



St. Helens
Council

The St. Helens Council Permit Scheme for Road and Street Activities

Annual Report 07, 2018-19





*St Helens Permit Scheme,
Annual Report 07, 2018-19*

Contents:		Page
Chapter 1	INTRODUCTION	1
Chapter 2	PERMIT APPLICATIONS	3
Chapter 3	KPI MONITORING	11
Chapter 4	CONCLUSIONS	18
Appendix A	PERMIT APPLICATIONS 2018-19	
A.1	All works	
A.2	Highway authority works	
A.3	Utility works	
Appendix B	SCHEME BENEFITS	
B.1	Summary	



1 INTRODUCTION

1.1 Background

- 1.1.1 St Helens Council (SHC) has been operating a Street Works Permit Scheme since April 2012. The Scheme operates as the St Helens (October 2015) Permit Scheme (MAPS). An approved Common Scheme currently operated by SHC only.
- 1.1.2 The statutory 12-month Annual Review and report to DfT was completed in 2013 following the first full 12 months of operating the Permit Scheme, '*St Helens Council Annual Report 01, 2012-13*'.
- 1.1.3 The purpose of the 12-month Annual 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 introduction of the Permit Scheme reduced the average duration of works by 20% and reduced the calculated cost of delays encountered at traffic management by 33%. The calculated Scheme benefit was 4 times greater than value for money threshold required by the Department for Transport (DfT).
- 1.1.5 At the end of each subsequent year, further reviews have been carried out and reported. This is a lower level review to monitor key performance indicators and identify and report any significant changes year on year.
- 1.1.6 The performance of the Scheme in subsequent years shows slight variation in the average duration, but generally shows the benefits to be maintained around the level achieved in year 1.

1.2 Year 7 review

- 1.2.1 The Council plan to undertake this review annually. This report presents the year 7 review, '*St Helens Council Annual Report 07, 2018-19*'.
- 1.2.2 The objectives of the year 7 review are to;
- Report the total number of Permit applications.
 - Evaluate key performance measures (e.g. average duration of works, number by works category/traffic management type, etc.) and identify any significant changes from year 1 and the previous year.
 - Report the monitored Key Performance Indicators (KPI 1, KPI 2, KPI 3 & KPI 7).



1.3 Report Structure

- 1.3.1 The analysis of the permit applications is presented in Chapter 2. The KPI review is reported in Chapter 3.
- 1.3.2 A summary and report conclusions and recommendations are presented in Chapter 4.



2 PERMIT APPLICATIONS

2.1 Methodology

2.1.1 Data sources available for this review are:

- Permit Scheme work stops notices, April 2018 - March 2019
- Previous year Permit Scheme work stops notices, April 2012 - March 2018

2.1.2 This review assesses the year on year change in the number of Permit applications and to monitor the key performance indicators. The purpose of the review is to identify any significant changes from the performance in year 1 and the previous year 6. Any large changes will be investigated in more detail and the potential impact on the Scheme performance and value will be considered.

2.1.3 The intention is to carry out a review annually and benchmark the Scheme performance against the first year of operation each time. The key metrics are also compared with the previous year, to monitor changes and avoid a small creeping increase going unnoticed for several years.

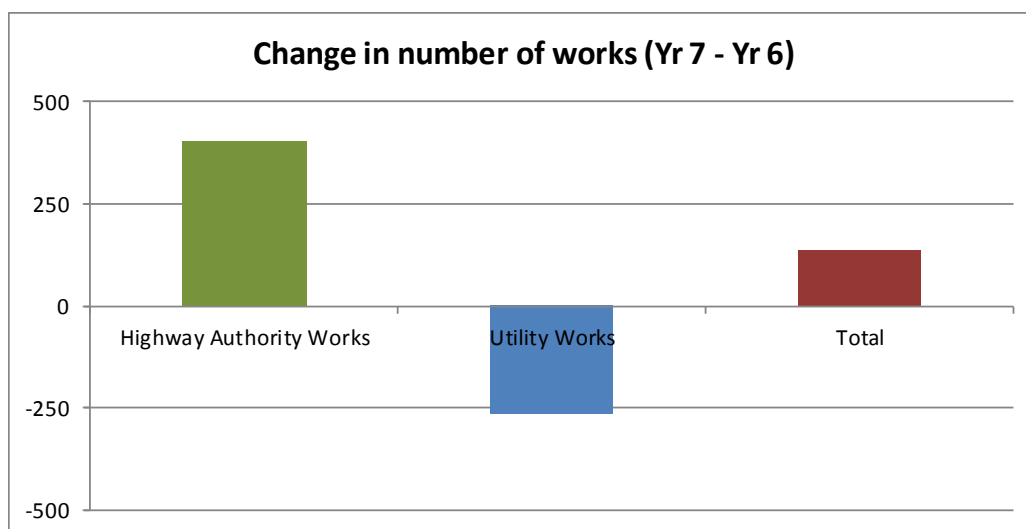
2.2 All works

2.2.1 The following series of charts and tables present a comparison of the year 7 2018-19 data and the year 1 and 6 data, 2012-13 and 2017-18.

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 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 6)
Highway Authority Works	10,281	5,980	6,382	402
Utility Works	4,050	4,756	4,491	-265
Total	14,331	10,736	10,873	137

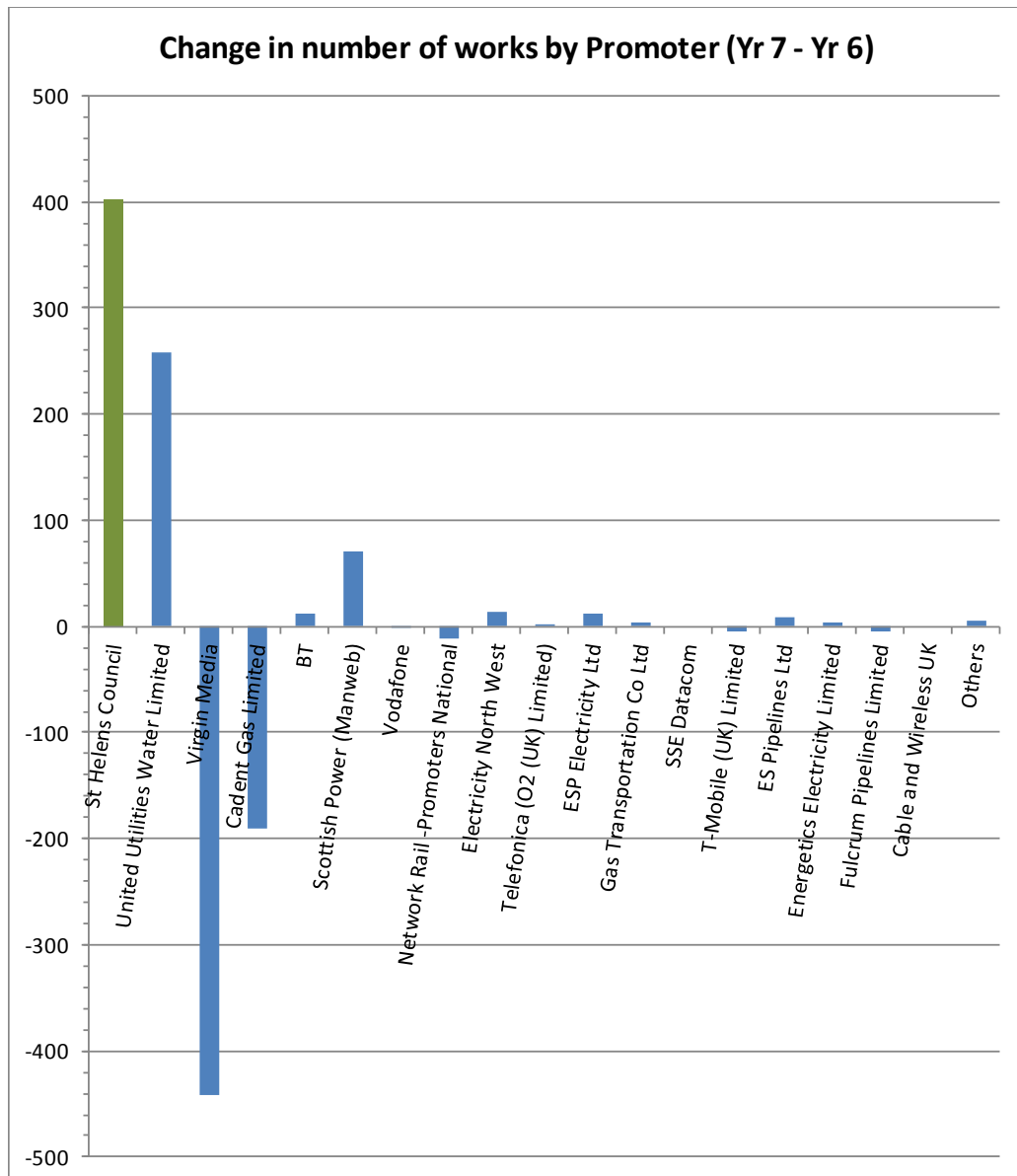




- 2.2.3 The biggest change is a 3,900 reduction in highway authority works, compared with year 1. This is a 38% reduction in highway works. The number of highway works completed has increased by 400 compared with year 6, a 7% increase.
- 2.2.4 The number of utility company works is 11% higher than year 1, but 6% lower than the previous year.
- 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 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 6)
St Helens Council	10,281	5,980	6,382	402
United Utilities Water Limited	1,622	1,494	1,752	258
Virgin Media	652	1,304	862	-442
Cadent Gas Limited	640	702	512	-190
BT	367	576	588	12
Scottish Power (Manweb)	474	447	517	70
Vodafone	3	9	7	-2
Network Rail -Promoters National	39	27	16	-11
Electricity North West	208	164	178	14
Telefonica (O2 (UK) Limited)	5	3	4	1
ESP Electricity Ltd			12	12
Gas Transportation Co Ltd	2	5	8	3
SSE Datacom	6			
T-Mobile (UK) Limited		8	4	-4
ES Pipelines Ltd	2	8	17	9
Energetics Electricity Limited	2		4	4
Fulcrum Pipelines Limited	19	9	5	-4
Cable and Wireless UK	9			
Others			5	5
Total	14,331	10,736	10,873	137



