

GMRAPS

GREATER MANCHESTER ROAD ACTIVITY PERMIT SCHEME

3RD YEAR REPORT

2015/16



Salford City Council



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1. Introduction

The Greater Manchester Road Activities Permit Scheme (GMRAPS) was the first Joint Permit Scheme to be implemented in England. GMRAPS commenced operation on the 29th April 2013 and the scheme is operated by the 10 Greater Manchester Local Authorities, Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan under the administration of Transport for Greater Manchester (TfGM).

This is the 3rd Year evaluation of the GMRAPS using data obtained between 1st April 2015 and 31st March 2016 in addition to historical Greater Manchester Streetworks data going back to 1st April 2012, including one year of pre-scheme data compiled from the individual Authorities historical works noticing systems. The report evaluates the progress of the permit scheme in meeting both the stated objectives and parity of treatment of all works for highway purposes and utility street works.

The aim of the report is to review, analyse, reflect and comment on the successes, challenges and future of the Greater Manchester Permit Scheme. It provides an ideal opportunity to identify those aspects of the permit scheme where improvements in performance are needed in order to bring about more successes in the years to come.

All data within this report was produced by TfGM's Collaborative Service Centre (CSC) using the shared Symology system used by all 10 Greater Manchester Permit Authorities.

The intended audience includes the Department for Transport, utility companies and other Promoters, other stakeholders and other local authorities and all users of the public highway.

Year 3 of the permit scheme has seen a large planned programme of highway works carried out as part of a wider transformation of Greater Manchester. Many of the highway works that have taken place are to deliver an improved public transport system which includes a second city tram line, a new bus priority scheme, electrification of the railways and dedicated cycle lanes to accommodate growth in Greater Manchester.

Greater Manchester is one of the fastest growing regions in Europe and all this work has been undertaken simultaneously to enable this growth to happen and ensure the Greater Manchester region and city centre is ready for a growing business base and population growth. This work has inevitably caused some inconvenience in the short term with some journeys into and out of the Manchester city centre and through Greater Manchester taking longer during the works.

However this disruption has been mitigated by using GMRAPS to give greater control and information regarding activities taking place on the Greater Manchester Highway Network and in spite of these challenging conditions has led to some positive highlights when reviewing the operation of the 3rd Year of the scheme in comparison with the data from previous years.

Other positive observed changes since the introduction of GMRAPS has been accuracy of information supplied by works promoters, with more accurate dates, plotting of works and traffic management information now being available to coordinators and road users through the Greater Manchester Public Register (www.gmroadworks.org) which is available online, showing all activities across Greater Manchester Highway Network. This improvement has allowed some Greater Manchester Authorities such as Manchester and Rochdale to use direct feeds from the GMRAPS system to populate their own council websites.

The Permit and Highway Authorities together with TfGM and the Utilities have aimed to keep residents, businesses and all users of Greater Manchester fully informed of what is going on as this programme of works progresses and wherever possible we publish in advance notification of potential traffic works that could lead to disruption through many channels such as TfGM's "Travel Update" service and utilisation of both mobile and our fixed Variable Message Signs (VMS).

Moving forward the Greater Manchester Authorities are committed to improving the Scheme, working more closely with Promoters to amend and develop the current processes to make sure that the Permit Scheme is more consistent and reliable across the whole of Greater Manchester for all stakeholders.

The first annual report highlighted some areas where further developments of the scheme and improved reporting capabilities were required. These will help to evaluate and maximise the scheme benefits and an update to these original recommendations is provided in section 9.

It must be noted that the ongoing success of GMRAPS is due to the responsibility taken by all stakeholders to deliver a successful Permit Scheme. Without the commitment of the Local Authorities, TfGM, Utility and Highway Promoters the Scheme would not have been implemented and operated as smoothly or successfully.

2. Objectives of GMRAPS

The objectives of GMRAPS were laid out in Section 3 of the scheme document. These are summarised below;

Objective 1; To ensure safety for those using, working on or living adjacent to the street; Operational Measures and discussions relating to this objective are mentioned in Section 7.1.

Objective 2; To minimise inconvenience and disruption caused by activities to those using the streets. Operational Measures and discussions relating to this objective are mentioned in Section 7.1 – 7.4.

Objective 3; To protect the structure of the street and the integrity of apparatus on or in it. The existing performance Indicator (PI4), Operational Measures and discussions to inspection results within Greater Manchester are mentioned in section 5.4.

Objective 4; Parity of treatment for all Promoters. The existing performance Indicators (PI's) in section 5.1 – 5.3 cover parity within the scheme.

3. Fee structure

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

Within GMRAPS, TfGM provides a financial update to Greater Manchester Combined Authority (GMCA) on a yearly basis giving an overview of the operation of the scheme and a future forecast as well as recommendation regarding the future variation of permit fees, to ensure that the scheme operates on a cost - neutral basis.

Subsequent to the amended Permit Regulations, GMCA decided on the 28th August 2015 to reduced fees for permits working outside traffic sensitive times and locations on the roads that carried the higher yearly flows from the 1st Oct 2015 onwards.

Following the Year 3 report being submitted to GMCA it was decided at their meeting on the 29th July 2016 to retain the fee structure as it stands.

4. Costs and Benefits

The Traffic Management Permit Scheme (England) (Amendment) Regulations 2015 require that the permit authority also shall give consideration to whether the permit scheme is meeting key performance indicators where these are set out in the Guidance. The evaluation of the scheme should cover the costs and benefits of the scheme (whether or not financial).

An analysis for Year 3 of GMRAPS was carried out to seek to estimate the cost benefit that Road work permit schemes may deliver by calculating the cost of delay on Greater Manchester's roads attributed to roadwork activity.

4.1 Methodology

In order to estimate the cost of roadworks and therefore the benefit that Road work Permit Scheme may deliver, two approaches have been considered. The first is to provide a broad view by considering the impact of roadworks at a network level. The second involves a deeper look into specific works by undertaking case studies at a number of locations.

It is possible to estimate the total level of delay on Greater Manchester's road network using Trafficmaster GPS data. A journey time for each classification of road (A Roads, B Roads, Minor Roads and Local Streets identified in Ordinance Surveys ITN) for each hourly period 07:00 to 19:00 is calculated and compared to journey times under free flow conditions established by deriving a journey time for the period 20:00 to 06:00. This journey time analysis revealed that at this aggregate level, delays could only be identified in A Road, B Road and Minor Road classifications with journey times on Local Streets being consistent throughout the day.

An estimate of the number of vehicles on a typical A Road, B Road and Minor Road link is derived using data from TfGM and the DfT's manual count programme¹. This volumetric data is combined with the delay data to provide an estimate for the total number of vehicle hours of delay.

Having established the total level of delay, the next step is to establish what proportion of this delay is attributable to roadworks. TfGM is working towards a framework where specific causation factors towards congestion can be measured. However, analysis of other dense highly trafficked networks attribute 10% of delay being the result of roadworks².

¹ TfGM DSD Report 1840 Road Traffic Section.

² London Permit Scheme For Roadworks and Street Works First Year Evaluation Report.

The proportion of delay caused by roadworks is multiplied by the value of time set out in TfGM's Highway Forecasting and Analytical Services' (HFAS) report considering the cost of congestion in Greater Manchester³. By applying the standard DfT values of time contained in the WebTAG Data Book, the report estimates the additional costs of congestion and delay on the economy of Greater Manchester as:

- £9.78 per hour of additional delay in the morning peak (or 16p / minute)
- £10.05 per hour of additional delay in the evening peak hour (or 17p / minute)
- £10.79 per hour of additional delay during the daytime inter-peak period (or 18p / minute).

Having estimated the cost of delay on Greater Manchester's roads caused by roadworks this can be divided by the number of days of roadworks activity which are likely to impact the operation of the network. This provides an estimate of the average cost of each day of roadwork activity of £390.

This figure was then used along with pre-scheme and Year 3 duration data to provide a cost of delay attributed to Highway works within the carriageway for Year 3 of operation as indicated in the table below;

Table 3.1 – Estimated saving due to shorter duration carriageway works

Year	Number of works registered as complete within carriageway	Duration of works registered as complete carriageway (days)	Average duration of works registered within carriageway (days)	Estimated cost of delay of attributed to each highway work activity (per day)	Average cost of Highway work registered as completed within carriageway (per site)	Cost of delay saving attributed to Highway works within carriageway for Year 3 compared with Pre-scheme levels
Pre-scheme (12/13)	49,130	258,735	5.27	£390	£2,053.87	£15,137,735
Year 3 (15/16)	49,617	222,485	4.48	£390	£1,748.78	

To provide a deeper insight into the costs of delay caused by roadworks a number of case studies were undertaken. These focused on instances of abnormal delay identified in TfGM's journey time dataset which coincided spatially and temporally with roadworks.

