

# The Knowsley Permit Scheme for Road & Street Activities

**Annual Review 2015-16** 







## Knowsley Council Permit Scheme, 12 Month Review, 2015-16

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#### 1 INTRODUCTION

### 1.1 Background

- 1.1.1 The Knowsley Council (KMBC) Permit Scheme went live on 1<sup>st</sup> March 2015, with the first month operating as a trial with no charges applied. Permit charges were applied from 1<sup>st</sup> April 2015.
- 1.1.2 This report forms the statutory 12 month review and report to DfT, following the first full 12 months of operating the Permit Scheme, 'Knowsley Council 12 Month review, 2015-16'.
- 1.1.3 The purpose of the 12 month review is;
  - 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.

#### 1.2 Report Structure

- 1.2.1 Chapter 2 presents the analysis of the permit applications and actual durations. The review of the key performance indicators is reported in Chapter 3.
- 1.2.2 Chapter 4 presents the report summary, conclusions and recommendations.

#### 2 PERMIT APPLICATIONS

## 2.1 Methodology

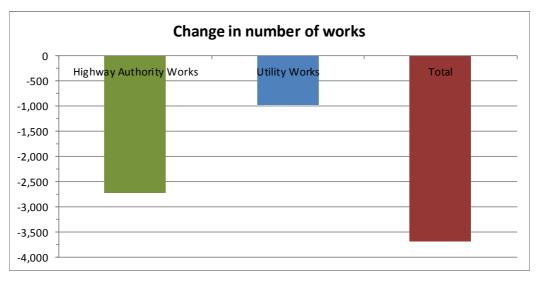
- 2.1.1 Data sources available for this review are:
  - Noticing work stops notices, 2013 (Confirm database)
  - Permit Scheme work stops notices, April 2015 March 2016 (Symology database)
- 2.1.2 This review will assess the year on year change in the number of Permit applications and to review the breakdown 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 year under the Permit Scheme and the average year selected under Noticing for the CBA business case assessment.
- 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.

Noticing Permitting PROMOTER TYPE Change 2013 2015-16 4,847 Highway Authority Works 2,136 -2,711 Utility Works 3,732 2,765 -967 4,901 Total 8,579 -3,678

Table 1 Number of Permit applications



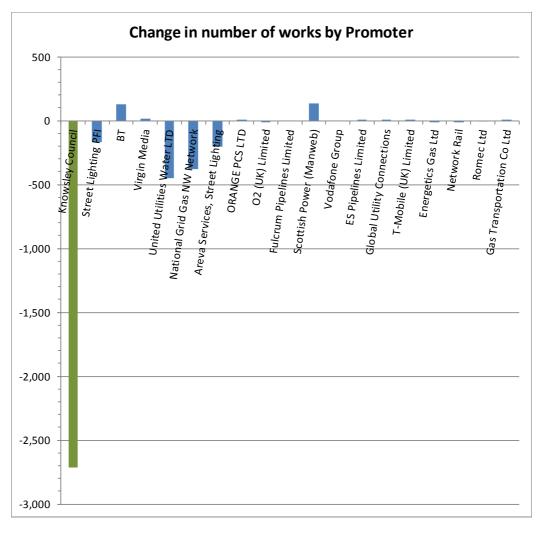
2.2.3 The biggest change is a near 2,700 reduction in highway authority works, compared with the noticing records. This is a 56% reduction in highway works.



- 2.2.4 Not all of this reduction can be attributed to the Permit Scheme. The number of highway authority promoted works has been steadily falling since 2013 from a peak of 4,700 works per annum to 2,100 in 2015-16.
- 2.2.5 This reduction is a result of lower budget available to undertake planned and highway improvement works.
- 2.2.6 200 notices in 2013 were promoted for the street lighting PFI contract. The completion of this contract will account for some of the reduction in Council promoted works.
- 2.2.7 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

