is not significant and is representative of typical year on year variations.



**Table A.3 Average works duration**

DURATION	Year 1 2015-16	Year 2 2016-17	Year 3 2017-18	Diff Yr 3 - Yr 1
Average duration (days)	12.8	12.5	9.9	-2.9
<b>Total number of days worked</b>	<b>27,119</b>	<b>44,362</b>	<b>21,827</b>	<b>-5,292</b>

Highway authority works recorded show a 23% reduction in average duration in year 3 (from 12.8 to 9.9 days) and a 20% reduction in the number of days worked.

The reduction in average duration is due in part to the 35% reduction in the number of Major works.

**Table A.4 Average works duration, by works category**

**Year 3, 2017-18, Duration by works category**

MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
16.0	7.5	8.4	7.9	24.5
<b>7,963</b>	<b>8,798</b>	<b>3,500</b>	<b>535</b>	<b>1,031</b>

**Year 2, 2016-17, Duration by works category**

MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
26.9	8.6	3.6	6.6	12.8
<b>22,477</b>	<b>16,517</b>	<b>1,574</b>	<b>619</b>	<b>1,253</b>

**Difference, Year 3 - Year 2**

MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
-10.9	-1.1	4.8	1.3	11.7
<b>-14,514</b>	<b>-7,719</b>	<b>1,926</b>	<b>-84</b>	<b>-222</b>

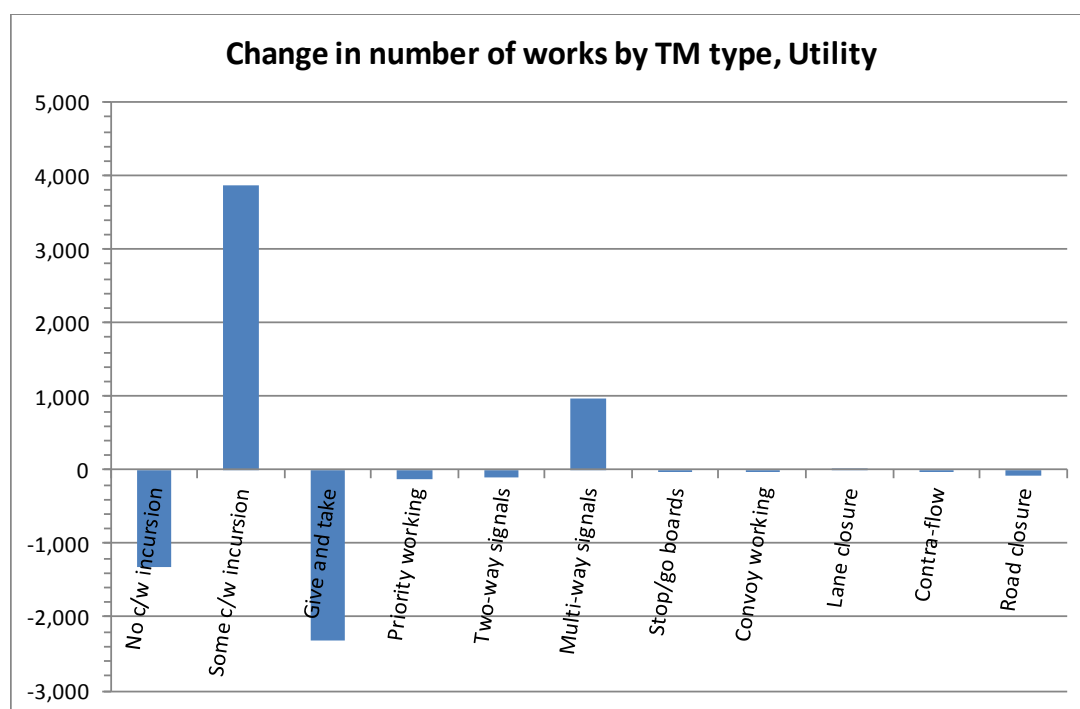
The average duration of Major works has reduced from 26.9 days to 16.0 days, from year 2 to year 3.

## A.2 Utility works

The number of utility works applications by traffic management type is shown in Table A.5.