³ TfGM HFAS Report 1853 – Cost of Congestion in Greater Manchester.

For each section affected by the works the level of delay was derived by comparing journey times under typical conditions to those during the works. In order to address issues of sample rate and data availability the case studies made use of journey time data derived from TfGM's network of passive sensors rather than the Trafficmaster GPS data.

The total number of vehicle hours was then calculated by multiplying the additional delay caused by the works by the number of vehicles using each link. Again the delay was multiplied by the value of time identified by TfGM HFAS to provide the total cost of delay at each location. The results of these case studies is summarised in table 3.2 below and the detailed data can be found in the appendices.

Table 3.2 – Estimated cost of delays caused by Highway works

Location	District	Date	Traffic Management	Estimated Daily Cost of Delay
A49 Warrington Road	Wigan	November 2015	Two Way Signal	£5,233.93
A62 Oldham Road	Manchester	February 2016	Road Closure	£5,801.43
A635 Manchester Road	Tameside	March 2016	Lane Closure	£10,865.54
A5103 Princess Road	Manchester	October 2015	Lane Closure	£8,829.21

While the network analysis estimated the average cost of roadworks to be £390 the case studies demonstrate that the daily cost of roadworks varies and can be upwards of £10,000. This suggests that targeting efforts to reduce the duration of works to the busiest parts of the network or those with least resilience to roadwork activity would maximise the benefits of a permit scheme.

4.2 Assumptions

Both the network analysis and the case studies focus solely on delays on locally managed roads. It is likely that works on locally managed roads will contribute to delays on the SRN and equally works on the SRN will cause delays on locally managed roads both through traffic queueing across both network and through traffic re-routing from one network to another.

This analysis considers the cost of delays caused by roadwork on weekdays. Works undertaken at a weekend can also cause delays and therefore have a cost to Greater Manchester's road users and economy. Undertaking analysis which looks at the costs of works on weekdays compared to weekends and term time compared to school holidays would provide evidence to support decisions on the timetabling and phasing of works.

5. Performance Indicators

Four Performance Indicators (PIs) were established and form part of the scheme document, these are based on suggested historical indicators from previously issued national permit guidance that is no longer in use. Midway through Year 3, DfT published new statutory KPI's. We will continue to report on the PI's as they still feature in the GMRAP document, however next time the scheme is varied by Order we will change to reporting the statutory KPI covered in section 6 of this report.

5.1 PI1 The number of permit and variation applications

Number of Permit Applications

Table 5.1 shows a breakdown of permit applications that were received, granted and refused for the third year of operation in GMRAPS. The report is produced based on decision notices sent out by the Permit Authority and therefore the following considerations must be noted in relation to this data;

- Each application has an appropriate response period. This means that the number of applications received in any one period does not correspond to the permits granted and refused within that same period. In other words, a permit application received in one period may be responded to within the next period.
- The data does not include any applications that have not yet received a decision, or were superseded by a subsequent revised application before a decision was made.

Table 5.1 – Total Year 3 permits processed table

Permits Received/Granted/Refused	Number
Total permit/ variations applications received	149,120
Total Applications deemed	367
- Works cancelled before Granted, / Deemed	7,112
- Total permits/ variation applications whose status cannot be determined:	12,087
= Total permits granted or refused:	129,632
Total permit/ variations applications granted	119,258
Total permit/ variations	10,374

Permits Granted and Refused

Chart 5.1 on the next page details a breakdown of the data into applications granted, permit modified, refused and deemed to apply in relation to Highway Authority works for road purposes and works by utility promoters. It also provides a comparison with the percentage of the total number of permit, PAA and permit variation applications received, excluding any applications that are subsequently withdrawn; the number granted as a percentage of the total applications made and the number refused or modified as a percentage of the total applications made.

Table 5.2 shows the split of responses to permit applications received from both the Highway Authority and utility promoters. On average, Highway Authorities generated 30% and utility promoters 70% of the applications received.

Chart 5.1 – Percentage Year 3 permits response rate

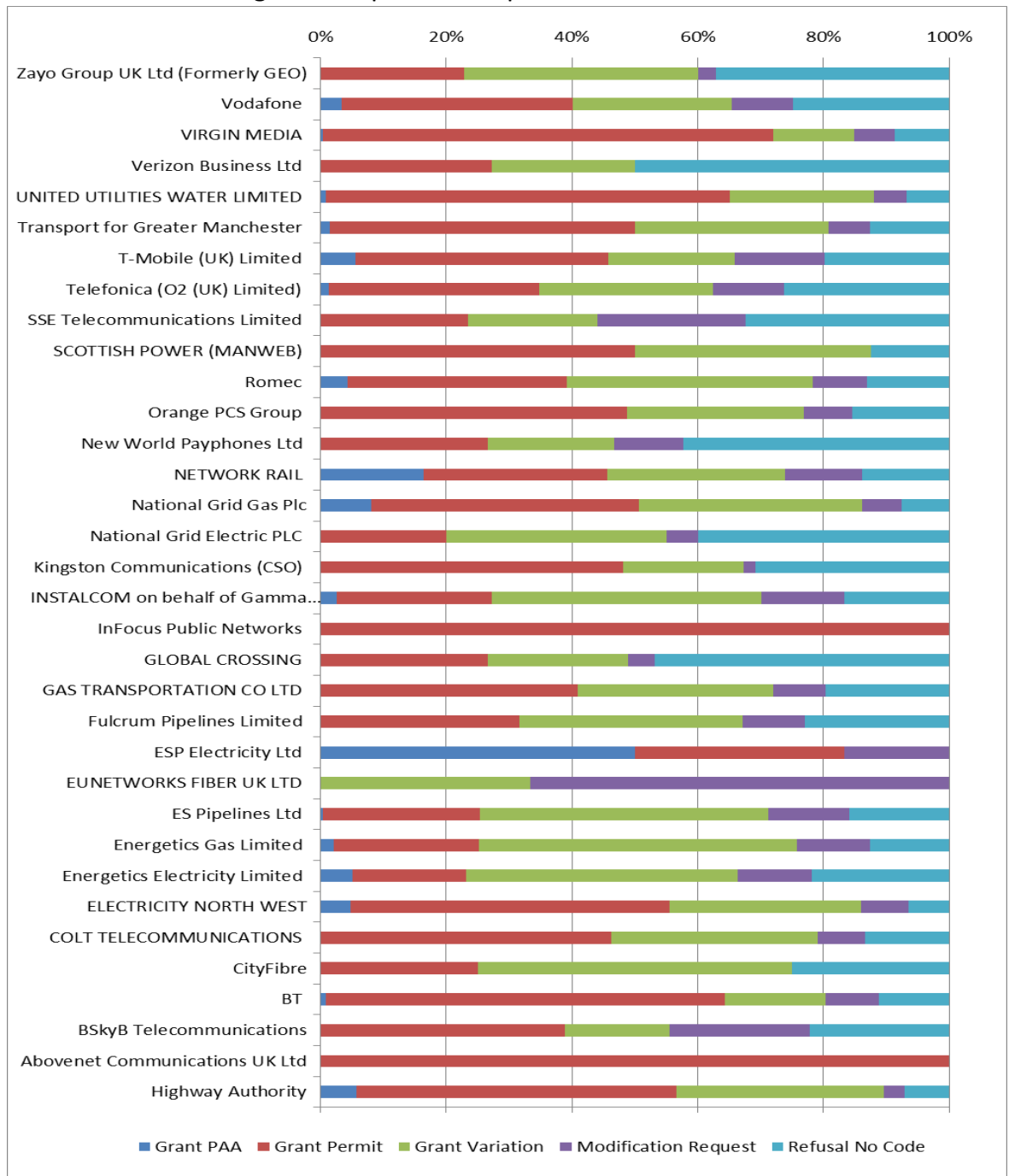


Table 5.2 –Year 3 response Utilities / Authority comparison

Description	Highway / Transport or Bridge Authority		Utility	
	Totals	% of Totals	Totals	% of Totals
Permit / Variations Granted	33,396	90%	85,862	85%
Permit Modification Request	1,469	4%	6,786	7%
Permit / Variations Refused	2,343	6%	8,031	8%
Deemed	130	0.4%	237	0.3%
Totals	37,208		100,679	

Analysis

The average refusal rate for permit applications across the Scheme stands at 7% and the refusal rate for Highway Authority for the schemes stands at an average of 6%. With refusal rates 1% off the average for the Utilities and some of the major Utilities benefiting from the same or lower refusal rates compared with than the Highway Authorities as indicated in chart 5.1, we can clearly evidence in line with Objective 4 of the scheme that there is general parity across all Promoters with how permit applications are treated.