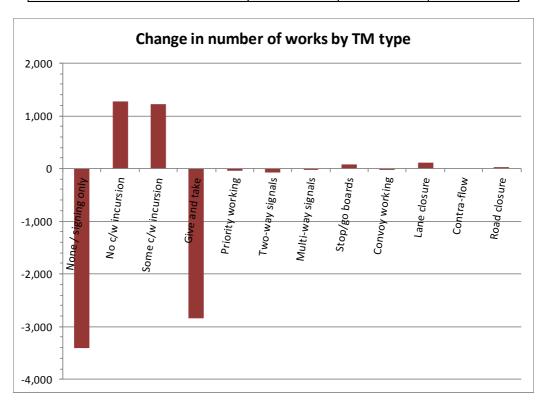
| PROMOTER                        | Noticing<br>2013 | Permitting<br>2015-16 | Change |
|---------------------------------|------------------|-----------------------|--------|
| Knowsley Council                | 4,847            | 2,136                 | -2,711 |
| Street Lighting PFI             | 167              |                       | -167   |
| вт                              | 317              | 447                   | 130    |
| Virgin Media                    | 514              | 531                   | 17     |
| United Utilities Water LTD      | 1,364            | 912                   | -452   |
| National Grid Gas NW Network    | 710              | 331                   | -379   |
| Areva Services, Street Lighting | 201              |                       | -201   |
| ORANGE PCS LTD                  |                  | 2                     | 2      |
| O2 (UK) Limited                 | 18               | 4                     | -14    |
| Fulcrum Pipelines Limited       | 8                | 8                     |        |
| Scottish Power (Manweb)         | 351              | 486                   | 135    |
| Vodafone Group                  | 27               | 27                    |        |
| ES Pipelines Limited            |                  | 5                     | 5      |
| Global Utility Connections      |                  | 1                     | 1      |
| T-Mobile (UK) Limited           |                  | 5                     | 5      |
| Energetics Gas Ltd              | 13               | 1                     | -12    |
| Network Rail                    | 15               | 3                     | -12    |
| Romec Ltd                       | 2                |                       | -2     |
| Gas Transportation Co Ltd       |                  | 2                     | 2      |
| Other                           | 25               |                       | -25    |
| Total                           | 8,579            | 4,901                 | -3,678 |



- 2.2.8 Other than the reduction in council works, the biggest change is an approximate 400 reduction in the number of works promoted by United Utilities Water and National Grid Gas. There are smaller increases in BT and Scottish Power Manweb works to offset some of this change.
- 2.2.9 The other utilities show a small change (+ or -) in permit applications compared with the noticing benchmark statistics.
- 2.2.10 Other than the reduction in works by United Utilities Water and National Grid Gas, 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.
- 2.2.11 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.
- 2.2.12 Table 3 and the accompanying chart presents a comparison of the change in number of all works applications by traffic management type.



| TRAFFIC MANAGEMENT TYPE | Noticing<br>2013 | Permitting<br>2015-16 | Change |
|-------------------------|------------------|-----------------------|--------|
| None / signing only     | 3,400            |                       | -3,400 |
| No c/w incursion        |                  | 1,276                 | 1,276  |
| Some c/w incursion      |                  | 1,221                 | 1,221  |
| Give and take           | 4,188            | 1,337                 | -2,851 |
| Priority working        | 64               | 27                    | -37    |
| Two-way signals         | 294              | 219                   | - 75   |
| Multi-way signals       | 154              | 138                   | -16    |
| Stop/go boards          | 59               | 130                   | 71     |
| Convoy working          | 2                | 1                     | -1     |
| Lane closure            | 334              | 442                   | 108    |
| Contra-flow             |                  |                       |        |
| Road closure            | 84               | 110                   | 26     |
| Blank                   |                  |                       |        |
| Total                   | 8,579            | 4,901                 | -3,678 |



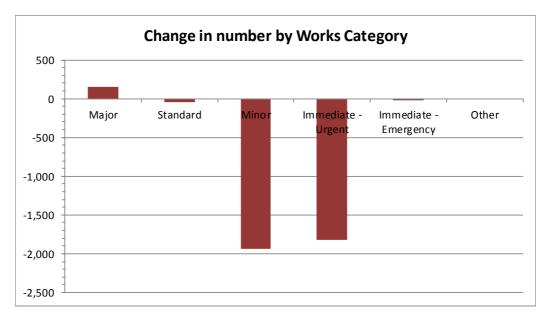
- 2.2.13 The biggest change is the transition from EToN5 to EToN6 traffic management types, and a move from None/signing only to no carriageway incursion and some carriageway incursion.
- 2.2.14 There is a 2,800 reduction in 'give and take' traffic management work. All but 46 of this reduction is accounted for by the drop in highway authority woks.
- 2.2.15 The rest of the traffic management types show small changes in the annual numbers, but within the year on year variation expected.