**Table A.5 Number of applications by traffic management type**

TRAFFIC MANAGEMENT TYPE	Year 1 2015-16	Year 2 2016-17	Year 3 2017-18	Diff Yr 3 - Yr 1
No c/w incursion	6,658	3,352	5,329	-1,329
Some c/w incursion	8,635	12,832	12,510	3,875
Give and take	5,113	2,843	2,794	-2,319
Priority working	321	236	186	-135
Two-way signals	2,880	2,465	2,784	-96
Multi-way signals	983	1,532	1,956	973
Stop/go boards	500	465	486	-14
Convoy working	11	5	3	-8
Lane closure	186	189	203	17
Contra-flow	6	3	3	-3
Road closure	883	819	819	-64
Blank				
<b>Total</b>	<b>26,176</b>	<b>24,741</b>	<b>27,073</b>	<b>897</b>



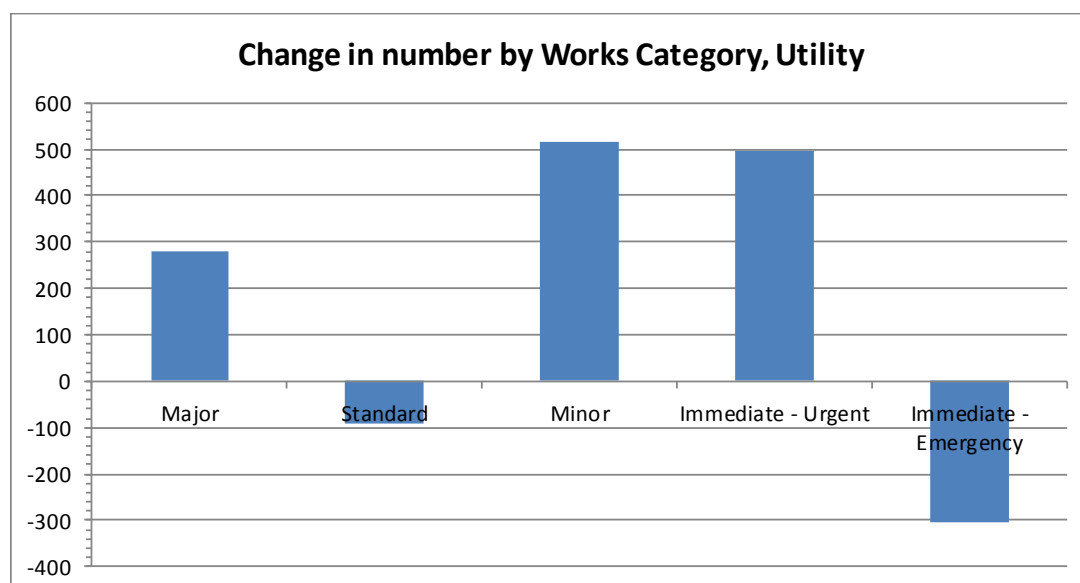
The number of works defined with no carriageway incursion or give and take traffic management has reduced by 20% and 45% compared with year 1. There is a corresponding 45% increase in the number operating with some carriageway incursion.

The year 3 data shows a further large increase in the number of works operating with multi-way signals; an increase of 973 (99%) on year 1. This may be a result of FPN being issued in years 1 and 2 for promoters using give and take or some carriageway incursion close to junctions, when in many cases multi-way signal control would be the appropriate method of traffic management.

The change in number of traffic management types is not significant and is representative of typical year on year variations.

**Table A.6 Applications by works category**

WORKS STOPPED	Year 1 2015-16	Year 2 2016-17	Year 3 2017-18	Diff Yr 3 - Yr 1
Major	827	897	1,107	280
Standard	2,766	2,583	2,674	-92
Minor	12,990	12,063	13,506	516
Immediate - Urgent	8,064	7,670	8,562	498
Immediate - Emergency	1,529	1,528	1,224	-305
Other				
<b>Total</b>	<b>26,176</b>	<b>24,741</b>	<b>27,073</b>	<b>897</b>



Utility works changes generally increase in line with the overall 897 increase in the number of utility works in year 3.

However, there is a relatively large 34% increase in the number of Major works compared with year 1.

**Table A.7 Average works duration**

DURATION	Year 1 2015-16	Year 2 2016-17	Year 3 2017-18	Diff Yr 3 - Yr 1
Average duration (days)	4.1	4.0	3.7	-0.4
<b>Total number of days worked</b>	<b>106,672</b>	<b>99,233</b>	<b>100,169</b>	<b>-6,503</b>

Utility works show a significant 10% reduction in average works duration in year 3. The total number of days worked shows a 6,500 or 6% reduction in spite of the 3% increase in the number of works undertaken.