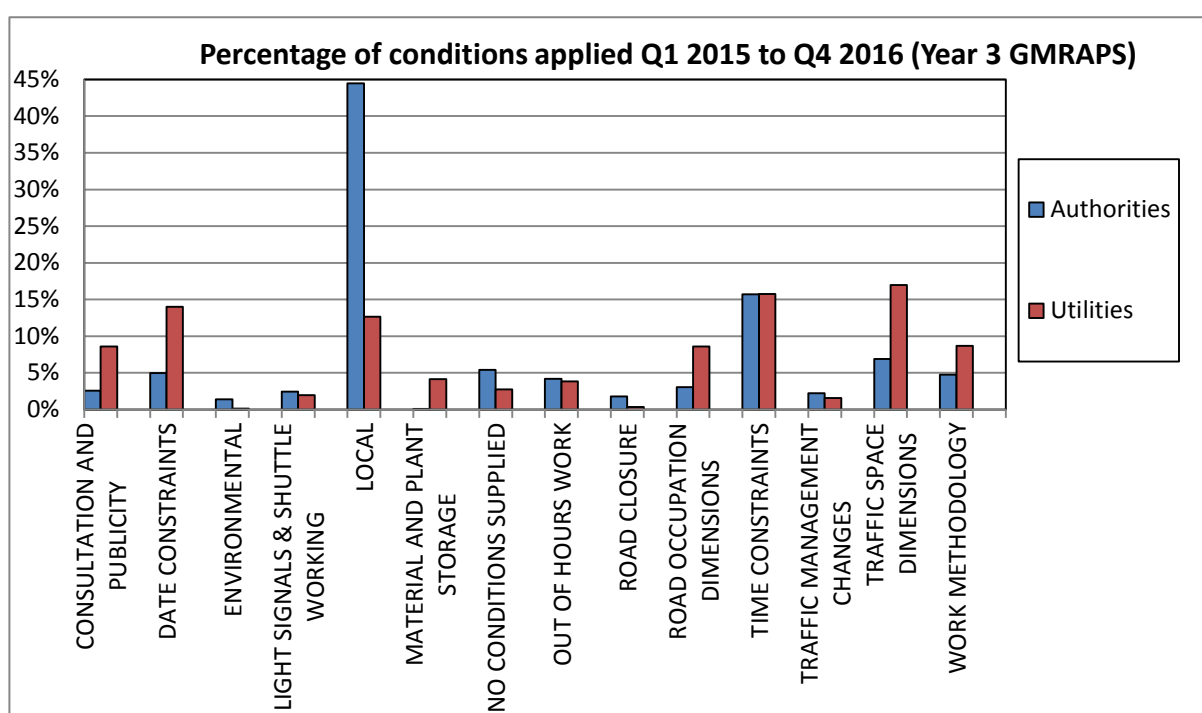
It has been observed from granted rates that since the start of the GMRAPS that the standard of permit application submitted by the Highway Authorities has increased year on year whilst the Utilities have remained consistent.

Some permit applications do not receive a reply from the Permit Authority within the response period. The street works register treats these as 'deemed approved' once the response period has expired. The above table also shows a small amount of applications from both external and internal promoters as deemed, this is comparable with other multi authority permit schemes that have deemed rates of around 1%.

5.2 PI2 The number of conditions applied by condition type.

This data indicates the number of conditions applied by promoter, broken down into condition types. This report is produced based on granted decision notices (PAA, PA and variation) sent out by the Permit Authority. It shows the total number of uses of each condition type as a percentage of the total number of granted applications. The most recent version of the conditions is used. The report also includes any permits subsequently cancelled by the works promoter. Occasionally a promoter may not use the statutory agreed format for the condition code, under these circumstances the condition text will not register.

Chart 5.2 –Year 3 percentage conditions applied



Analysis

Part way through Year 3 of the scheme the conditions changed over to national conditions, therefore the use of conditions has somewhat changed over the past year and it is more common to observe permits with no conditions rather than the local conditions applied prior to 1st October 2015.

A similar amount of conditions are applied to both Highway Authority works and utility works. This indicates that a consistent level of scrutiny and intervention is being undertaken by the Permit Authorities on both types of works within a tolerance of around 15% difference.

More local conditions are applied to Highway Authority works to effectively manage performance of Highway Authority works.

One could suggest that the greater use of the Electronic Transfer of Notice (EToN) system to attach traffic management plans to the permit could alleviate the need for greater use of conditions in some situations by giving greater confidence to the Permit Authority prior to granting the permit.

5.3 PI3 The number and percentage of approved extensions vs number of permits issued

The table below indicates permits which required the duration of the works to be extended.

Table 5.3 –Year 3 extension Utilities / Authority comparison

	Highway, Transport or Bridge Authority		Utilities	
	Number	Percentage of total	Number	Percentage of total
Number of Permits Granted	20,259		61,571	
Number of requests for extensions	2,669	13.17%	8,068	13.10%
Number of agreed extensions	2,639	98.88%	7,895	97.86%
Number of extensions refused	30	1.12%	173	2.19%

Analysis

The results indicate that both Highway Authorities and Utilities required extensions for about 13% of permits issued and that agreements rates were both around 98%. We can clearly evidence that in line with Objective 4 of the scheme that there is general parity across all Promoters with volume of extensions requested and the number percentage granted.

Obviously in an ideal world works would be planned to not require extensions, however one consequential effect of reducing work durations has been the understanding that occasional extensions maybe required due to unforeseen

issues encountered on site. Any clamp down on the granting of extensions may lead to longer work durations being proposed in the first instance.

5.4 PI4 The number of Inspection to monitor conditions

When this PI was devised it was envisaged that a new type of inspection, permit condition checks, would be implemented nationally to agreed standards for collation and transmission of this data. Unfortunately this was not the case and permit authorities do not currently have the facilities to undertake permit condition checks within the Electronic Transfer of Notices (EToN) system. We do not have visibility of all Category A inspection data, as Highway Authorities rarely formally register their inspections via noticing systems for their own works. This results in a lack of Category A data for Highway Authorities. We have decided to include this data in the Year 3 report for parity, on the basis that it is noted the Highway Authority data is not a true reflection of the actual inspection of the works whilst they are taking place.

Table 5.4 –Year 3 Category A Inspection totals

	Number of works phases started	18 - Sample Category A Inspections *	19 - Sample Category A Failures*	Inspections as a % of works phases started	Failures as a % of total inspections
Highway Authorities	17,799	26	4	0%	15%
BT	8,770	1,863	75	21%	4%
ELECTRICITY NORTH WEST	6,374	1,932	99	30%	5%
Energetics Electricity Limited	81	28	22	35%	79%
National Grid Gas Plc	7,834	2,908	102	37%	4%
UNITED UTILITIES WATER LIMITED	23,212	6,434	137	28%	2%
VIRGIN MEDIA	12,341	1,365	42	11%	3%
Vodafone	514	70	4	14%	6%
COLT TELECOMMUNICATIONS	47	2	0	4%	0%
ES Pipelines Ltd	103	15	0	15%	0%
Fulcrum Pipelines Limited	132	48	0	36%	0%
NETWORK RAIL	294	10	0	3%	0%
Telefonica (O2 (UK) Limited)	60	5	0	8%	0%
T-Mobile (UK) Limited	225	10	0	4%	0%
Transport for Greater Manchester	1,458	15	0	1%	0%

Analysis

Generally, failures as a percentage of total inspections are low across the board with the exception of Highway Authorities. As previously explained, improvements to formally record data via formal noticing are evidently required. Generally with standing this, failure rates are low at 6% or below.

6. DfT KPI measures

This section outlines the Statutory Key Performance Indicators as highlighted in Annex A of the Statutory Guidance for Highway Authority Permit Schemes published by DfT halfway through Year 3 of GMRAPs. The KPIs focus on occupancy, co-ordination and inspections, and therefore relate mainly to the stages of the works from works start to final conclusion. The figures show totals for each Utilities, bridge authorities, transport authorities and the cumulative Greater Manchester Highway Authorities.