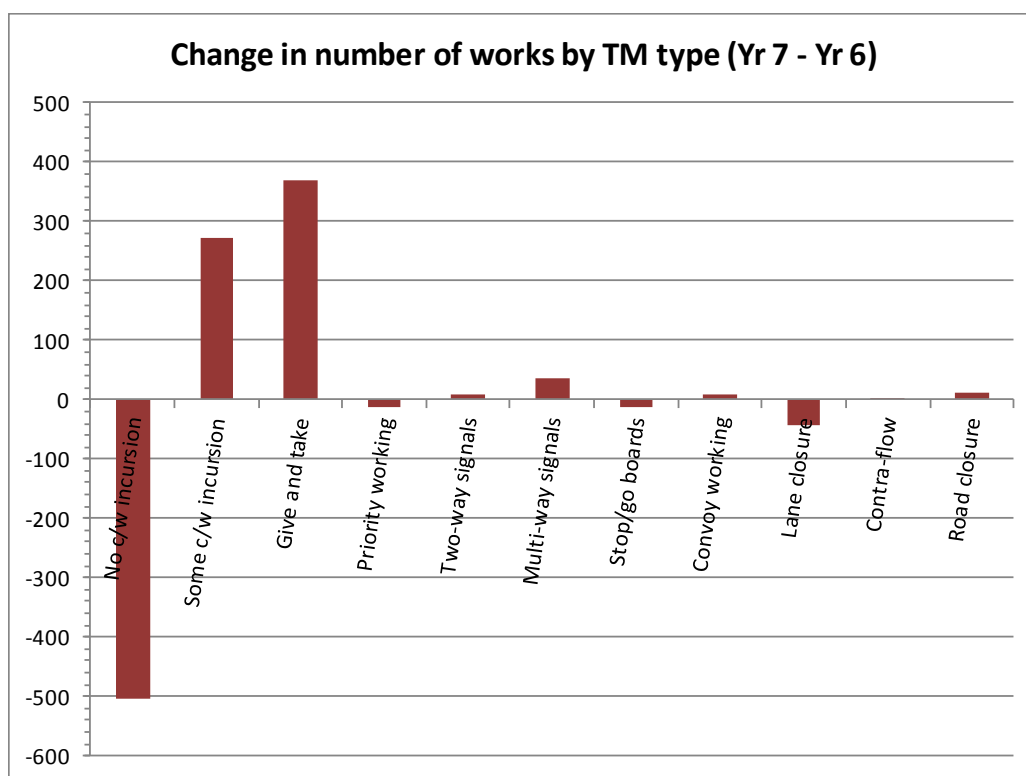
- 2.2.6 The number of works completed each year by utility companies is generally very consistent.
- 2.2.7 The number of works undertaken by Virgin Media doubled in year 6, to 1,304 from 652 in year 1. However, the number of works undertaken by Virgin Media in year 7 has reduced back to a level representative of the first years of the Scheme; reducing back to 862 works.
- 2.2.8 Cadent Gas Limited shows a small reduction of 128 and United Utilities Water Limited shows a small increase of 130 works in year 7.
- 2.2.9 The change in number of works by other promoters are not felt to be significant and are generally indicative of annual fluctuations in promoter works numbers to be expected year on year.
- 2.2.10 The summary analysis in this section is presented for works closed by all works promoters. A more detailed analysis is presented in Appendix A for all works, separately for highway authority works and utility company works.



2.2.11 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 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 6)
None / signing only	2,535			
No c/w incursion		1,828	1,325	-503
Some c/w incursion		2,026	2,297	271
Give and take	10,855	5,871	6,241	370
Priority working	4	20	8	-12
Two-way signals	320	358	368	10
Multi-way signals	148	247	284	37
Stop/go boards	230	74	61	-13
Convoy working	2		7	7
Lane closure	143	152	108	-44
Contra-flow	2	5	8	3
Road closure	92	155	166	11
Blank				
Total	14,331	10,736	10,873	137



2.2.12 The large change to no and some carriageway incursion is a result of the change to the ETon6 system in 2013.

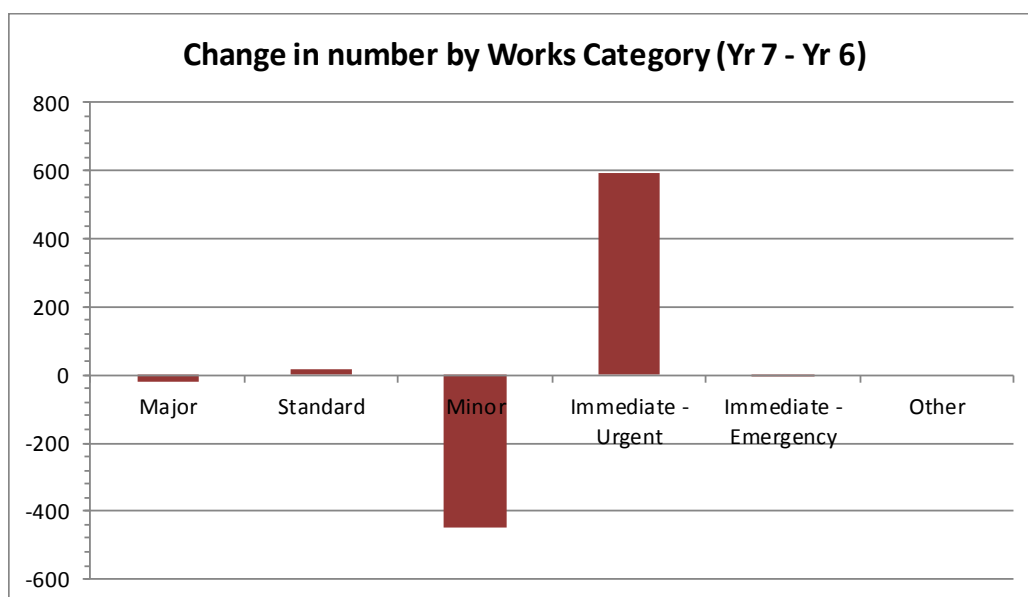
2.2.13 The changes from year 6 include an increase in the number of works operating with give & take or some carriageway incursion. This reverses a trend identified in the previous years' review.



- 2.2.14 The change for other traffic-controlled works are generally smaller than plus or minus 50, compared with year 6.
- 2.2.15 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 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 6)
Major	254	347	329	-18
Standard	616	558	577	19
Minor	2,801	3,288	2,839	-449
Immediate - Urgent	10,045	6,279	6,870	591
Immediate - Emergency	615	264	258	-6
Other				
Total	14,331	10,736	10,873	137

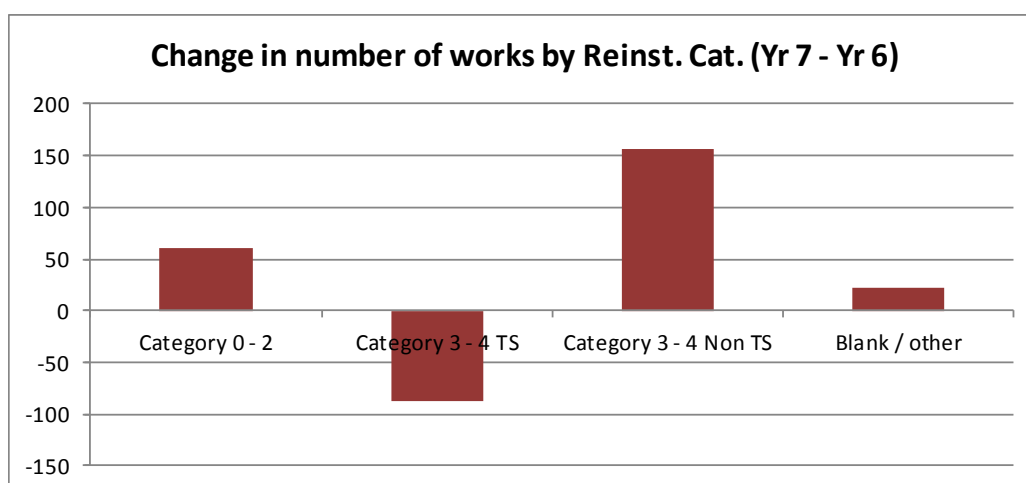


- 2.2.16 There is no significant change in the number of works recorded for each works category. A small reduction in the number of Minor works is offset by an increase in the number of Immediate – Urgent works.
- 2.2.17 The total number of Permit applications by reinstatement category type is shown in Table 5 and the accompanying chart.