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         | Noticing<br>2013 | Permitting<br>2015-16 | Change |
|-----------------------|------------------|-----------------------|--------|
| Major                 | 254              | 401                   | 147    |
| Standard              | 404              | 361                   | -43    |
| Minor                 | 5,124            | 3,184                 | -1,940 |
| Immediate - Urgent    | 2,576            | 753                   | -1,823 |
| Immediate - Emergency | 221              | 202                   | -19    |
| Other                 |                  |                       |        |
| Total                 | 8,579            | 4,901                 | -3,678 |

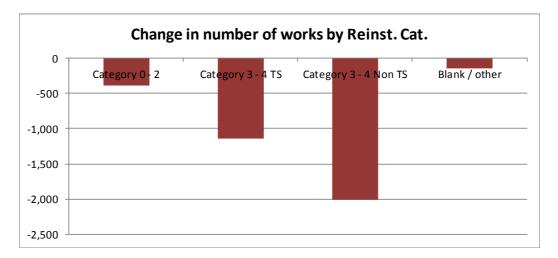


- 2.2.17 The most significant changes are a near 2,000 reduction in Minor and Immediate Urgent works.
- 2.2.18 The data analysis presented in Appendix A shows that the reduction in Minor works is spread between highway authority and utility works (-1,400 highway & -530 utility).
- 2.2.19 The reduction in Immediate Urgent works is almost entirely due to the reduction in highway authority works.
- 2.2.20 Highway authority Permits show a large increase in the number of Major works recorded (from 99 to 333). This increase is slightly offset by a 87 reduction in the number of Major utility projects (down from 155 to 68).
- 2.2.21 The total number of utility permit applications in the year is around 22% lower than operating under noticing records.
- 2.2.22 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 | Noticing<br>2013 | Permitting<br>2015-16 | Change |
|------------------------|------------------|-----------------------|--------|
| Category 0 - 2         | 1,510            | 1,126                 | -384   |
| Category 3 - 4 TS      | 2,460            | 1,320                 | -1,140 |
| Category 3 - 4 Non TS  | 4,439            | 2,429                 | -2,010 |
| Blank / other          | 170              | 26                    | -144   |
| All works              | 8,579            | 4,901                 | -3,678 |



- 2.2.23 Although all categories show a large reduction, the proportion of permits on each road type is broadly representative of the benchmark noticing data and not thought to be significant.
- 2.2.24 Table 6 shows a comparison of the average works duration for all works.

Table 6 Average works duration

| DURATION                    | Noticing<br>2013 | Permitting<br>2015-16 | Change  |
|-----------------------------|------------------|-----------------------|---------|
| Average duration (days)     | 5.1              | 4.7                   | -0.4    |
| Total number of days worked | 43,964           | 22,906                | -21,058 |

- 2.2.25 The overall reduction in average duration is significant; reducing from 5.1 days to 4.7 days. This is an 8% reduction in average works duration.
- 2.2.26 The reduction constitutes 21,000 fewer days worked compared with the situation under Noticing, an overall 48% reduction in working days. However, a significant proportion of this change is due to the reduction in highway authority works undertaken.
- 2.2.27 Reviewing the highway authority works durations (Appendix A.1) shows an increase in average duration (from 3.6 to 5.9 days). This is consistent with the increase in Major works and the large reduction in Minor and Immediate Urgent works.



- 2.2.28 Highway authority average durations are within the range expected for each works category.
- 2.2.29 Reviewing the utility company works durations (Appendix A.2) shows a near 50% reduction in average works duration (from 7.3 days to 3.8 days) and over 15,500 fewer days worked (a 60% reduction overall). This reduction in days worked is significant as the corresponding reduction in works numbers is 22%.
- 2.2.30 The data in Appendix A.2 shows that average durations for Immediate Urgent and Immediate Emergency works are higher than the corresponding durations for highway authority works (4.2 and 6.1 days compared with 1.2 and 1.7 days).

Recommendation 01: Monitor duration of utility company Immediate works to identify if further reductions in works duration can be achieved in year 2.

#### 2.3 Scheme Benefit

2.3.1 Figure 1 presents the number of works per annum under Noticing and during the first full year of operation following the introduction of the Permit Scheme.

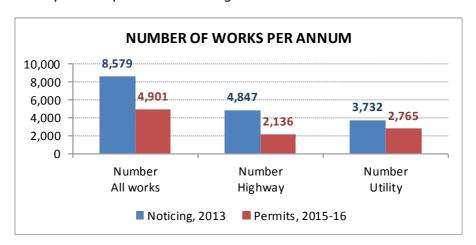


Figure 1 Number of works per annum

- 2.3.2 The reduction in number of works across the network is significant at 43% overall. There is a 55% reduction in the number of highway works and a 26% reduction in the number of utility works.
- 2.3.3 The significant reduction in average duration for utility works (48% reduction) more than cancels out the effect of an increase in highway authority works duration (a result of fewer Minor and Immediate works being undertaken).
- 2.3.4 This equates to over 21,000 fewer days worked on the network in the last year (48% reduction overall). Not all of this reduction can be attributed to the Permit Scheme. The number of highway authority promoted works has been steadily falling since 2013 from a peak of 4,700 works per annum to 2,100 in 2015-16.