Table 5.5 –Year 3 Statutory KPI's

	TPI1 Works Phases Started	TPI2 Works Phases Completed	TPI3 Days of Occupancy	TPI4 Average duration of completed work phases	TPI5 Works Phases Completed after the Reasonable Period	TPI6 Number of Deemed Applications	TPI7 Number of Phase 1 Permanent Registrations
Highway Authorities	17,799	16,551	1,032,896	16	625	111	2,114
Abovenet Communications UK Ltd	2	2	7	4	0		1
BSkyB Telecommunications	9	9	13	2	0	2	3
BT	8,770	8,773	74,786	5	49	32	5,813
CityFibre	1	1	9	9	0		0
COLT TELECOMMUNICATIONS	47	47	149	8	0	2	9
ELECTRICITY NORTH WEST	6,374	6,455	113,936	14	50	39	5,215
Energetics Electricity Limited	81	81	1,294	15	4	2	47
Energetics Gas Limited	25	25	251	10	0		20
ES Pipelines Ltd	103	107	1,666	7	1		64
ESP Electricity Ltd	2	2	5	3	0		0
EUNETWORKS FIBER UK LTD	2	2	4	2	0		2
Fulcrum Pipelines Limited	132	131	2,911	5	1	2	82
GAS TRANSPORTATION CO LTD	66	67	935	7	3	1	28
GLOBAL CROSSING	37	39	141	5	0	2	5
InFocus Public Networks	1	1	2	2	0		1
INSTALCOM	43	48	725	15	1		24
Kingston Communications (CSO)	31	31	76	5	0	1	1
National Grid Electric PLC	9	9	29	3	0		0
National Grid Gas Plc	7,834	7,870	150,038	13	102	43	5,828
NETWORK RAIL	294	299	10,910	11	3	5	32
New World Payphones Ltd	9	9	10	4	0		3
Orange PCS Group	16	16	45	4	0		5
Romec	10	7	12	2	0		7
SCOTTISH POWER (MANWEB)	14	14	60	5	0		0
SSE Telecommunications Limited	16	16	61	4	0		0
Telefonica (O2 (UK) Limited)	60	61	865	2	0		0
T-Mobile (UK) Limited	225	228	718	1	0	2	115
Transport for Greater Manchester	1,458	1,590	49,897	7	32	14	96
UNITED UTILITIES WATER LIMITED	23,212	23,219	180,842	10	192	66	16,781
Verizon Business Ltd	7	6	49	6	0	3	5
VIRGIN MEDIA	12,341	12,281	115,046	10	43	34	8,097
Vodafone	514	520	1,544	3	0	6	182
Zayo Group UK Ltd (Formerly GEO)	9	11	36	46	0		3
Total/ average	79,553	78,528	1,739,968	8	1,106	367	44,583

Analysis

The main observation from the table indicates that with the exception of some of the minor Utilities, Highway Authorities works have the highest amount of days occupancy. This could however be due to historically poor noticing practices by some Highway Authorities where delays can occur in issuing works stop notices on completion of works.

7. Objective Measures

In addition to scheme PI's and DfT KPIs. GMRAPS has collated its own data that monitors the safety for those using, working on or living adjacent to the street and also monitors the inconvenience and disruption caused by activities to those using the streets both of which are Objectives 1 and 2 of the scheme.

7.1 Objective Measure 1 – Highway Safety of Works

In order to assess Objective 1; to ensure safety for those using, working on or living adjacent to the street, we have looked at collision data for the past 6 years where highway works have been recorded by Greater Manchester Police as a “special site condition” and where “temporary road layout” is recorded as a contributory factor. This data as shown in Table 7.1 and is per calendar year rather than scheme year. A percentage figure also shows its relationship to overall collision totals.

Table 7.1 – Annual collision rates attributed to highway works

	Pre GMRAPS				GMRAPS	
	2010	2011	2012	2013	2014	2015
Number of Greater Manchester Collisions where Roadworks Recorded <i>Special Site Condition</i> (All Severity)	77	63	49	33	57	47
% Greater Manchester Collisions where Roadworks Recorded <i>Special Site Condition</i> (All Severity)	1.4%	1.2%	1.1%	0.9%	1.4%	1.5%
Number of Greater Manchester Collisions Where <i>Temporary Road Layout</i> Recorded as a Contributory Factor (All Severity)	8	12	11	10	8	9
% Greater Manchester Collisions Where <i>Temporary Road Layout</i> Recorded as a Contributory Factor (All Severity)	0.1%	0.2%	0.3%	0.3%	0.2%	0.3%
All GM Collisions	5,444	5,127	4,378	3,861	4,004	3,073

Analysis

Whilst there has been a downward trend in the number of collisions at sites which could be deemed as highway works locations since the introduction of GMRAPS, this reflects a downward trend of overall collisions over this period. When looking at the percentage of overall works then the figures are generally consistent which would indicate this Objective Measure cannot demonstrate any tangible improvement linked to GMRAPS, as the figures generally consistent over the past 5 years.

Likewise the publication of the Safety at Streetworks Code of Practice published by in DfT in 2011 and then updated in 2013 doesn't seem to have influenced figures significantly on the Greater Manchester road network.

7.2 Objective Measure 2 – Duration of Works

In order to assess Objective 2; to minimise inconvenience and disruption caused by activities to those using the streets Objective Measure 2a (OM2a) measures the number of designated completed works for each Greater Manchester District, both in terms of the actual number of works, the total duration and the average duration. Unlike the data within the Cost and Benefits data used in section 4 this data includes all works even those designated as having “No Carriageway Incursion” to measure disruption caused to the pedestrian in addition to road user.

Table 7.2 – Duration of works by district

District	Number of Works				Total duration of works				Average Duration of Works			
	April 2012 to March 2013 (Baseline Year)	April 2013 to March 2014 (Year 1)	April 2014 to March 2015 (Year 2)	April 2015 to March 2016 (Year 3)	April 2012 to March 2013 (Baseline Year)	April 2013 to March 2014 (Year 1)	April 2014 to March 2015 (Year 2)	April 2015 to March 2016 (Year 3)	April 2012 to March 2013 (Baseline Year)	April 2013 to March 2014 (Year 1)	April 2014 to March 2015 (Year 2)	April 2015 to March 2016 (Year 3)
Bolton	6,387	13,534	9,110	8,433	17,501	29,472	29,723	27,177	2.7	2.1	3.3	3.2
Bury	3,648	4,028	3,873	3,637	15,873	14,565	17,551	17,031	4.4	3.6	4.5	4.7
Manchester	10,444	8,573	10,462	10,612	59,496	50,297	52,138	52,575	5.7	5.9	5	5
Oldham	5,370	8,006	6,874	6,198	34,167	35,282	55,069	42,458	6.4	4.4	8	6.7
Rochdale	7,637	10,091	8,791	6,233	72,070	25,629	55,993	24,718	9.4	2.5	6.4	4
Salford	5,011	9,651	6,979	7,788	18,940	35,868	42,210	40,214	3.8	3.7	6	5.2
Stockport	6,089	6,647	7,301	11,005	24,332	29,566	37,974	42,667	4	4.4	5.2	3.9
Tameside	3,802	4,437	4,556	4,117	18,503	26,665	29,014	23,324	4.9	6	6.4	5.7
Trafford	4,949	4,237	4,197	4,360	28,331	19,762	21,903	22,394	5.7	4.7	5.2	5.2
Wigan	8,342	7,985	10,857	12,516	31,037	32,730	38,484	37,182	3.7	4.1	3.5	2.9
All Greater Manchester	61,679	77,189	73,000	74,899	320,250	299,836	380,059	329,740	5.07	4.14	5.35	4.65

Analysis

Table 7.2 indicates that since the introduction of GMRAPS in 2013 there has been an increase of works. But in reality it could indicate that the number of “registered works” has increased from pre-scheme levels, given greater visibility and scrutiny of highway activity. During Year 3 the number of total works increased yet the average duration of works across Greater Manchester has marginally decreased when compared with Year 2.

A review of the average durations for each District demonstrated that only 1 Authority out of 10 has seen an increase of average durations of works when compared with last year's figures. Total figures indicate that average total District durations have reduced from both last year and pre-scheme levels.