Table 5 Number by reinstatement category type

REINSTATEMENT CATEGORY	Year 1 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 6)
Category 0 - 2	3,598	2,971	3,032	61
Category 3 - 4 TS	3,890	2,912	2,824	-88
Category 3 - 4 Non TS	6,755	4,744	4,900	156
Blank / other	88	94	117	23
All works	14,331	10,721	10,873	152



- 2.2.18 Again, the rate of change since year 6 for each reinstatement category grouping is low, with fluctuations of plus or minus 3%.
- 2.2.19 Table 6 shows a comparison of the average works duration for all works.

Table 6 Average works duration

DURATION	Year 1 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 6)
Average duration (days)	2.6	2.7	2.7	
Total number of days worked	37,841	28,743	28,830	87

- 2.2.20 The overall average duration of 2.7 days is only a small increase from year 1 and the same as years 5 and 6. There were 9,011 fewer days worked compared with year 1 - a 24% reduction - and only 87 more days worked compared with year 6, a 0.3% increase.
- 2.2.21 Average duration for highway works has further reduced from 2.3 days in year 1 and 2.1 days in year 6, to 2.0 days in year 7. Reviewing the utility company works durations (Appendix A.3) shows a small increase in duration compared with year 1, from 3.4 to 3.5 days, and no change compared with year 6.
- 2.2.22 Overall, the number of days worked on utilities schemes reduced by 581 compared with year 6. The 3.5% reduction in number of days worked should be considered against the 5.6% reduction in the total number of works undertaken by utility promoters.



2.3 Scheme Benefits

2.3.1 Figure 1 presents the number of works per annum during the first full year of operation of the Permit Scheme and during years 6 and 7.

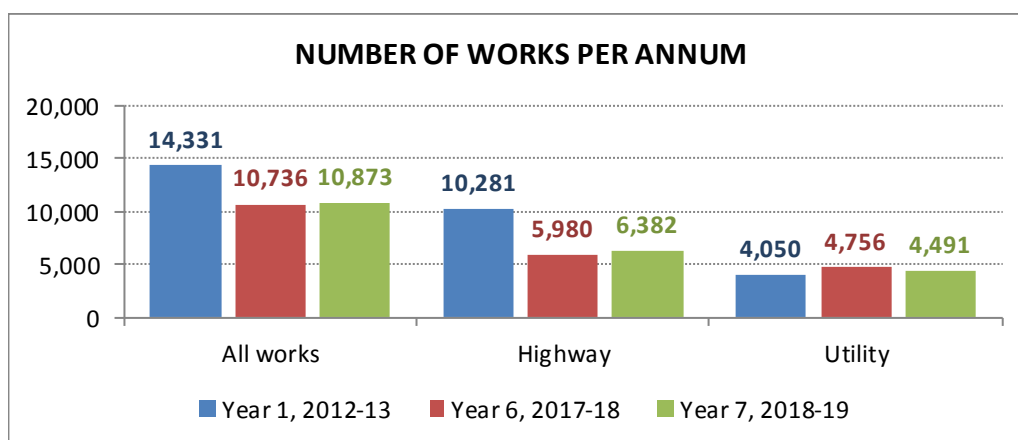


Figure 1 Number of works per annum

2.3.2 The reduction in number of works across the network is significant at 25% compared with year 1.

2.3.3 Utility works have increased steadily year on year since the introduction of the Permit Scheme, increasing by 17% over the first 6 years of the Scheme. This trend is reversed slightly in year 7, with a reduction of 6% compared with previous years.

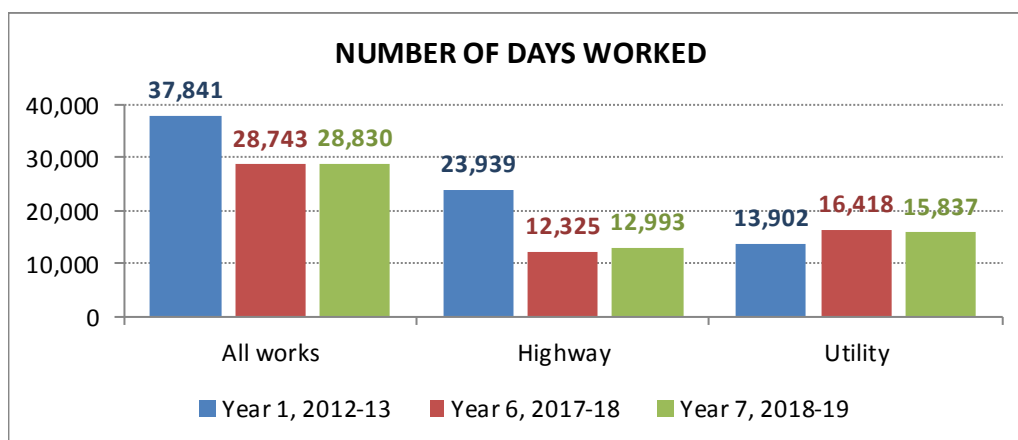


Figure 2 Number of days worked per annum

2.3.4 The total number of days worked has reduced by 24% since year 1. The 1.3% increase in the number of works in year 7 has resulted in a 0.3% increase in the number of days worked.

2.3.5 Highways works show a 5.4% increase in number of days worked and utility works show a 3.5% reduction. Overall, the number of days worked in year 7 has increased by only 87 days compared with year 6.



2.4 Conclusions

- 2.4.1 The biggest change is a 3,900 reduction in highway authority works, compared with year 1. This is a 38% reduction in highway works. The number of highway works completed has increased by 400 compared with year 6, a 7% increase.
- 2.4.2 The number of utility company works is 11% higher than year 1, but 6% lower than the previous year.
- 2.4.3 Average duration for highway works has further reduced from 2.3 days in year 1 and 2.1 days in year 6, to 2.0 days in year 7. Utility company works show a small increase in duration compared with year 1, from 3.4 to 3.5 days, and no change compared with year 6.
- 2.4.4 Overall, the number of days worked on utilities schemes reduced by 581 compared with year 6. The 3.5% reduction in number of days worked should be considered against the 5.6% reduction in the total number of works undertaken by utility promoters.
- 2.4.5 The benefits achieved in year 1 of the Permit Scheme have been maintained through to year 7.



3 KPI MONITORING

3.1 Introduction

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

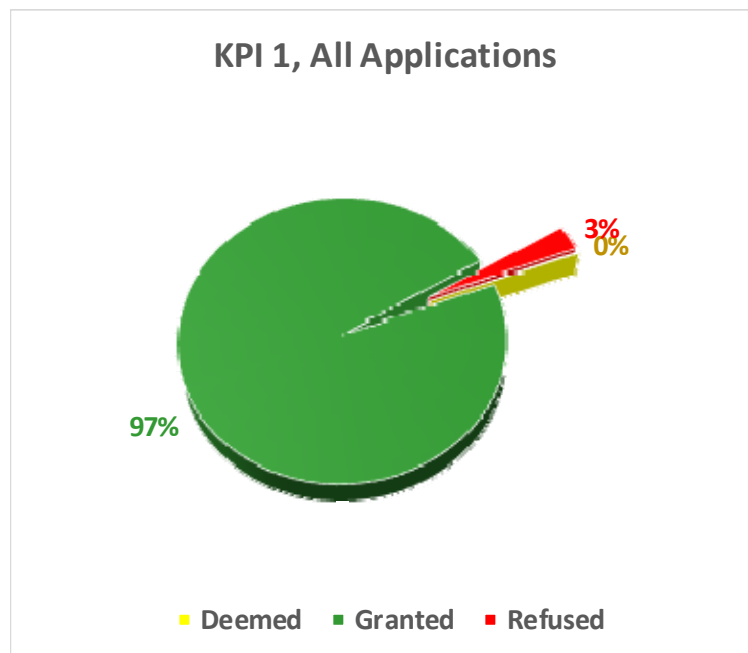
- **KPI 1**, the number of Permit and Permit Variation applications received, and a breakdown of the number granted and refused
- **KPI 2**, the number of conditions applied by condition type
- **KPI 3**, the number of approved Permit variations (extensions)
- **KPI 7**, the number of inspections carried 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 The following figure shows the number and proportion of Permit and Permit Variation applications received and refused (KPI 1).

3.2.2 KPI 1 – The number of all permit and permit variation applications by statutory undertakers refused reduced in year 7 from 9% to 6%. The proportion of all applications refused reduced from 5% to 3%.