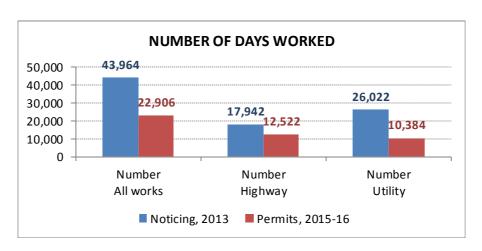


Figure 2 Number of days worked per annum

- 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 on non-traffic sensitive streets and for short duration Minor and Immediate works, the monetary value of the benefit to road users of the Permit Scheme in year 1 is calculated as:
  - Average monetary cost of works per day, £199 (source: CBA report 2010 prices, average cost of impact for all works involving some form give & take traffic management on low flow roads)
  - Number of days saved under Permit Scheme, 15,638\*
  - Monetary value of benefit to road users, £3.1M per annum
  - \* saving in days worked calculated for utility works only to avoid over-stating the benefits due to fewer highway authority maintenance works being undertaken.
- 2.3.6 This saving equates to approximately 25% of the overall cost of works calculated in the CBA (£13.1M per annum total cost to road users).

#### 2.4 Conclusions

- 2.4.1 The biggest change is a 2,700 reduction in highway authority works, compared with the noticing records. This is a 55% reduction in highway works.
- 2.4.2 The general trend for utility companies is also a reduction in permit applications compared with the noticing benchmark statistics. Large reductions in water, gas and street lighting works are evident.
- 2.4.3 The overall reduction in average duration is significant; reducing from 5.1 days to 4.7 days. This is a 8% reduction in average works duration. The reduction constitutes 21,000 fewer days worked compared with the situation under Noticing, an overall 48% reduction in working days.
- 2.4.4 Highway authority works average duration shows an increase from 3.6 to 5.9 days but a 30% reduction in the number of days worked. The increase in average duration is a result of relatively more Major and Standard works compared with short duration Minor and Immediate works, which see a sharp reduction in numbers. Utility company works shows a near 50% reduction in average works duration (from 7.3 days to 3.8 days) and over 15,500 fewer days worked (a 60% reduction overall).



- 2.4.5 To avoid over-stating the Permit Scheme benefits due to the large reduction in highway authority works undertaken, the benefits have been calculated for utility works only. The monetary value of the benefit to road users of the Permit Scheme in year 1 is calculated as:
  - Average monetary cost of works per day, £199 (source: CBA report 2010 prices, works with some form of give and take management)
  - Number of days saved under Permit Scheme, 15,638
  - Monetary value of benefit to road users, £3.1M per annum
- 2.4.6 The 48% reduction in number of days worked is substantially higher than the 5% benefit specified in the DfT guidelines for the business case justification for a move to Permit Schemes.

#### 3 KPI MONITORING

#### 3.1 Introduction

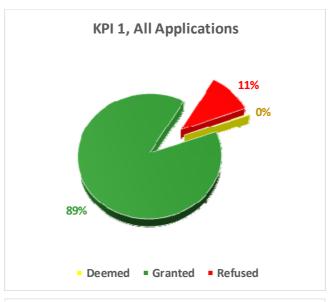
- 3.1.1 The four Key Performance Indicators committed for inclusion in the annual review are;
  - **KPI 1**, the number of Permit and Permit Variation applications received and a breakdown of the number granted and refused
  - KPI 2, the number of conditions applied by condition type
  - **KPI 3**, the 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.

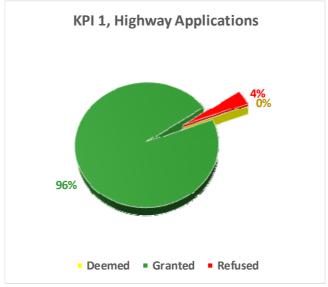
#### 3.2 KPI review

- 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 | %     |
|------------------|----------|---------|-------|
| Highwayauthority | 3,181    | 121     | 3.8%  |
| Utility          | 4,302    | 696     | 16.2% |
| ALL              | 7,483    | 817     | 10.9% |