An additional measure linked to duration of works, Objective Measure 2b (OM2b) shows the number of completed works for each Greater Manchester District, in terms of the actual number of works, total duration and average duration of each type of roadwork. This is important as it can be used to determine whether works are on average being completed within the permitted timeframes. The outcome for OM2b is shown below:

Table 7.3 – Duration of works by works type

Type	Number of Works				Total duration of works				Average Length of Works			
	April 2012 to March 2013 (Baseline Year)	April 2013 to March 2014 (Year 1)	April 2014 to March 2015 (Year 2)	April 2015 to March 2016 (Year 3)	April 2012 to March 2013 (Baseline Year)	April 2013 to March 2014 (Year 1)	April 2014 to March 2015 (Year 2)	April 2015 to March 2016 (Year 3)	April 2012 to March 2013 (Baseline Year)	April 2013 to March 2014 (Year 1)	April 2014 to March 2015 (Year 2)	April 2015 to March 2016 (Year 3)
Immediate (Emergency)	4,308	5,107	5,957	3,702	22,032	31,355	34,955	27,676	5.1	6.1	5.9	7.5
Immediate (Urgent)	16,442	14,340	14,722	16,200	76,495	63,321	64,286	74,931	4.7	4.4	4.4	4.6
Major	2,527	1,495	3,825	3,051	89,386	54,514	127,652	66,455	35.4	36.5	33.4	21.8
Minor	31,287	49,488	40,141	43,987	69,752	92,592	82,213	84,188	2.2	1.9	2	1.9
Standard	7,115	6,759	8,355	7,959	62,588	58,054	70,953	76,490	8.8	8.6	8.5	9.6
All	61,679	77,189	73,000	74,899	320,253	299,836	380,059	329,740	11.24	11.5	10.84	9.08

Analysis

In terms of number of works there has been a reduction in the number of Immediate (Emergency) from pre-scheme and Year 2 levels. However there has been a marked increase in Immediate (Urgent) and minor works from Year 2.

Data recently provided by Geoplace indicates that GMRAPS generally has a lower ratio of number of Immediate works compared to planned works (27%) than the national permit scheme average (34%). This was looking at data from Q2 12/13 through to Q2 15/16.

Another notable observation when looking at Year 3 is that there has been a reduction in the number of major and standard permit numbers from Year 2 figures. These traditionally relate to the higher financial fee of permit offered and present a challenge in managing the finance of the scheme.

Year 3 "average duration of works" have reduced for major and minor works from both last year and pre-scheme levels. However durations of Immediate

(Emergency) and standard works have increased when compared with both previous year and pre-scheme level and are an area of concern going forward into year 4. However standard works are still within the statutory 10 days.

7.3 Objective Measure 3– Change in Off-Peak Only Working

Objective Measure 3 (OM2) provides a comparison across all Greater Manchester Districts for the number of sites where off-peak working has been a condition for works to proceed. These have been identified using the defined permit condition NCT02 (formerly GM02), used to implement time restrictions on works, with works instructed to not take place during peak times of Traffic sensitivity.

As condition data was not recorded prior to implementation of the GMRAPS scheme, data on permitted hours of operation prior to April 2013 is not available.

Table 7.4 – Off Peak working conditions by District

District	Number of Off-Peak w orks				Total duration of Off-Peak w orks				Average Duration of Off-Peak w orks			
	April 2012 to March 2013 (Baseline Year)	April 2013 to March 2014 (Year 1)	April 2014 to March 2015 (Year 2)	April 2015 to March 2016 (Year 3)	April 2012 to March 2013 (Baseline Year)	April 2013 to March 2014 (Year 1)	April 2014 to March 2015 (Year 2)	April 2015 to March 2016 (Year 3)	April 2012 to March 2013 (Baseline Year)	April 2013 to March 2014 (Year 1)	April 2014 to March 2015 (Year 2)	April 2015 to March 2016 (Year 3)
Bolton	N/A	2,388	2,189	3,585	N/A	4,838	6,441	7,774	N/A	2	2.9	2.2
Bury	N/A	562	860	1,255	N/A	1,281	2,678	4,969	N/A	2.28	4.3	4
Manchester	N/A	1,468	2,862	3,898	N/A	4,062	9,438	11,345	N/A	2.77	3.3	2.9
Oldham	N/A	1,118	1,273	1,942	N/A	4,515	5,946	7,654	N/A	4	4.7	3.9
Rochdale	N/A	2,981	3,073	2,947	N/A	4,578	6,274	7,130	N/A	1.5	2	2.4
Salford	N/A	2,708	2,486	2,738	N/A	7,690	10,621	9,603	N/A	2.8	4.3	3.5
Stockport	N/A	1,642	1,816	3,255	N/A	7,963	8,484	10,275	N/A	4.9	4.7	3.2
Tameside	N/A	802	793	1,244	N/A	2,556	2,068	3,529	N/A	3.2	2.6	2.8
Trafford	N/A	1,080	1,403	1,776	N/A	3,971	7,356	7,384	N/A	3.7	5.2	4.2
Wigan	N/A	1,759	2,061	3,387	N/A	3,843	4,996	7,588	N/A	2.2	2.4	2.2
Greater Manchester	N/A	16,508	18,816	26,027	N/A	45,297	64,302	77,251	N/A	2.935	3.64	3.13

Analysis

The data shows a year on year increase of off peak working as Promotors plan to carry out their works to reduce the impact to the road user. The effect of this will have significant implications in terms of minimising peak hour delay. The increase in traffic flow and journey time at locations can be observed in the graphs in the appendices which depict these peaks at Highway works locations.

When compared with Year 2, the number of off peak works has increased in nine of Greater Manchester Authorities. The average duration of off peak working has reduced in 7 Greater Manchester Authorities. This indicates overall GMRAPS is utilising the scheme to minimise the congestion associated with of high impact works.

7.4 Objective Measure 4 – Change in Temporary Traffic Signals use

Objective Measure 4 (OM4a) shows for each District the number and duration of works where temporary traffic signals were used as traffic management measures for works.

Table 7.5 – Temporary Traffic Signals

District	Number of works with Temporary Signals				Total duration of works with Temporary Signals				Average Duration of works with Temporary Signals			
	April 2012 to March 2013 (Baseline Year)	April 2013 to March 2014 (Year 1)	April 2014 to March 2015 (Year 2)	April 2015 to March 2016 (Year 3)	April 2012 to March 2013 (Baseline Year)	April 2013 to March 2014 (Year 1)	April 2014 to March 2015 (Year 2)	April 2015 to March 2016 (Year 3)	April 2012 to March 2013 (Baseline Year)	April 2013 to March 2014 (Year 1)	April 2014 to March 2015 (Year 2)	April 2015 to March 2016 (Year 3)
Bolton	117	183	396	409	400	843	3,112	2,302	3.4	4.6	7.9	5.6
Bury	112	155	236	238	677	1,275	1,877	1,226	6	8.2	8	5.2
Manchester	185	308	392	397	1,636	7,310	2,651	2,216	8.8	23.7	6.8	5.6
Oldham	188	216	293	401	1,233	1,536	1,901	2,372	6.6	7.1	6.5	5.9
Rochdale	194	151	311	332	1,274	974	2,559	2,086	6.6	6.5	8.2	6.3
Salford	104	131	213	304	605	791	1,376	2,092	5.8	6	6.5	6.9
Stockport	175	287	391	465	1,058	1,473	2,605	2,542	6	5.1	6.7	5.5
Tameside	152	234	212	272	1,167	2,023	1,608	1,511	7.7	8.6	7.6	5.6
Trafford	207	167	217	260	3,293	931	1,581	1,861	15.9	5.6	7.3	7.2
Wigan	212	229	527	701	1,268	2,551	6,981	4,003	6	11.1	13.2	5.7
Greater Manchester	1,646	2,061	3,188	3,779	12,611	19,707	26,251	22,211	7.28	8.65	7.87	5.95

Analysis

Whilst the data indicates an increase in the number works with temporary signals, the average duration of works with temporary signals has reduced year on year since the start of GMRAPS and is now is at a level below the pre GMRAPS figure. This meets the scheme objective of reducing the inconvenience and disruption caused by activities. Only one Authority has seen an increase of the average duration of temporary lights when comparing Year 2 with Year 3.

8 Authority Measures

8.1 AM1 FPNs (Permit Breaches)

The table below gives a breakdown of number and percentage of Fixed Penalty Notices (FPN) issued to Promoter and comparison with previous year.