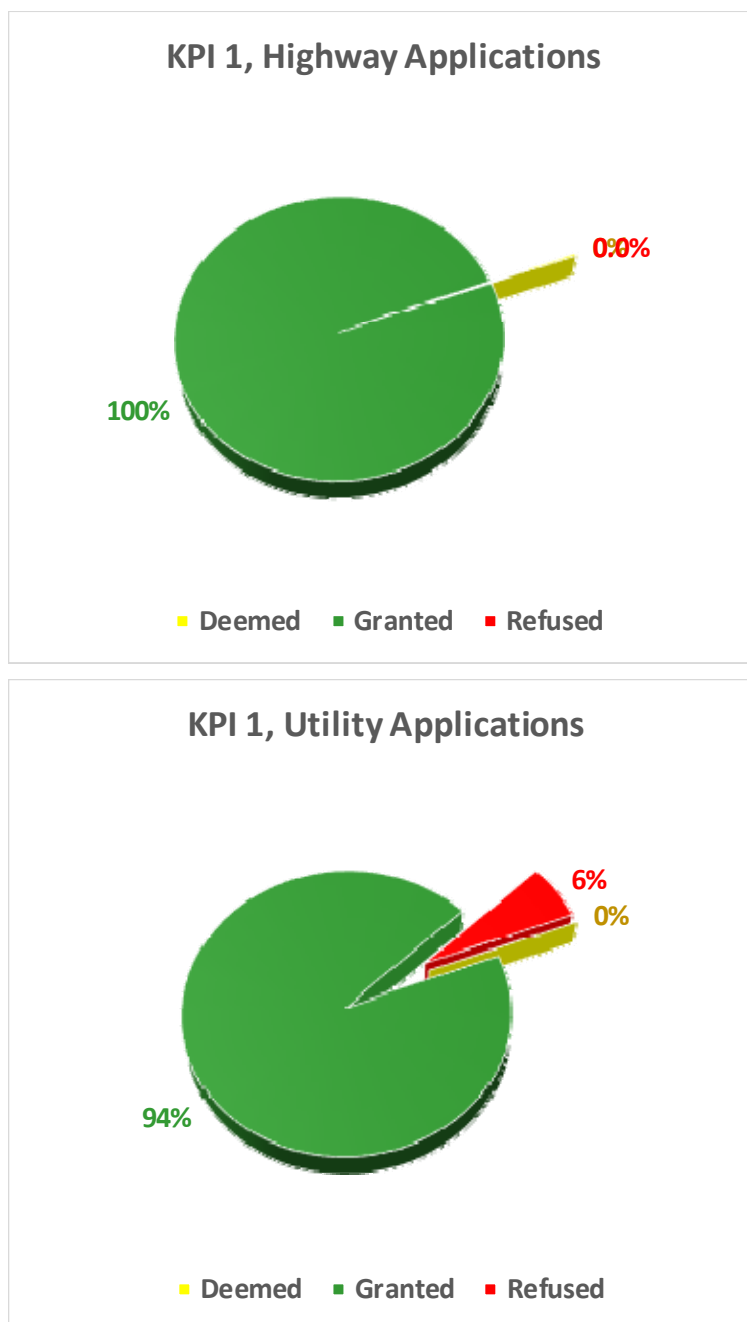


Figure 3: KPI 1, Permit and Variation Applications

- 3.2.3 All of the 320 applications refused were submitted by utility works promoters. This compares with 491 of the 520 refusals in year 6.
- 3.2.4 The refusal rate for highway applications is 0% as the department sits together in the same office, so liaise closely before applications are submitted.
- 3.2.5 Table 7 shows the number of permits granted, deemed and refused for highway authority and public utility works promoters.

**Table 7 KPI 1 Permit and Variation Applications**

Promoter	Granted	Deemed	Refused	% Refused
Highway authority	6,078	16	0	0.0%
Utility	4,738	2	320	6.3%
ALL	10,816	18	320	2.9%

- 3.2.6 With regards to KPI 1, the high amount of granted permits does not reflect the actual amount of work involved by St Helens permit coordinators, as they only refuse permits where the activity promoters fail to update the permit. Permit modification requests are issued in the first instance to avoid permit refusals.
- 3.2.7 If this process was not applied by the permit authority, then there would have been a much higher percentage of refused permits.
- 3.2.8 KPI 2 – number of permit conditions applied by conditions type; Table 8 shows the total number of each standard condition applied to highway authority and public utility works promoters.

Table 8 KPI 2 Number and Type of Conditions Applied

Condition	Condition Description	Utility	Highway	All
NCT02a	Date constraints	2,275	260	2,535
NCT02b	Time constraints	387	1	388
NCT04a	Material & plant removal	113	0	113
NCT04b	Material & plant storage	282	0	282
NCT05a	Road occupation dimensions	103	3	106
NCT06a	Traffic space dimensions	1,457	0	1,457
NCT07a	Road closure	76	56	132
NCT08a	Light signals - tm request	416	29	445
NCT08b	Light signals - manual control	202	21	223
NCT09a	Traffic management changes - notify	255	4	259
NCT09b	Traffic management changes - directed	11	0	11
NCT09c	Traffic management changes - signal removal	234	0	234
NCT10a	Work methodology	586	0	586
NCT11b	Consultation & publicity	182	66	248
NCT12a	Environmental - limit timing of activities	0	0	0
NCT13	Local condition	12	0	12
	TOTAL	6,591	440	7,031

- 3.2.9 94% of all permit conditions are applied by public utility works promoters. This is only slightly higher than the 93% percentage from the previous year.
- 3.2.10 The conditions are evenly spread across most condition types, other than a large number of condition NCT02a date constraints and NCT06a traffic space dimensions being selected.



- 3.2.11 Conditions applied to highway works generally relate to date constraints, road closures, temporary traffic signals and consultation/publicity.
- 3.2.12 The number of conditions applied in year 7 are only 9% lower than those attached in year 6; 7,031 conditions compared with 7,740 in year 6.
- 3.2.13 The number applied by condition type are shown in Figure 4. The blue bars show public utility permits and green show highway authority permits.

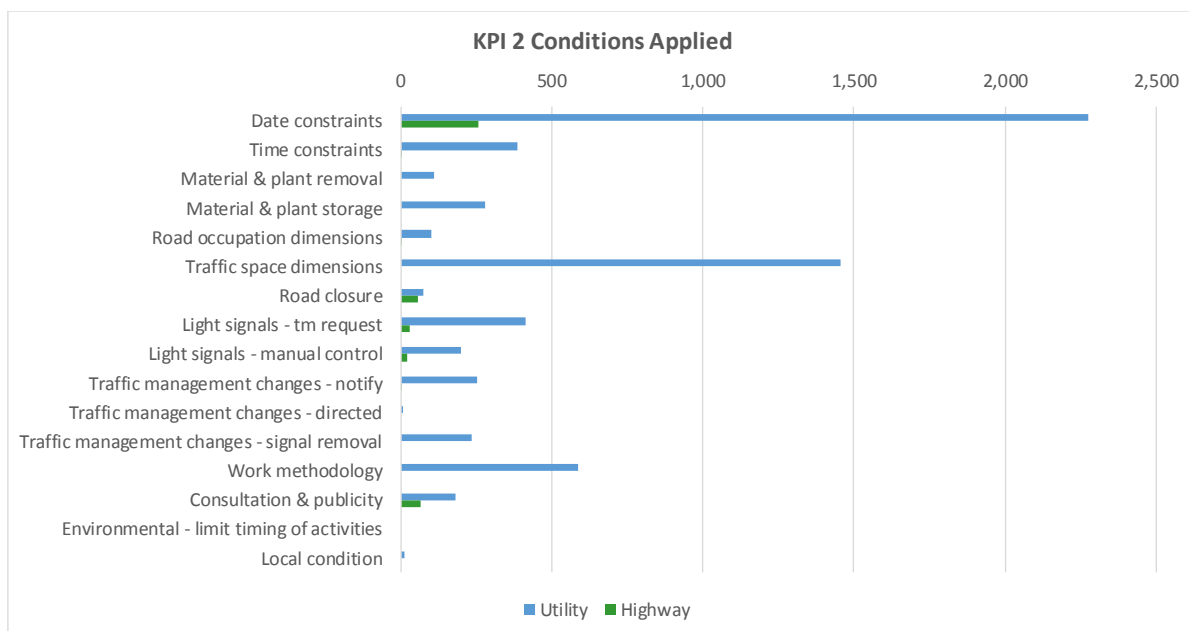


Figure 4: KPI 2, Conditions Applied

- 3.2.14 KPI 3 - The following charts show the number of extensions granted and refused, for all promoters and for statutory undertakers only (KPI 3).
- 3.2.15 Like last year, approximately 75% of permit extensions granted were for statutory undertakers – 261 of the 379 extensions granted compared with 258 of the 351 extensions granted in year 6.
- 3.2.16 In general, permit extension requests are not refused, but are granted and any requests that are not deemed to be acceptable are duration challenged back to the original duration.
- 3.2.17 This year only 7 extension requests were refused (2%) compared with 3 requests (1%) refused last year. All 7 were submitted by statutory undertakers. This increase is not thought to be significant.