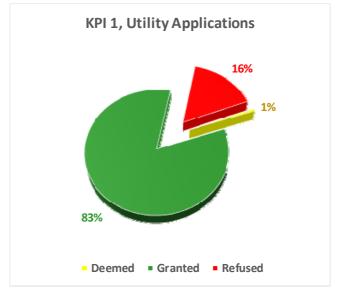


Figure 3: KPI 1, Permit and Variation Applications



- 3.2.3 KPI 1 Approximately one sixth (16%) of all permit and permit variation applications by statutory undertakers were refused. 11% of all applications are refused.
- 3.2.4 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 Figure 4.

| All Conditions | Utility | Highway | All   |
|----------------|---------|---------|-------|
| TOTAL          | 1,267   | 376     | 1,643 |
|                | 77%     | 23%     |       |

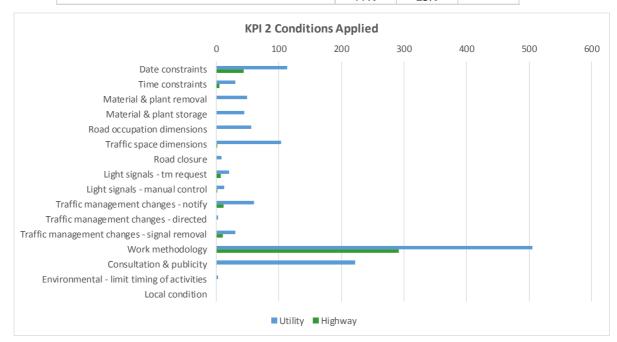
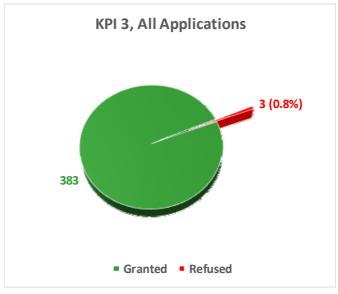
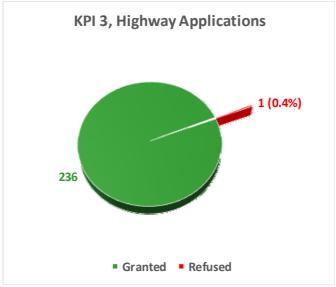


Figure 4: KPI 2, Conditions Applied

- 3.2.5 Approximately three quarters of the conditions applied relate to applications by utility promoters. The remaining quarter apply to highway authority applications.
- 3.2.6 Conditions applied to highway authority permits include date and time constraints, traffic management details and conditions related to work methodology. IN addition to these, utilities have conditions related to material and plant removal and storage, road dimensions occupied and consultation/publicity.
- 3.2.7 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.







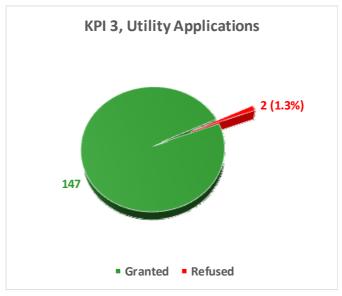


Figure 5: KPI 3, Permit Extensions



- 3.2.8 Only 3 requests for permit extensions were refused in the first year of the Scheme. Two requests by statutory undertakers and one by the highway authority.
- 3.2.9 KPI 7 the Number of Inspections carried out to monitor conditions. During the year 216 inspections have been carried out to monitor permit conditions and from these inspections only 2 passed. 214 (99%) were found to be non-compliant, see Table 8 below.

Table 8 Number of inspections carried out to monitor conditions

| Permit Condition Inspections | Passed | Non-Compliant | Abortive | Number of<br>Inspections | Fail % |
|------------------------------|--------|---------------|----------|--------------------------|--------|
| Highway authority            | 0      | 0             | 0        | 0                        |        |
| Utility                      | 2      | 214           | 0        | 216                      | 99%    |
| ALL                          | 2      | 214           | 0        | 216                      | 99%    |

3.2.10 Only Permit Condition failures are recorded and nothing has been recorded for those that pass. These are picked up during Routine or Targeted A inspections, and from evidence gathered in the office from the IT systems.

Recommendation 02: Consider recording inspections passed for utility and highway authority permits in year two.

3.2.11 570 fixed penalty notices (FPN) have been issued during the course of the year.

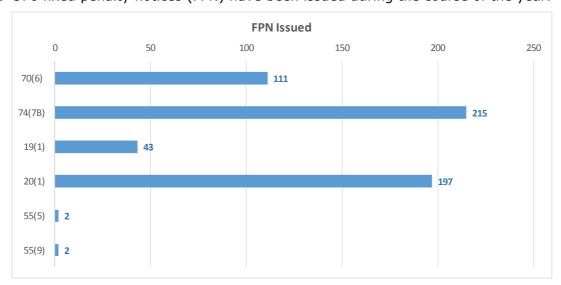


Figure 6: Fixed Penalty Notices Issued

- 3.2.12 The FPN figures for 70 (6), 74 (7B), 55 (5), and 55 (9) are consistent with that from previous years. Offence codes 19 (1) and 20 (1) are new offences relating specifically to permit schemes. It is the Council's intention to monitor these more closely throughout year 2 with a view to working with works promoters to identify and resolve potential issues.
- 3.2.13 240 FPN were issued for breach of permit conditions (20(1)) or working without a permit (19(1)).