Table 8.1 – Year 3 Fixed Penalty Notices issued (FPN) comparison

	Year 2 14/15			Year 3 15/16		
	FPN issued	Works Completed	Percentage FPN issued per works completed	FPN issued	Works Completed	Percentage FPN issued per works completed
Greather Manchester Highway Authoirites	828	13,654	6%	664	17,256	4%
BSkyB Telecommunications Services Ltd				1	9	11%
BT	608	7,955	8%	722	8,231	9%
COLT TELECOMMUNICATIONS	6	88	7%	1	44	2%
Concept Solutions People Ltd	8	14	57%			
ELECTRICITY NORTH WEST	433	6,543	7%	347	5,990	6%
Energetics Electricity Limited	18	76	24%	25	77	32%
Energetics Gas Limited	11	22	50%	7	24	29%
ES Pipelines Ltd	27	139	19%	12	93	13%
ESP Electricity Ltd	4	6	67%	2	1	200%
Fulcrum Pipelines Limited	36	161	22%	19	126	15%
GEO / Zayo Group	6	38	16%			
GAS TRANSPORTATION CO LTD	18	38	47%	9	54	17%
GLOBAL CROSSING	2	9	22%	8	36	22%
INSTALCOM	2	17	12%	9	33	27%
Kingston Communications (CSO)	3	30	10%			
National Grid Electric PLC				4	9	44%
National Grid Gas Plc	1,100	7,520	15%	807	7,345	11%
NETWORK RAIL	63	323	20%	35	288	12%
New World Payphones Ltd				1	9	11%
Romec	9	77	12%	2	7	29%
SCOTTISH POWER (MANWEB)				1	14	7%
SSE Telecommunications Limited	2	16	13%	3	14	21%
Telefonica (O2 (UK) Limited)	3	102	3%	4	60	7%
T-Mobile (UK) Limited	19	172	11%	7	220	3%
Transport for Greater Manchester	116	1,667	7%	155	1,593	10%
UNITED UTILITIES WATER LIMITED	1,022	23,719	4%	1,544	21,721	7%
VIRGIN MEDIA	531	10,069	5%	893	11,193	8%
Vodafone	41	495	8%	47	421	11%

Analysis

No overall patterns in FPN's can be identified, some Promoters have observed an increase from last year but some have also observed a decrease. Generally the more the volume of works completed by a Promoter, the lower the percentage of FPN's issued. This demonstrates that the bigger organisations were better at adhering to Streetworks legislation and permit conditions.

More FPN's were issued during Year 3 compared to Year 2 but there were more works taking place. The total ratio in terms of FPN issued per works complete was 7% for both Year 2 and Year 3, therefore the rate at which FPN's are issued would appear to be consistent.

8.2 AM2 Collaboration of works

Work can be planned to take place at a time that other works are taking place in that street or nearby. Where two or more works take place at the same time the overall duration of the works is shorter and the overall disruption to the road network can be less. Collaborative working does not just apply to those works where the same trench can be used by two different promoters. In fact, that instance is quite rare. Collaborative working also applies where the same traffic management scheme is shared by both parties (eg, sharing traffic lights) or the same route is worked on by two parties (eg, a promoter taking advantage of a road being closed by another party in order to deliver works at a less disruptive time).

It is recognised that more effort is required to schedule two activities to be delivered in this fashion. To encourage promoters to work in this way all instances of collaborative working are rewarded with a 30% reduction of the permit fee.

Table 8.2 indicates works where collaborative working arrangements were undertaken by both external and internal works promoters. Data from Year one may be questionable given such a low figure and this tallies with information that suggested the previous version of EToN made recording of collaborative work difficult.

Table 8.2 – Collaborative work since start of GMRAPS yearly comparison.

	Year 1	Year2	Year 3
Days occupation all works	299,836	380,059	329,740
Days of collaborative work	14	759	775
Days collaborative work as a % of potential days	0.00%	0.20%	0.24%

Analysis

This area of the scheme needs improvement as there is only a slight increase from Year 2. However some notable examples of collaborative works during year 3 of the scheme include:

Cross Street, Manchester

In late 2013 a number of Utilities started to plan service diversions to facilitate Metrolink's 2nd city crossing of Manchester City Centre. Working closely together the Utilities involved along with Transport for Greater Manchester and Manchester City Council created and installed a number of multi-utilities trenches during 2014, in order to manage the project more efficiently in high amenity areas.

The trenches were used to relocate Electric, water, wastewater, gas and telecom services diverted by a the new tram route. The Utilities also shared traffic management as part of the project which included temporary bridge structures to maintain traffic and pedestrian flow in the busy Manchester city centre.

Mancunian Way, Manchester

In August 2015 a 40 foot sinkhole opened up in the east bound carriageway following heavy rain, washing away the road and a 100 year old sewer beneath. Manchester Council worked with United Utilities initially to stabilize the immediate area and assess the area. A £6M major engineering project was then initiated by bypassing a 130 metre stretch of sewer beneath the road.

Whilst United Utilities had the road closed to complete repairs, National Grid came in and renewed over 50 metres of new gas pipeline under the same traffic management.

The project is the biggest emergency sewer repair that United Utilities has ever undertaken involving the excavation of 10,400 tonnes of sandstone whilst temporally diverting 500 litres a second of wastewater past the works.

The final stage of the works was carried out in June 16 and involved Manchester City Council carrying out their annual maintenance inspection and the repainting of road markings under the same Traffic Management.

Whilst permit authorities try to encourage collaborative works as much as possible, it is the experience of some Authorities that there is still a certain amount of reluctance from utility promoters to work collaboratively.

It would appear that the main reason for this revolves around Health and Safety issues (i.e. traffic management, insurance liability, defects and S74 over runs).

9. Conclusion

Significant progress has been made on addressing the actions following the Year 1 report and these are detailed below:-

Action1 - Cross boundary co-ordination and works planning.

Progress

The introduction of the Key Route Network (KRN) in April 16 has enabled GMRAPS to improve how strategic routes on corridors through different Authorities are managed. Several weekly assurance meetings with Bus and Urban Traffic Control representatives are held to identify and mitigate and potential issues with proposed works. By utilising TfGM's control centre the progress of major works are monitored and reported to mitigate and communicate to all stakeholders any congestion associated with works as they progress.

Action 2 - Forward planning and communications around the extent, nature and disruption resulting from works.

Progress

Work has been undertaken to encourage more Promoters to submit forward planning notices in addition to statutory Provisional Advance Authorisation 3 month period. A few Authorities and Utilities are currently submitting forward planning notices up to a year in advance of works, it is hoped through awareness and promoting the use of Forward Planning Notices more advance notice will be given.

Action 3 - Highway Authority permitting their own works to ensure consistency across GM.

Progress

There has been an improvement in the permitting of the Highway Authorities own works across Greater Manchester. The publishing of the weekly automated road works bulletin direct from the GMRAPS system is having a positive effect on ensuring the information within GMRAPS is valid and we still are working closely with one Authority to improve standards to ensuring higher volumes of their own works are submitted.

Action 4 - The potential to increase and improve collaborative working between districts.

Progress

There has been an increase from the year one figures and the plan is to build on the Year 2/3 figures. Early planning on projects such as the Trafford Centre Metrolink extension will ensure opportunities to collaborate are maximised to minimise congestion.

Action 5 - Further work also needs to be undertaken to develop and improve the operational reporting of the central permitting system to ensure accurate and effective management information is provided to all parties to drive further improvements.

Progress

In comparison with the GMRAPS Year One report, improvements have been made in the data available as our IT systems now support a wide range of operational reporting both in our yearly data and our weekly and monthly reporting to all partners and stakeholders.

The additional successes of the Greater Manchester Road Activity Permit Scheme in the 3rd year of operation are;

- A financial indication of total time saving of works carriageway occupation on all roads achieved by saving on average £305.09 per each Highway works significantly reduced delay costs to the GM economy.
- There has been a reduction in the average number of days of occupation of all works types by an average of 3 days.
- The opportunity to manage Highway works through conditions to ensure they are carried out at a period of least disruption on the carriageway has had a year on year increase.
- A total reduction by 1 day of the average duration of works that utilise Temporary lights, reducing the inconvenience to the road user.
- The scheme consistently considers all permit applications with around 7% of both Utilities and Authority applications refused in Year 3.
- Duration extension numbers are consistent for both Utilities and Authorities with 13% of permits requiring duration extensions, with around 98% of duration extensions granted for both street works and works for road purposes.
- Enforcement of works seems constant with the FPN issue rate is consistent with last year at 7%.

9.1 Recommendations for the future

Whilst the management of highway by both Highway and Transport Authorities has improved since the introduction of GMRAPS, it is recognised that there are some improvements still to be made.

GMRAPS has enabled the Greater Manchester region to better co-ordinate the timing of highway works on the same part of the road at the same time, thereby minimising their impact on motorists and other road users and whilst the number days of collaborative work has increased since the introduction of these scheme we still would like to see higher levels of collaborative work and use of extended working hours, to maximise the amount of time the highway is available for use.