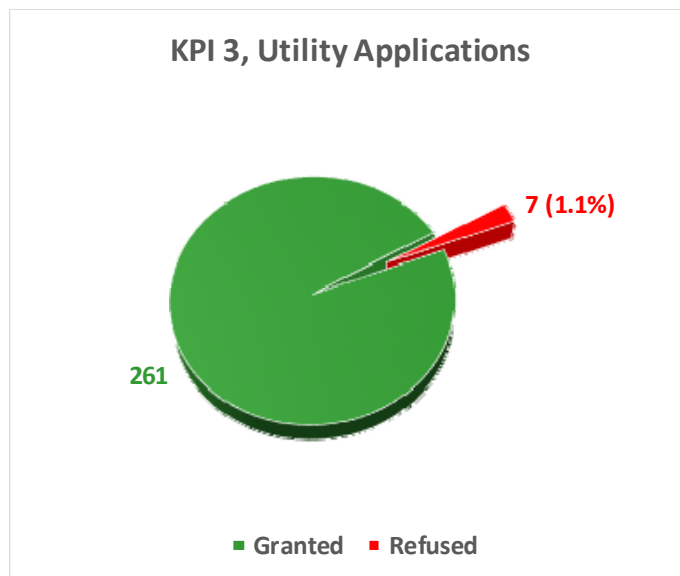
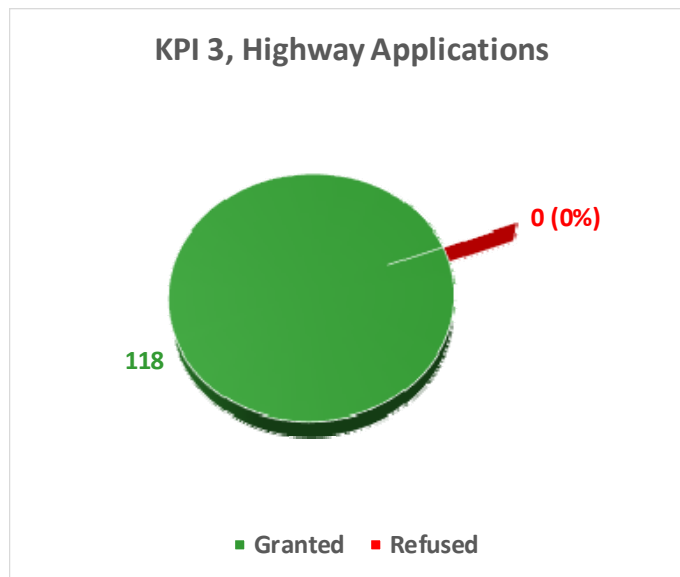
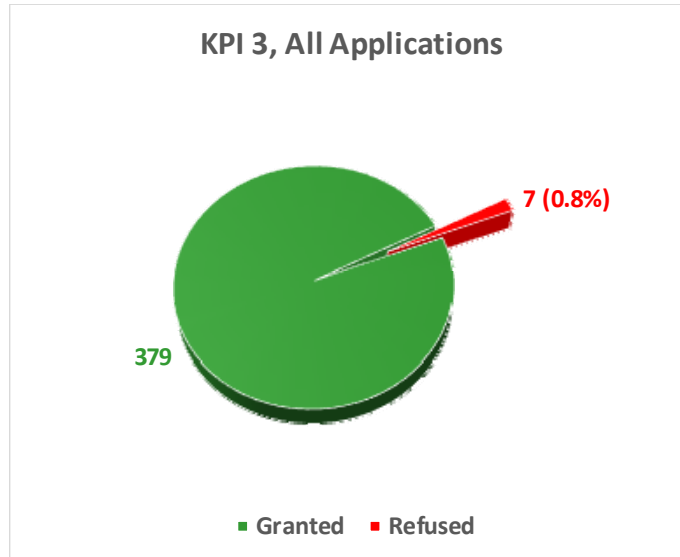


Figure 5: KPI 3, Permit Extensions



3.2.18 KPI 7 - the Number of Inspections carried out to monitor conditions.

3.2.19 Table 9 shows the number of inspections carried out to monitor permit conditions.

Table 9 Permit Inspections

Permit Condition Inspections	Passed	Non-Compliant	Number of Inspections	Fail %
ALL	51	38	81	47%

3.2.20 The number of permit inspections has reduced significantly compared with previous years, from 233 in year 6 to 81 in year 7.

3.2.21 The failure rate has increased, from 39% of 233 permit inspections failed in year 6 to 47% of 81 permit inspections last year.

3.2.22 66 Fixed Penalty Notices for a breach of permit conditions were given during the course of the year; 36 for working without a permit (19(1)) and 30 for a breach of permit conditions (20(1)).

3.2.23 This is only 3 fewer than the previous year, but an increase of 30 for working without a permit and a reduction of 33 for a breach of permit conditions.

3.2.24 The number of fixed penalty notices given by type are shown in Figure 6.

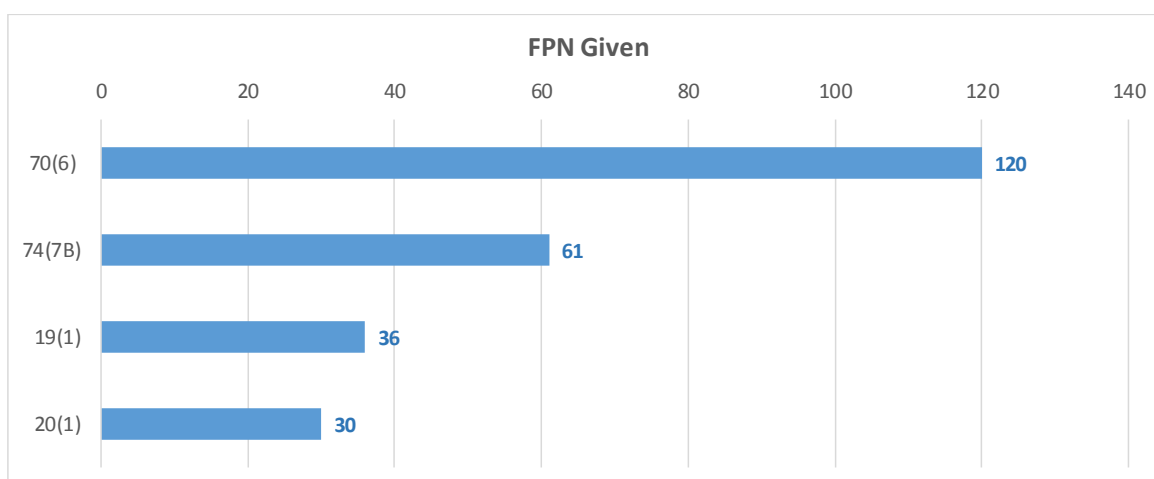


Figure 6: KPI 7, FPN Given

3.2.25 Reasons for failure include:

- Works not taking place following issue of actual start date.
- Permit reference number not displayed.
- Traffic management arrangements.

3.2.26 The number of recorded permit inspections has reduced significantly year on year, from a high of 1,085 in year 2 to 81 in year 7.



3.2.27 Table 10 shows the number of inspections carried out in each year since the introduction of the Permit Scheme in 2012.

Table 10 Permit Inspections – Annual Comparison

Permit Condition Inspections	Passed	Non-Compliant	Abortive	Number of Inspections	Fail %
YEAR 1	838	237	0	1,075	22%
YEAR 2	831	253	1	1,085	23%
YEAR 3	451	144	1	596	24%
YEAR 4	N/A	N/A	N/A	N/A	
YEAR 5	188	139	0	327	43%
YEAR 6	143	90	0	233	39%
YEAR 7	51	38	0	89	43%

3.2.28 The Symology system did not provide a report of permit inspections for year 4.

3.2.29 The data shows a large year on year reduction in the number of permit inspections carried out. The failure rate has increased during the last 3 years, suggesting that perhaps not all passed inspections are being recorded in the system.

3.2.30 This assertion is supported by the number of FPN given for working with no permit or a breach of permit conditions not reducing significantly since year 4.

Recommendation Yr 8 - 01: Monitor the number of permit inspections carried out annually, with a view to ensuring all inspections are accurately recorded.

3.3 Conclusions

3.3.1 The analysis demonstrates that only a small proportion of permit and permit variation applications are refused. The number of all permit and permit variation applications by statutory undertakers refused reduced in year 7 from 9% to 6%. The proportion of all applications refused reduced from 5% to 3%.

3.3.2 Like last year, approximately 75% of permit extensions granted were for statutory undertakers. This year only 7 extension requests were refused (2%) compared with 3 requests (1%) refused last year. All 7 were submitted by statutory undertakers.

3.3.3 66 Fixed Penalty Notices for a breach of permit conditions were given during the course of the year; 36 for working without a permit (19(1)) and 30 for a breach of permit conditions (20(1)). This is only 3 fewer than the previous year, but an increase of 30 for working without a permit and a reduction of 33 for a breach of permit conditions.

3.3.4 A high proportion of these failures are related to works not taking place following the issue of an actual start date or failing to display a valid permit number.