Recommendation 03: Monitor site inspection failures and FPN issued for breach of permit conditions in year 2. Meet with poor performing utilities if necessary, to promote performance improvements.

#### 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 one sixth (16%) of all permit and permit variation applications by statutory undertakers were refused (the refusal rate for applications by the highway authority was 3.8%).
- 3.3.2 **KPI 2**, the number of conditions applied by condition type; approximately three quarters of the conditions applied relate to applications by utility promoters. The remaining quarter apply to highway authority applications.
- 3.3.3 **KPI 3**, the number of approved Permit variations (extensions); only 3 requests for permit extensions were refused in the first year of the Scheme. Two requests by statutory undertakers and one by the highway authority.
- 3.3.4 **KPI 7**, the number of inspections carried out to monitor conditions; during the year 216 inspections have been carried out to monitor conditions and from these inspections only 2 passed. 214 (99%) were found to be non-compliant. Only Permit Condition failures are recorded and nothing has been recorded for those that pass. These are picked up during Routine or Targeted A inspections, and from evidence gathered in the office from the IT systems.
- 3.3.5 Consequently, 576 fixed penalty notices (FPN) have been issued during the course of the year. 240 FPN were issued for breach of permit conditions or working without a permit. It is the Council's intention to monitor these more closely throughout year 2 with a view to working with works promoters to identify and resolve potential issues.

#### 4 CONCLUSIONS

## 4.1 Summary

- 4.1.1 The Knowsley Council (KMBC) Permit Scheme went live on 1st April 2015.
- 4.1.2 This report forms the statutory 12 month review and report to DfT, following the first full 12 months of operating the Permit Scheme, 'Knowsley Council 12 Month review, 2015-16'.
- 4.1.3 The purpose of the 12 month review is;
  - 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 Council plan to undertake this review annually.

#### 4.2 Scheme benefits

- 4.2.1 The biggest change is a 2,700 reduction in highway authority works, compared with the noticing records. This is a 55% reduction in highway works.
- 4.2.2 The general trend for utility companies is also a reduction in permit applications compared with the noticing benchmark statistics. Large reductions in water, gas and street lighting works are evident.
- 4.2.3 The overall reduction in average duration is significant; reducing from 5.1 days to 4.7 days. This is a 8% reduction in average works duration. The reduction constitutes 21,000 fewer days worked compared with the situation under Noticing, an overall 48% reduction in working days.
- 4.2.4 Highway authority works average duration shows an increase from 3.6 to 5.9 days but a 30% reduction in the number of days worked. The increase in average duration is a result of relatively more Major and Standard works compared with short duration Minor and Immediate works, which see a sharp reduction in numbers.
- 4.2.5 Utility company works shows a near 50% reduction in average works duration (from 7.3 days to 3.8 days) and over 15,500 fewer days worked (a 60% reduction overall). To avoid over-stating the Permit Scheme benefits due to the large reduction in highway authority works undertaken, the benefits have been calculated for utility works only.
- 4.2.6 The CBA business case calculated the cost per day for each traffic management type on each street type. The monetary value of the financial benefit to road users of the Permit Scheme in year 1 is calculated at £3.1M per annum. This saving equates to approximately 25% of the overall cost of works calculated in the CBA (£13.1M per annum total cost to road users).
- 4.2.7 The 48% reduction in number of days worked is substantially higher than the 5% benefit specified in the DfT guidelines for the business case justification for a move to Permit Schemes.

#### 4.3 Recommendations

4.3.1 Three recommendations have been made to monitor performance during year 2 to prevent the year 1 benefits being eroded and to drive further improvements across the network;

Recommendation 01: Monitor duration of utility company Immediate works to identify if further reductions in works duration can be achieved in year 2.

Recommendation 02: Consider recording inspections passed for utility and highway authority permits in year two.

Recommendation 03: Monitor site inspection failures and FPN issued for breach of permit conditions in year 2. Meet with poor performing utilities if necessary, to promote performance improvements.