**Table A.8 Average works duration, by Works Category****Year 3, 2017-18, Duration by works category**

MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
12.7	6.4	2.0	4.0	6.7
<b>14,091</b>	<b>17,037</b>	<b>26,642</b>	<b>34,259</b>	<b>8,140</b>

**Year 2, 2016-17, Duration by works category**

MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
14.4	7.2	2.0	4.2	7.2
<b>12,876</b>	<b>18,705</b>	<b>24,069</b>	<b>32,548</b>	<b>11,035</b>

**Difference, Year 3 - Year 2**

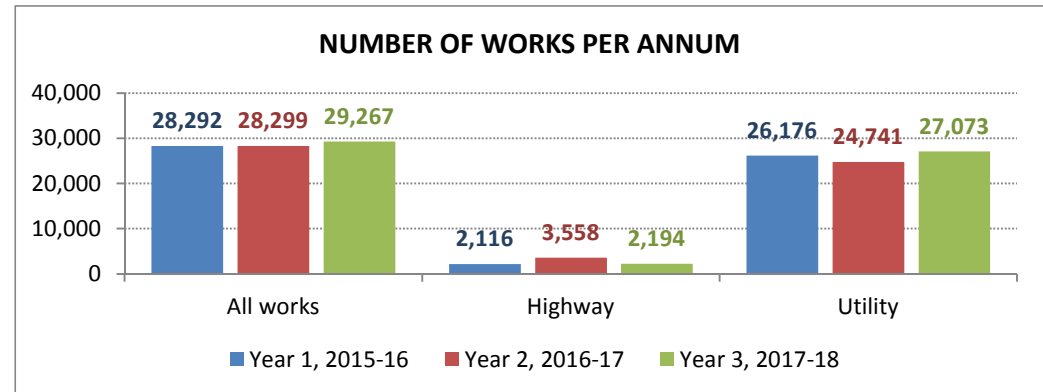
MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
-1.7	-0.8		-0.2	-0.5
<b>1,215</b>	<b>-1,668</b>	<b>2,573</b>	<b>1,711</b>	<b>-2,895</b>

All works categories show a further reduction in average duration, other than Minor works which remains unchanged since the previous year.

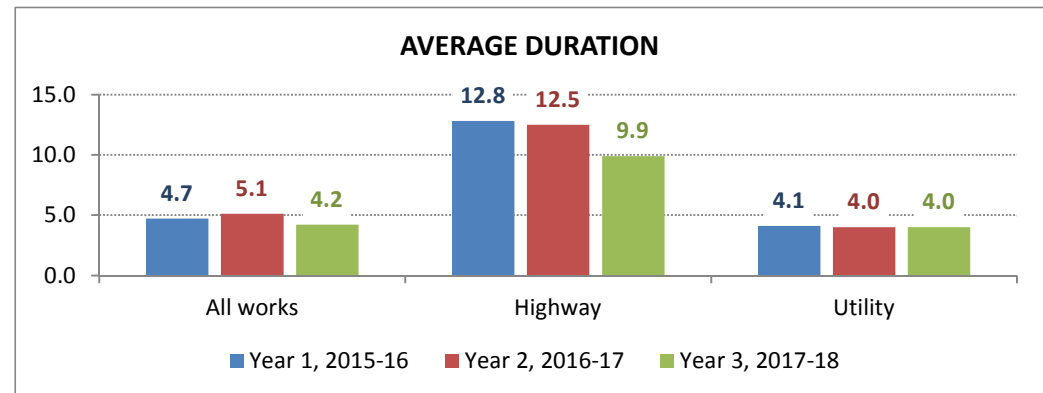
**B. SCHEME BENEFITS 2017-18**

## SCHEME BENEFITS

NUMBER OF WORKS (number)			
	All works	Highway	Utility
Year 1, 2015-16	28,292	2,116	26,176
Year 2, 2016-17	28,299	3,558	24,741
Year 3, 2017-18	29,267	2,194	27,073
Change, Year 2 - Year 1	975	78	897
Change (%)	3.4%	3.7%	3.4%



DURATION (days)			
	All works	Highway	Utility
Year 1, 2015-16	4.7	12.8	4.1
Year 2, 2016-17	5.1	12.5	4.0
Year 3, 2017-18	4.2	9.9	4.0
Change (days)	-0.5	-2.9	-0.1



DAYS WORKED (days)			
	All works	Highway	Utility
Year 1, 2015-16	133,791	27,119	106,672
Year 2, 2016-17	143,595	44,362	99,233
Year 3, 2017-18	121,996	21,827	100,169
Change, Year 2 - Year 1	-11,795	-5,292	-6,503
Change (%)	-8.8%	-19.5%	-6.1%