4 CONCLUSIONS

4.1 Summary

- 4.1.1 St Helens Council (SHC) has been operating a Street Works Permit Scheme since April 2012. The Scheme operates as the St Helens (October 2015) Permit Scheme (MAPS). An approved Common Scheme currently operated by SHC only.
- 4.1.2 The statutory 12-month Annual Review and report to DfT was completed in 2013 following the first full 12 months of operating the Permit Scheme, '*St Helens Council Annual Report 01, 2012-13*'.
- 4.1.3 The purpose of the 12-month Annual 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.
- 4.1.4 The introduction of the Permit Scheme reduced the average duration of works by 20% and reduced the calculated cost of delays encountered at traffic management by 33%. The calculated Scheme benefit was 4 times greater than value for money threshold required by the Department for Transport (DfT).
- 4.1.5 At the end of each subsequent year, further reviews have been carried out and reported. This is a lower level review to monitor key performance indicators and identify and report any significant changes year on year.
- 4.1.6 The performance of the Scheme in subsequent years shows slight variation in the average duration, but generally shows the benefits to be maintained around the level achieved in year 1.
- 4.1.7 The biggest change is a 3,900 reduction in highway authority works, compared with year 1. This is a 38% reduction in highway works. The number of highway works completed has increased by 400 compared with year 6, a 7% increase.
- 4.1.8 The number of utility company works is 11% higher than year 1, but 6% lower than the previous year.

4.2 Scheme benefits

- 4.2.1 Average duration for highway works has further reduced from 2.3 days in year 1 and 2.1 days in year 6, to 2.0 days in year 7. Utility company works show a small increase in duration compared with year 1, from 3.4 to 3.5 days, and no change compared with year 6.
- 4.2.2 Overall, the number of days worked on utilities schemes reduced by 581 compared with year 6. The 3.5% reduction in number of days worked should be considered against the 5.6% reduction in the total number of works undertaken by utility promoters.



4.2.3 The benefits achieved in year 1 of the Permit Scheme have been maintained through to year 7.

4.3 Recommendations

4.3.1 Whilst none of the issues identified during the review are thought to be significant in terms of the calculated Scheme benefits, one recommendation has been made to monitor permit inspections during year 8;

Recommendation Yr 8 - 01: Monitor the number of permit inspections carried out annually, with a view to ensuring all inspections are accurately recorded.

4.4 Conclusions

4.4.1 Monitoring the key performance indicators and evidence gained from the second year of operation demonstrates that the Permit Scheme continues to;

- improve coordination of activities
- improve safety at road and street works
- improve communication between authority and utility companies
- reduce occupancy of the highway
- improve accuracy of works records recorded in the Register
- reduce customer complaints

4.4.2 This review has demonstrated that Scheme continues to meet its objectives, as defined in the Scheme document.

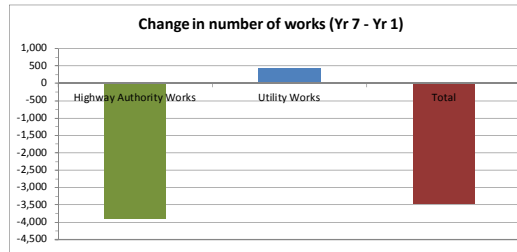
A. PERMIT APPLICATIONS 2018-19

A.1 All works

Appendix A.1 All Works

Table A.1: Number of works p.a., year on year comparison

PROMOTER TYPE	Year 1 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 1)	
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Total	14,331	10,736	10,873	-3,458	-24.1%



Change (Yr 7 - Yr 6)	
402	6.7%
-265	-5.6%
137	1.3%

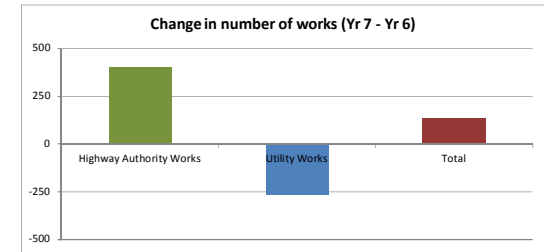
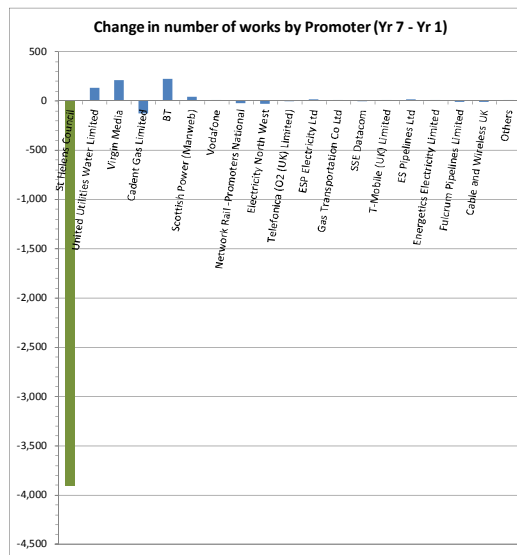
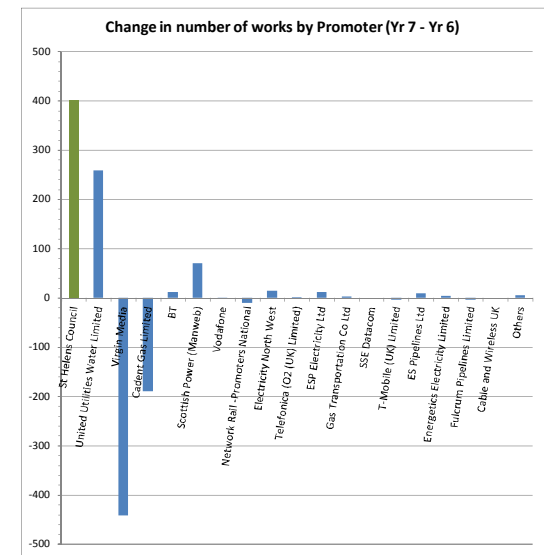


Table A.2: Number of works by Promoter, year on year comparison

PROMOTER	Year 1 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 1)	
St Helens Council	10,281	5,980	6,382	-3,899	-37.9%
United Utilities Water Limited	1,622	1,494	1,752	130	8.0%
Virgin Media	652	1,304	862	210	32.2%
Cadent Gas Limited	640	702	512	-128	-20.0%
BT	367	576	588	221	60.2%
Scottish Power (Manweb)	474	447	517	43	9.1%
Vodafone	3	9	7	4	133.3%
Network Rail - Promoters National	39	27	16	-23	-59.0%
Electricity North West	208	164	178	-30	-14.4%
Telefonica (O2 (UK) Limited)	5	3	4	-1	-20.0%
ESP Electricity Ltd			12	12	
Gas Transportation Co Ltd	2	5	8	6	300.0%
SSE Datacom	6		-6	-6	-100.0%
T-Mobile (UK) Limited		8	4	4	
ES Pipelines Ltd	2	8	17	15	750.0%
Energetics Electricity Limited	2		4	2	100.0%
Fulcrum Pipelines Limited	19	9	5	-14	-73.7%
Cable and Wireless UK	9		-9	-9	-100.0%
Others			5	5	
Total	14,331	10,736	10,873	-3,458	-24.1%



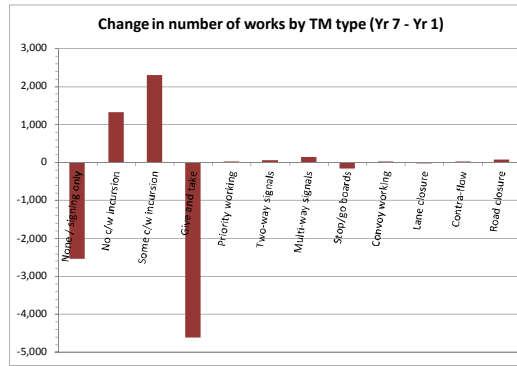
Change (Yr 7 - Yr 6)	
402	6.7%
258	17.3%
-442	-33.9%
-190	-27.1%
12	2.1%
70	15.7%
-2	-22.2%
-11	-40.7%
14	8.5%
1	33.3%
12	60.0%
3	
-4	-50.0%
9	112.5%
4	
-4	-44.4%
5	
137	1.3%



Appendix A.1 All Works

Table A.3: Number of works by traffic management type, year on year comparison

TRAFFIC MANAGEMENT TYPE	Year 1 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 1)	
None / signing only	2,535			-2,535	-100.0%
No c/w incursion		1,828	1,325	1,325	
Some c/w incursion		2,026	2,297	2,297	
Give and take	10,855	5,871	6,241	-4,614	-42.5%
Priority working	4	20	8	4	100.0%
Two-way signals	320	358	368	48	15.0%
Multi-way signals	148	247	284	136	91.9%
Stop/go boards	230	74	61	-169	-73.5%
Convoy working	2	7	5	5	250.0%
Lane closure	143	152	108	-35	-24.5%
Contra-flow	2	5	8	6	300.0%
Road closure	92	155	166	74	80.4%
Blank					
Total	14,331	10,736	10,873	-3,458	-24.1%