#### 4.4 Conclusions

- 4.4.1 This review has demonstrated a significant benefit due to the reduction in the number of days worked on utility works alone. The monetary value of the reduced impact to road users is approximately £3.1M per annum.
- 4.4.2 There are further benefits derived from reduced occupation of the highway, including;
  - improves safety at road and street works
  - reduces noise and air pollution
- 4.4.3 Furthermore, the benefits derived from operating the Permit Scheme include;
  - improved coordination of activities
  - improved communication between authority and utility companies
  - improved accuracy of works records recorded in the Register
  - reduction in customer complaints
- 4.4.4 This review has demonstrated that Scheme has achieved its objectives in the first year, as defined in the application documents.

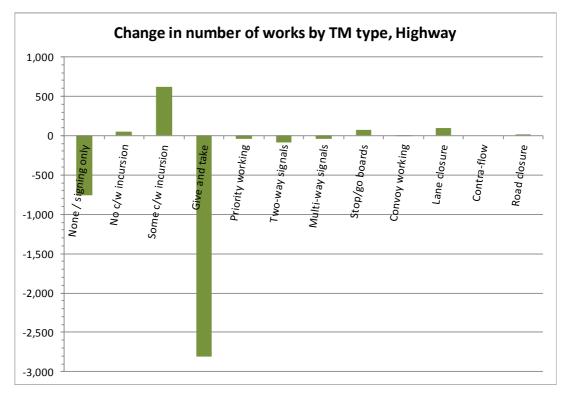
#### A. PERMIT APPLICATIONS 2015-16

### 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 | Noticing<br>2013 | Permitting<br>2015-16 | Change |
|-------------------------|------------------|-----------------------|--------|
| None / signing only     | 755              |                       | -755   |
| No c/w incursion        |                  | 54                    | 54     |
| Some c/w incursion      |                  | 616                   | 616    |
| Give and take           | 3,456            | 651                   | -2,805 |
| Priority working        | 64               | 20                    | -44    |
| Two-way signals         | 229              | 140                   | -89    |
| Multi-way signals       | 119              | 80                    | - 39   |
| Stop/go boards          | 39               | 110                   | 71     |
| Convoy working          | 1                |                       | -1     |
| Lane closure            | 286              | 387                   | 101    |
| Contra-flow             |                  |                       |        |
| Road closure            | 65               | 78                    | 13     |
| Blank                   |                  |                       |        |
| Total                   | 5,014            | 2,136                 | -2,878 |

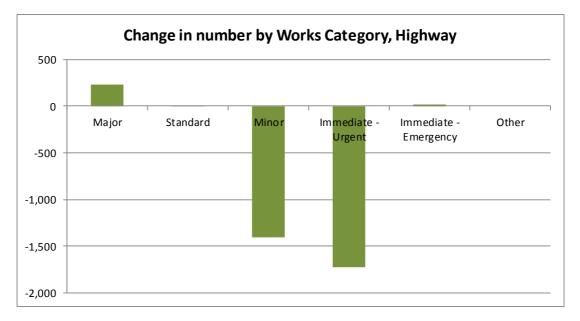


The biggest change is a reduction in the number of works with traffic management type classified as 'none/signing only' or 'give and take'. This is

likely to be linked to the large reduction in the number of highway authority works carried out last year.

Table A.2 Applications by works category

| WORKS STOPPED         | Noticing<br>2013 | Permitting<br>2015-16 | Change |
|-----------------------|------------------|-----------------------|--------|
| Major                 | 99               | 333                   | 234    |
| Standard              | 85               | 88                    | 3      |
| Minor                 | 3,066            | 1,660                 | -1,406 |
| Immediate - Urgent    | 1,746            | 22                    | -1,724 |
| Immediate - Emergency | 18               | 33                    | 15     |
| Other                 |                  |                       |        |
| Total                 | 5,014            | 2,136                 | -2,878 |



The overall reduction in number of highway works is accounted for by the near 50% reduction in Minor works and a 99% reduction in Immediate – Urgent works (3,126 fewer works in all).

There is a significant increase in the number of Major works recorded last year.

Table A.3 Average works duration

| Average duration (days)     | 3.6    | 2015-16<br>5.9 | 2.3    |
|-----------------------------|--------|----------------|--------|
| Total number of days worked | 17,942 | 12,522         | -5,420 |

Highway authority works recorded show an increase in average duration (from 3.6 to 5.9 days) but a 30% reduction in number of days worked, as a result of a 56% reduction in the number of highway authority works undertaken.

The increase in duration is in part to the 234 additional Major works recorded.