GMRAPS has improved the management and communication of all works on the road network and ensured Greater Manchester's highways are made available to the travelling public and businesses for more of the time. However further improvements can be made to improve the validity of the information within GMRAPS and build on the positive action by some Greater Manchester Authorities to integrate live GMRAPS data into travel planning websites to improve the overall communication of proposed work to all stakeholders.

Over the course of GMRAPS it has been identified that incidents and works on locally managed roads will contribute to delays on the Strategic Road Network (SRN) and equally works on the SRN will cause delays on locally managed roads both through traffic queueing across both networks and through traffic re-routing from one network to another. Recommendations are required to take account of this along with ways of having a positive effect on reducing the number of times the carriageway is occupied and reduce the costs for the works Promoter.

The following actions following Year 3 are therefore proposed;

Action 1

Continue to work with all work Promoters especially regarding works for road purposes in improving the quality, timeliness and validity of information through integrating live GMRAPS.

Action 2

Encourage all Promoters to engage in collaborative works where appropriate.

Action 3

Continue to work with all Promoters on improving the quality of reinstatements and the quantity of 1st time reinstatements.

Action 4

Improve how this information is distributed to ensure the right information is given to the right people at the right time for the right purpose so informed decisions can be made to make travel easier in Greater Manchester.

Action 5

Proactively manage the relationship with Highways England (HE) through the regular road space occupancy reassurance meetings where the group will review data present in both GMRAPS and HE systems to mitigate impact and increase network availability.

Action 6

Ensure that any future published review will ensure that future benefits of scheme calculations are undertaken which looks at the costs of works at traffic sensitive times compared to none traffic sensitive times in addition to term time compared to school holidays. These will provide evidence to support decisions on the timetabling and phasing of works.

Action 7

Encourage more Promoters to use the attachment function in EToN to attach traffic management plans to the permit as appropriate to improve coordination and communication to increase the number of permits granted first time.

Action 8

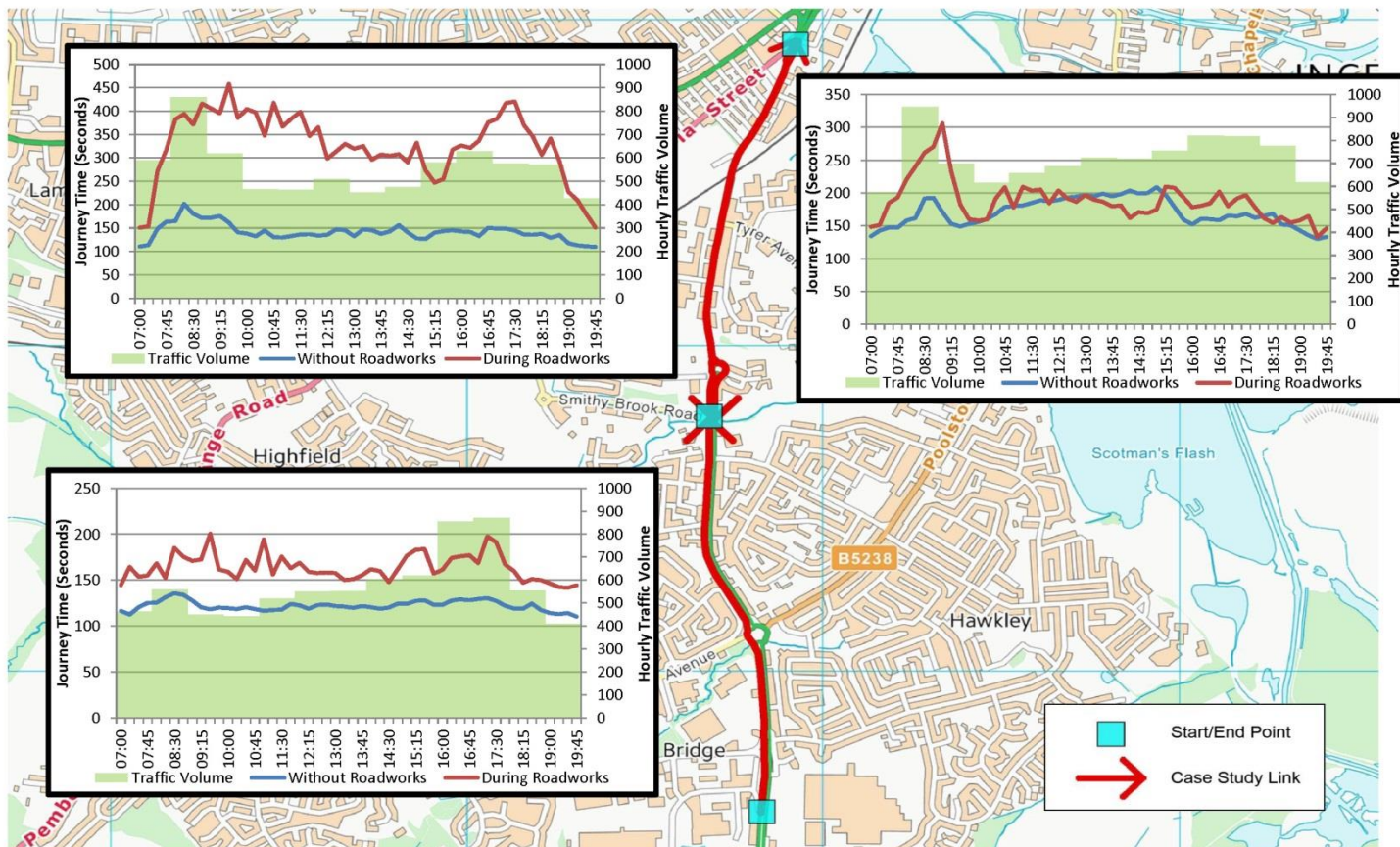
Investigate why the duration of Immediate (Emergency) and standard works are increasing also to ensure sites where these types of works are undertaken are not leaving the site occupied for unnecessary amounts of time on Key Routes.

Appendix

A49 Warrington Road

Date November 2015
 Address A49 Warrington Road
 L#A#Ref Wigan 1263210
 Works Type STANDARD
 Traffic Management TWO-WAY SIGNALS

Estimated Daily Cost of Delay
 £5,233.93



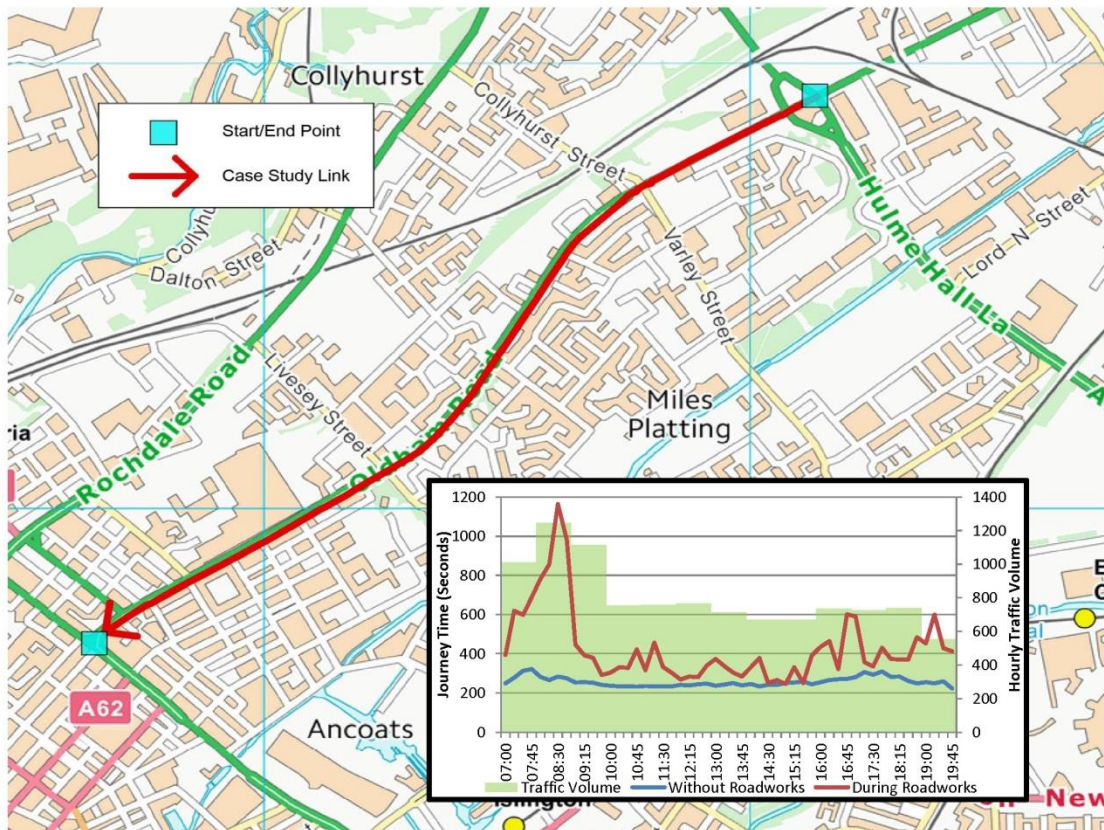
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Appendix