Change (Yr 7 - Yr 6)	
-503	-27.5%
271	13.4%
370	6.3%
-12	-60.0%
10	2.8%
37	15.0%
-13	-17.6%
7	7.1%
-44	-28.9%
3	60.0%
11	7.1%
137	1.3%

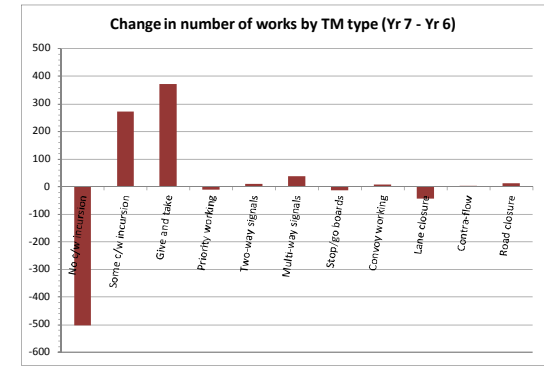
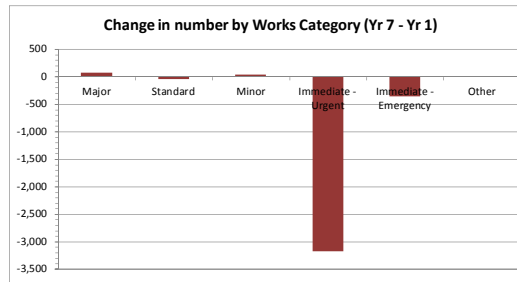


Table A.4: Number of works by works category, year on year comparison

WORKS STOPPED	Year 1 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 1)	
Major	254	347	329	75	29.5%
Standard	616	558	577	-39	-6.3%
Minor	2,801	3,288	2,839	38	1.4%
Immediate - Urgent	10,045	6,279	6,870	-3,175	-31.6%
Immediate - Emergency	615	264	258	-357	-58.0%
Other					
Total	14,331	10,736	10,873	-3,458	-24.1%



Change (Yr 7 - Yr 6)	
-18	-5.2%
19	3.4%
-449	-13.7%
591	9.4%
-6	-2.3%
137	1.3%

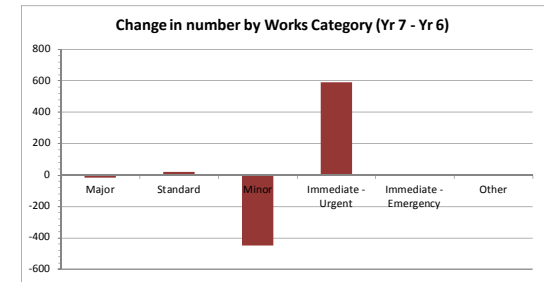
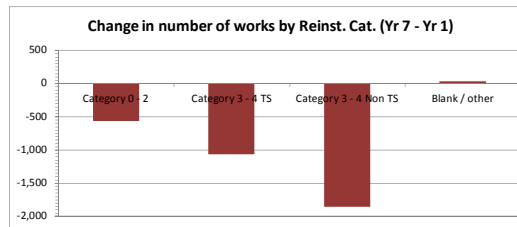


Table A.5: Traffic sensitivity, year on year comparison

REINSTATEMENT CATEGORY	Year 1 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 1)	
Category 0 - 2	3,598	2,971	3,032	-566	-15.7%
Category 3 - 4 TS	3,890	2,912	2,824	-1,066	-27.4%
Category 3 - 4 Non TS	6,755	4,744	4,900	-1,855	-27.5%
Blank / other	88	94	117	29	33.0%
All works	14,331	10,721	10,873	-3,458	-24.1%



Change (Yr 7 - Yr 6)	
61	2.1%
-88	-3.0%
156	3.3%
23	24.5%
152	1.4%

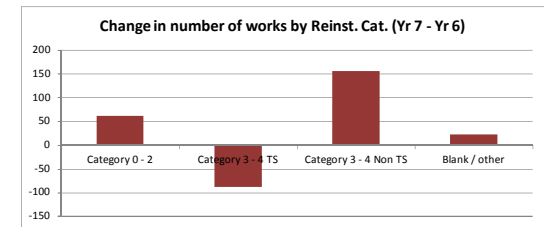


Table A.6: Average works duration, year on year comparison

DURATION	Year 1 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 1)	
Average duration (days)	2.6	2.7	2.7	0.1	2.3%
Total number of days worked	37,841	28,743	28,830	-9,011	-23.8%

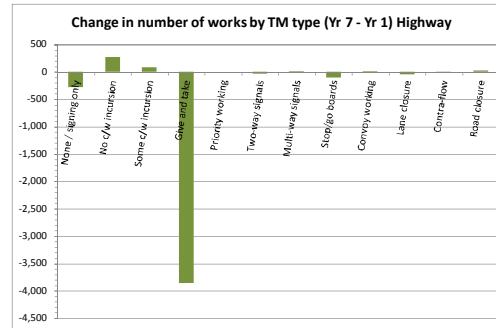
Change (Yr 7 - Yr 6)	
87	0.3%

A.2 Highway authority works

Appendix A.2 Highway authority works

Table A.7: Number of works by traffic management type, year on year comparison

TRAFFIC MANAGEMENT TYPE	Year 1 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 1)	
None / signing only	278			-278	-100.0%
No c/w incursion		287	277	277	
Some c/w incursion		113	86	86	
Give and take	9,537	5,201	5,680	-3,857	-40.4%
Priority working		1			
Two-way signals	135	92	101	-34	-25.2%
Multi-way signals	25	59	41	16	64.0%
Stop/go boards	132	48	33	-99	-75.0%
Convoy working	2		7	5	250.0%
Lane closure	111	108	70	-41	-36.9%
Contra-flow	1	1		-1	-100.0%
Road closure	60	70	87	27	45.0%
Blank					
Total	10,281	5,980	6,382	-3,899	-37.9%



Change (Yr 7 - Yr 6)	
-10	-3.5%
-27	-23.9%
479	9.2%
-1	-100.0%
9	9.8%
-18	-30.5%
-15	-31.3%
7	
-38	-35.2%
-1	-100.0%
17	24.3%
402	6.7%

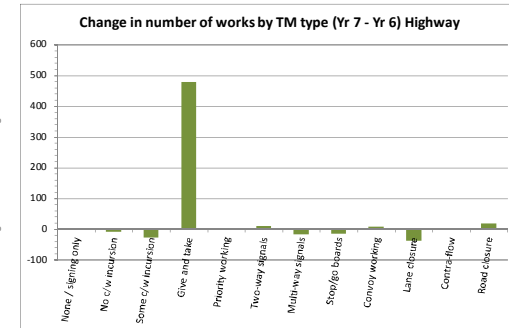
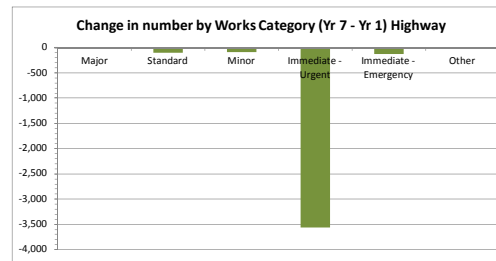


Table A.8: Number of works by works category, year on year comparison

WORKS STOPPED	Year 1 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 1)	
Major	161	113	158	-3	-1.9%
Standard	279	177	178	-101	-36.2%
Minor	542	484	442	-100	-18.5%
Immediate - Urgent	9,168	5,200	5,601	-3,567	-38.9%
Immediate - Emergency	131	6	3	-128	-97.7%
Other					
Total	10,281	5,980	6,382	-3,899	-37.9%



Change (Yr 7 - Yr 6)	
45	39.8%
1	0.6%
-42	-8.7%
401	7.7%
-3	-50.0%
402	6.7%

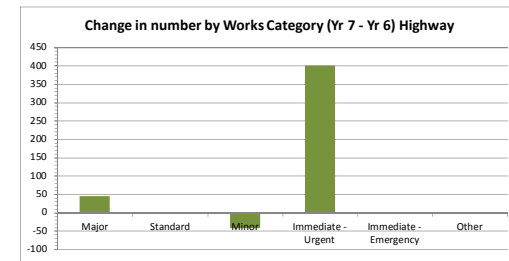


Table A.9: Average works duration, year on year comparison

DURATION	Year 1 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 1)	
Average duration (days)	2.3	2.1	2.0	-0.3	-14.1%
Total number of days worked	23,939	12,325	12,993	-10,946	-45.7%

Year 7, 2018-19, Duration by works category

MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
11.9	9.7	2.1	1.5	5.7
1,877	1,719	910	8,470	17

Change (Yr 7 - Yr 6)	
-0.1	-4.8%
668	5.4%

Year 7, 2018-19, Duration by works category

MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
11.9	9.7	2.1	1.5	5.7
1,877	1,719	910	8,470	17

Year 1, 2012-13, Duration by works category

MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
13.8	5.5	2.4	2.0	4.8
2,214	1,541	1,325	18,225	634