Table A.4 Average works duration, by works category

| MAJOR | STANDARD | MINOR | (URGENT) | (EMERG.) |
|-------|----------|-------|----------|----------|
| 29.3  | 8.1      | 1.2   |          | 1.7      |
| 9,748 | 717      | 1,973 | 27       | 57       |

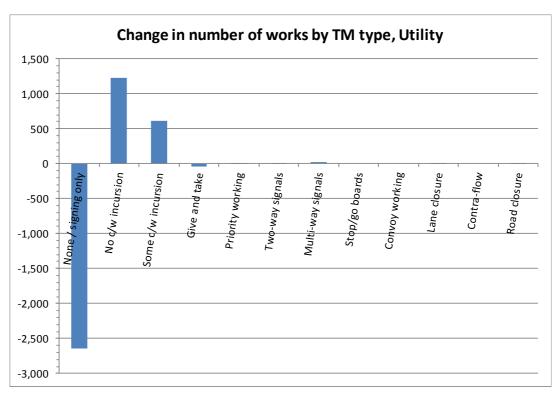
Highway authority average durations are within the range expected for each works category.

#### 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 | Noticing<br>2013 | Permitting<br>2015-16 | Change |
|-------------------------|------------------|-----------------------|--------|
| None / signing only     | 2,645            |                       | -2,645 |
| No c/w incursion        |                  | 1,222                 | 1,222  |
| Some c/w incursion      |                  | 605                   | 605    |
| Give and take           | 732              | 686                   | -46    |
| Priority working        |                  | 7                     | 7      |
| Two-way signals         | 65               | 79                    | 14     |
| Multi-way signals       | 35               | 58                    | 23     |
| Stop/go boards          | 20               | 20                    |        |
| Convoy working          | 1                | 1                     |        |
| Lane closure            | 48               | 55                    | 7      |
| Contra-flow             |                  |                       |        |
| Road closure            | 19               | 32                    | 13     |
| Blank                   |                  |                       |        |
| Total                   | 3,565            | 2,765                 | -800   |



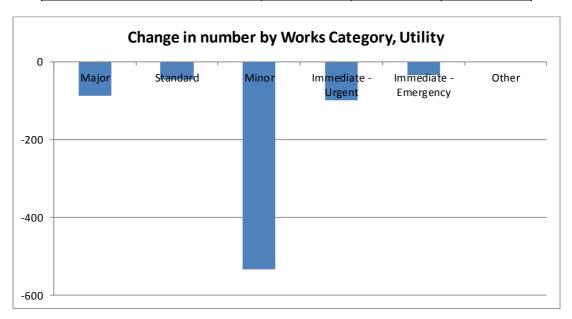
Traffic management changes for utility works are primarily a result of the transition from EToN5 to EToN6 traffic management types, with a shift from 'None/signing only' to No or Some Carriageway Incursion or 'Give and take'.

Approximately 65% of the transfer is classified as taking place with no carriageway incursion.

There are no significant changes in the other traffic management types.

Table A.6 Applications by works category

| WORKS STOPPED         | Noticing<br>2013 | Permitting<br>2015-16 | Change |
|-----------------------|------------------|-----------------------|--------|
| Major                 | 155              | 68                    | -87    |
| Standard              | 319              | 273                   | -46    |
| Minor                 | 2,058            | 1,524                 | -534   |
| Immediate - Urgent    | 830              | 731                   | -99    |
| Immediate - Emergency | 203              | 169                   | -34    |
| Other                 |                  |                       |        |
| Total                 | 3,565            | 2,765                 | -800   |



There is no significant change in works category numbers with the Permit Scheme in place, other than a 25% reduction in the number of Minor works.

Table A.7 Average works duration

| Total number of days worked | 26,022           | 10,384                | -15,638 |
|-----------------------------|------------------|-----------------------|---------|
| Average duration (days)     | 7.3              | 3.8                   | -3.5    |
| DURATION                    | Noticing<br>2013 | Permitting<br>2015-16 | Change  |

Utility works show a near 50% reduction in average works duration and over 15,500 fewer days worked (a 60% reduction overall).

Table A.8 Average works duration, by Works Category

| MAJOR<br>20.5 | STANDARD<br>7.4 | MINOR<br>1.9 | IMMED.<br>(URGENT)<br>4.2 | IMMED.<br>(EMERG.)<br>6.1 |
|---------------|-----------------|--------------|---------------------------|---------------------------|
| 1,392         | 2,021           | 2,908        | 3,037                     | 1,026                     |

Average durations for Immediate – Urgent and Immediate – Emergency works are higher than the corresponding durations for highway authority works (4.2 and 6.1 days compared with 1.2 and 1.7 days).