A62 Oldham Road

Date	February 2016
Address	A62 Oldham Road
L#A#Ref	Manchester 1232214
Works Type	MAJOR
Traffic Management	ROAD CLOSURE

Estimated Daily Cost of Delay
£5,801.43



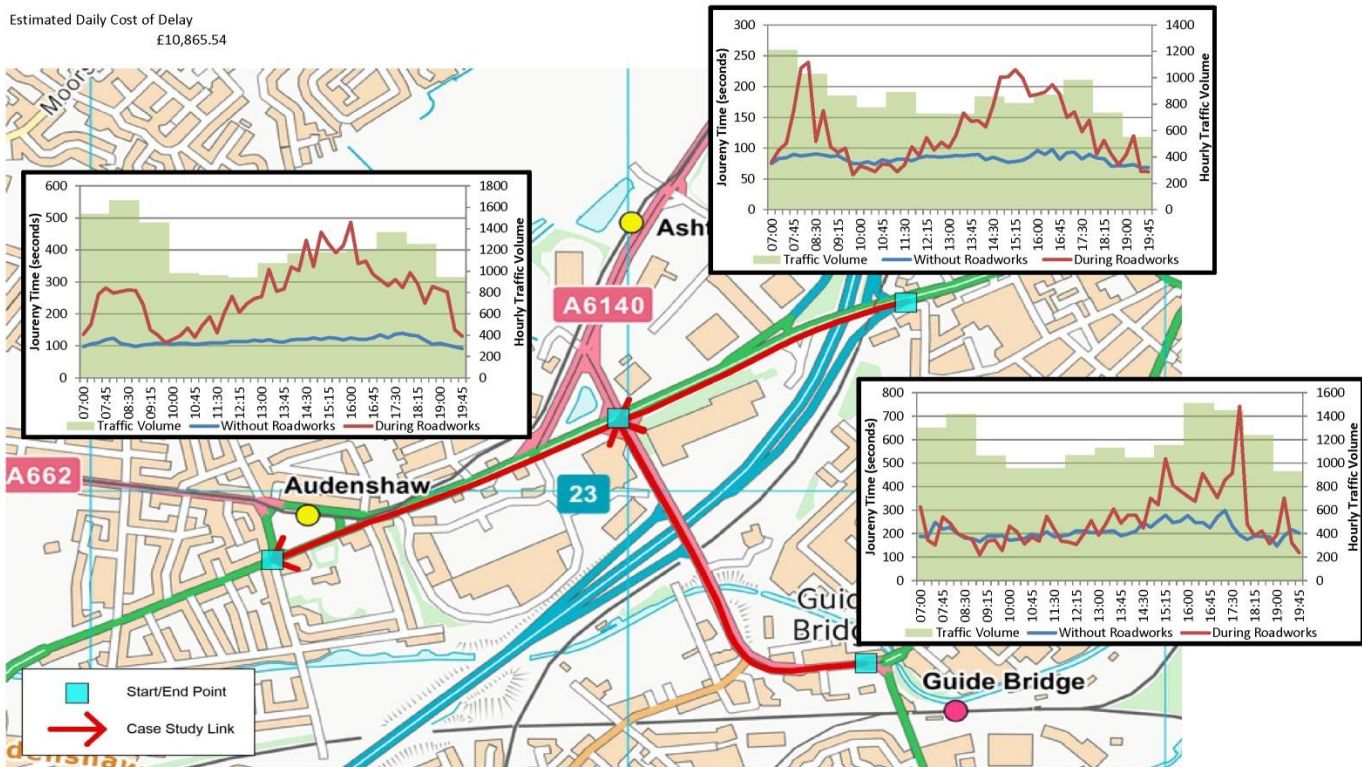
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Appendix

A635 Manchester Road

Date March 2016
Address A635 Manchester Road
L#A#Ref
Works Type Standard
Traffic Management Lane Closure

Estimated Daily Cost of Delay
£10,865.54



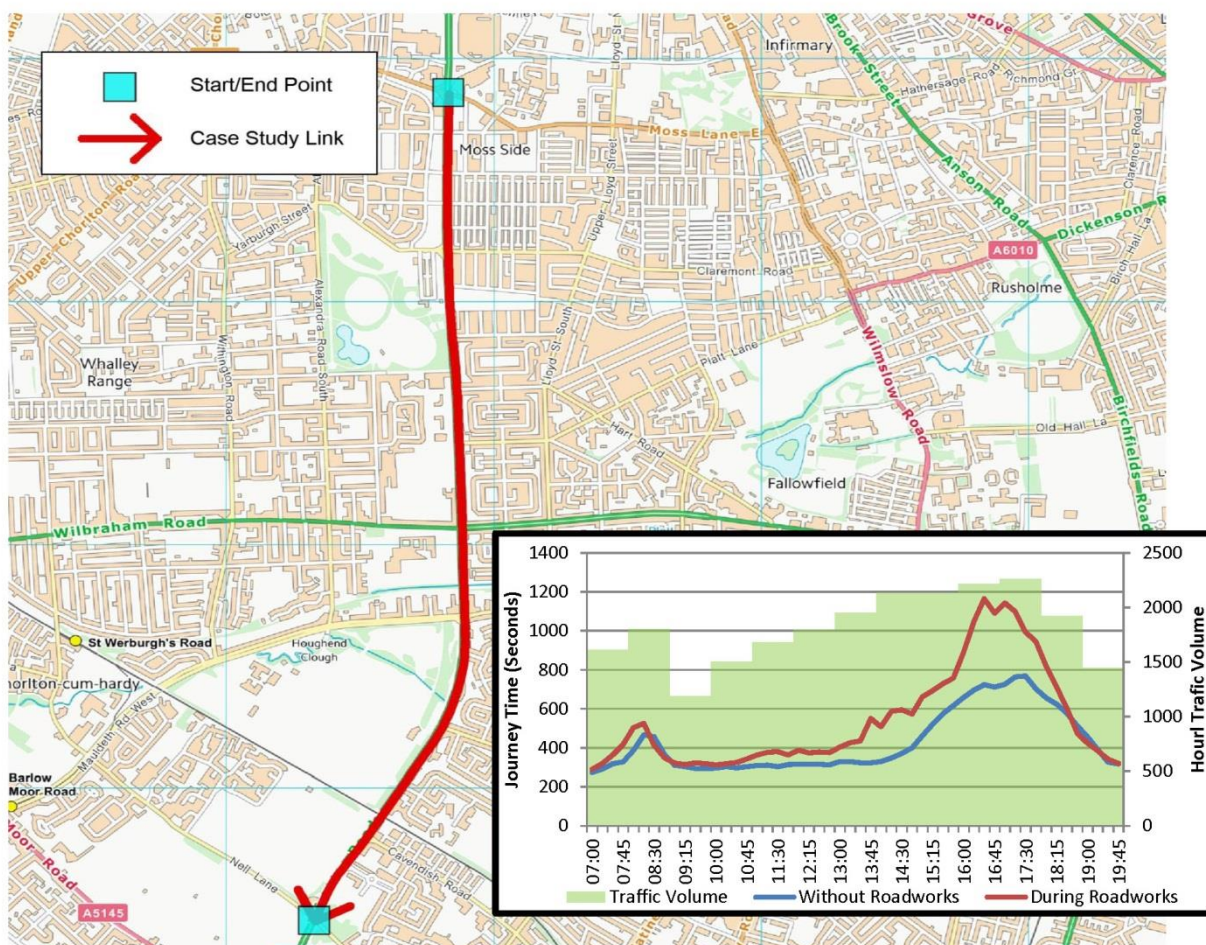
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Appendix

A5103 Princess Road

Date October 2015
Address A5103 Princess Road
L#A#Ref 1219360
Works Type MAJOR
Traffic Management LANE CLOSURE

Estimated Daily Cost of Delay
£8,829.21



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