Year 6, 2017-18, Duration by works category

MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
21.0	5.8	1.8	1.5	3.8
2,376	1,027	885	8,014	23

Difference, Year 7 - Year 1

MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
-1.9	4.1	-0.4	-0.5	0.8
-337	178	-415	-9,755	-617

Difference, Year 7 - Year 6

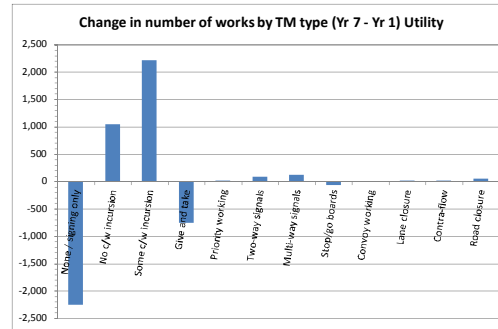
MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
-9.1	3.9	0.2	0.0	1.8
-499	692	25	456	-6

A.3 Utility works

Appendix A.3 Utility works

Table A.10: Number of works by traffic management type, year on year comparison

TRAFFIC MANAGEMENT TYPE	Year 1 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 1)	
None / signing only	2,257			-2,257	-100.0%
No c/w incursion		1,541	1,048	1,048	
Some c/w incursion		1,913	2,211	2,211	
Give and take	1,318	670	561	-757	-57.4%
Priority working	4	19	8	4	100.0%
Two-way signals	185	266	267	82	44.3%
Multi-way signals	123	188	243	120	97.6%
Stop/go boards	98	26	28	-70	-71.4%
Convoy working					
Lane closure	32	44	38	6	18.8%
Contra-flow	1	4	8	7	700.0%
Road closure	32	85	79	47	146.9%
Blank					
Total	4,050	4,756	4,491	441	10.9%



Change (Yr 7 - Yr 6)	
-493	15.6%
298	-16.3%
-109	-57.9%
-11	0.4%
55	29.3%
2	7.7%
-6	-13.6%
4	100.0%
-6	-7.1%
-265	-5.6%

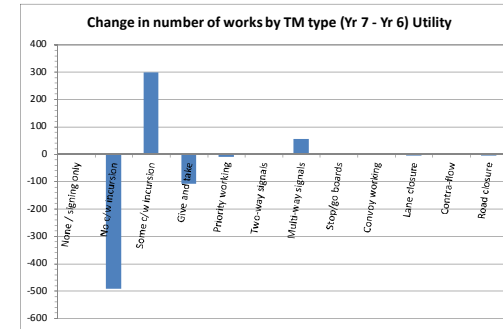
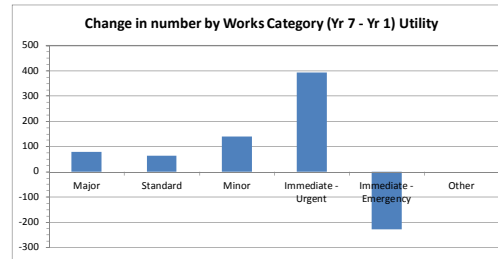


Table A.11: Number of works by works category, year on year comparison

WORKS STOPPED	Year 1 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 1)	
Major	93	234	171	78	83.9%
Standard	337	381	399	62	18.4%
Minor	2,259	2,804	2,397	138	6.1%
Immediate - Urgent	877	1,079	1,269	392	44.7%
Immediate - Emergency	484	258	255	-229	-47.3%
Other					
Total	4,050	4,756	4,491	441	10.9%



Change (Yr 7 - Yr 6)	
-63	-26.9%
18	4.7%
-407	-14.5%
190	17.6%
-3	-1.2%
-265	-5.6%

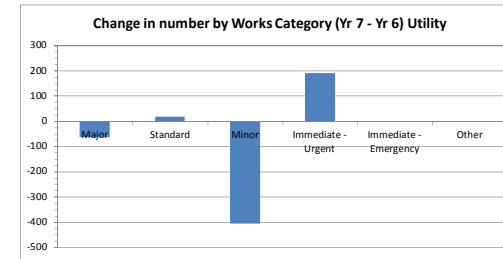


Table A.12: Average works duration, year on year comparison

DURATION	Year 1 2012-13	Year 6 2017-18	Year 7 2018-19	Change (Yr 7 - Yr 1)	
Average duration (days)	3.4	3.5	3.5	0.1	2.0%
Total number of days worked	13,902	16,418	15,837	1,935	13.9%

Year 7, 2018-19, Duration by works category

MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
12.3	6.4	2.3	3.3	5.4
2,105	2,560	5,553	4,239	1,380

Change (Yr 7 - Yr 6)	
-581	-3.5%

Year 7, 2018-19, Duration by works category

MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
12.3	6.4	2.3	3.3	5.4
2,105	2,560	5,553	4,239	1,380

Year 1, 2012-13, Duration by works category

MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
19.6	5.9	1.7	4.6	4.6
1,822	1,978	3,851	4,018	2,233

Year 6, 2017-18, Duration by works category

MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
14.3	6.5	1.9	3.4	5.9
3,351	2,468	5,352	3,717	1,530

Difference, Year 7 - Year 1

MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
-7.3	0.5	0.6	-1.2	0.8
283	582	1,702	221	-853

Difference, Year 7 - Year 6

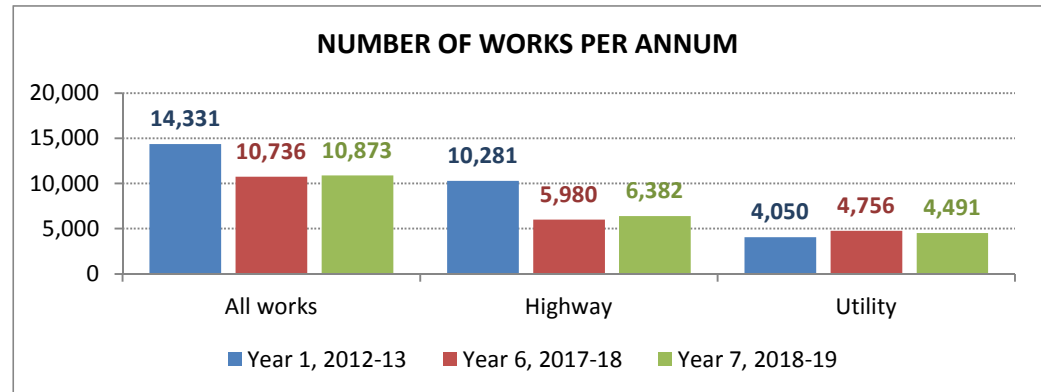
MAJOR	STANDARD	MINOR	IMMED. (URGENT)	IMMED. (EMERG.)
-2.0	-0.1	0.4	-0.1	-0.5
-1,246	92	201	522	-150

B. SCHEME BENEFITS

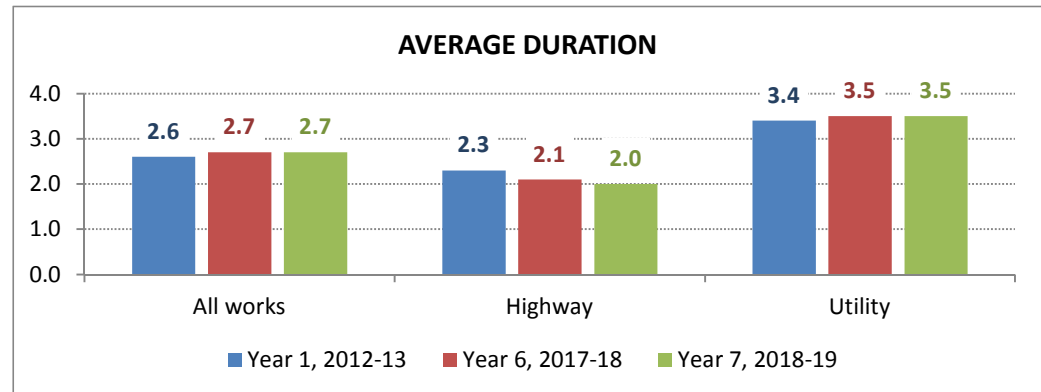
B.1 Summary

SCHEME BENEFITS

NUMBER OF WORKS (number)			
	All works	Highway	Utility
Year 1, 2012-13	14,331	10,281	4,050
Year 6, 2017-18	10,736	5,980	4,756
Year 7, 2018-19	10,873	6,382	4,491
Change, Year 7 - Year 6	137	402	-265
Change (%)	1.3%	6.7%	-5.6%



AVERAGE DURATION (days)			
	All works	Highway	Utility
Year 1, 2012-13	2.6	2.3	3.4
Year 6, 2017-18	2.7	2.1	3.5
Year 7, 2018-19	2.7	2.0	3.5
Change (days)	0.0	-0.1	0.0



DAYS WORKED (days)			
	All works	Highway	Utility
Year 1, 2012-13	37,841	23,939	13,902
Year 6, 2017-18	28,743	12,325	16,418
Year 7, 2018-19	28,830	12,993	15,837
Change, Year 7 - Year 6	87	668	-581
Change (%)	0.3%	5.4%	-3.5%

