

Transport for London Lane Rental Scheme Interim Monitoring Report Oct 2013 to Jun 2014

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0. Document Control

0.1. Author(s)

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0.2. Document Summary

This document provides updated information on the impacts of the Transport for London Lane Rental Scheme for the period 1 October 2013 to 30 June 2014.

0.3. Document History

Version	Date	Changes since previous issue
0.1	19/02/2015	First draft
0.2	23/02/2015	Second draft – minor changes
0.3	02/03/2015	Third draft – minor changes
1.0	24/03/2015	Final – minor changes

0.4. Reference Documents

Transport for London Lane Rental Scheme fv Submission
TLRS Cost Benefit Analysis v2.1, January 2012
TLRS First Annual Monitoring Report v0.5, February 2014
Consultation on the update to TLRS, February 2014

0.5. Distribution

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0.6. Document Quality Assurance

Step	Step Description	Undertaken by	Date	Remarks
1	First draft 0.1	JC	19/02/2015	
2	Second draft 0.2	JC	23/02/2015	
2	Third draft 0.3	HK & GOT	02/03/2015	
3	Fourth draft 0.4	JC	24/03/2015	

1. Executive Summary

The Transport for London Lane Rental Scheme (TLRS) was introduced on 11 June 2012, and was designed to minimise disruption due to roadworks and streetworks in specified traffic-sensitive locations by applying a daily charge for each day that the street is occupied by the works thus providing all activity promoters with an incentive to minimise their occupation of the street at traffic-sensitive times at the most traffic-sensitive locations.

On 1 July 2014, following thorough analysis and stakeholder consultation, the areas covered by the TLRS were changed to ensure the scheme continued to cover the areas where it will bring about the most benefit. As a result of these changes, from 1 July 2014 onwards the TLRS has applied to 56 per cent of the TLRN.

Following on from the TLRS First Annual Monitoring Report it was decided that future TLRS reporting should be aligned to April to March reporting to correspond with other reports produced by Transport for London (TfL). In order to achieve this with no gaps in monitoring a report covering the 18 month period 1 October 2013 to 31 March 2015 will be released in 2015, after which reporting will be yearly (from 1 April to 31 March). This report is intended as an interim update on the performance of the TLRS before the release of the 18 month report, and covers the nine month period 1 October 2013 to 30 June 2014, up until the date when the coverage of the TLRS areas changed. The results in this report will be compared to the results from 1 July 2014 to 31 March 2015 in the subsequent 18 month report to assess the impact that changing the TLRS areas has had.

Analysis has shown that for the period 1 October 2013 to 30 June 2014, compared to the comparable pre-TLRS baseline:

- 98 per cent of TfL works and 88 per cent of utility works taking place in TLRS areas avoided incurring a TLRS charge
- There was an 18 per cent increase in planned utility works taking place overnight in TLRS areas (compared to an 11 per cent increase in non-TLRS areas)
- 74 per cent of 'Lane Rental work days' were avoided after early engagement between TfL and utilities. This shows that TfL is taking an active role in ensuring that works promoters' exposure to TLRS charges is minimised, while ensuring the number of days of works during traffic-sensitive times is kept to a minimum
- The total number of utility works taking place fell by 15 per cent in TLRS areas (compared to just a 6 per cent decrease in non-TLRS areas)

- There was an observed 42 per cent reduction in the hours of serious and severe disruption due to planned roadworks in TLRS areas (compared to just a 2 per cent reduction in non-TLRS areas)
- The total number of planned works in TLRS areas resulting in serious and severe disruption reduced by 45 per cent
- The change in journey times in the AM peak was 4.5 per cent better in TLRS areas than in non-TLRS areas, with minimal difference in the PM peak
- The change in journey time reliability (JTR) in the AM peak was 0.5 per cent better in TLRS areas than in non-TLRS areas
- There was a 10 per cent increase in the average monthly number of days of disruption avoided from collaborative works.

2. Introduction

The TLRS was introduced on 11 June 2012, applying to 57 per cent of the TLRN (Transport for London Road Network) and was designed to minimise disruption due to roadworks and streetworks in specified traffic-sensitive locations by applying a daily charge for each day that the street is occupied by the works. The daily charge is not applied if the works take place outside traffic-sensitive times. Following analysis and stakeholder consultation the roads covered by the TLRS were changed to ensure the scheme continues to cover the areas where it will bring about most benefit. The new areas took force on 1 July 2014 and as a result, the TLRS currently covers 56 per cent of the TLRN.

The TLRS provides a mechanism for providing all activity promoters with an incentive to change behaviour and minimise their occupation of the street at traffic-sensitive times at the most traffic-sensitive locations. These locations were chosen primarily based on an algorithm which was designed to determine those areas on the TLRN which are the most susceptible to disruption from roadworks. The same permitting regime is applied to all works on TLRS and non-TLRS segments.

The TLRS charge bands are as follows:

- *Charge Band 1*: £800 a day; charging times typically are between 06:30-10:00 and 15:30-20:00 Monday to Friday and 12:00-18:00 Saturdays and Sundays
- *Charge Band 2 (segments)*: £2,500 a day; charging times typically are 06:30-22:00 Monday to Friday and 12:00-18:00 Saturdays and Sundays
- *Charge Band 3 (pinch points)*: £2,500 a day; charging times typically are 07:00-20:00 Monday to Friday and 12:00-18:00 Saturdays and Sundays

The TLRS First Annual Monitoring Report was released in February 2014 and showed that the scheme had been largely successful in its primary objectives. The report covered the period from 1 October 2012 to 30 September 2013 and provided a comparison with data from 1 October 2010 to 30 September 2011. This was in order to avoid conflict with the Clearway 2012 works embargo which was implemented to restrict works taking place on the Olympic and Paralympic Route Networks (which had a huge impact on the number of works taking place inside TLRS areas during that period). This ensured the Olympic period was excluded from any analysis and provided a direct comparison of the impact of the scheme.

Following production of the initial report it was decided that future reporting would cover 1 April to 31 March in order to align future lane rental reports with others produced by TfL. In order to achieve this with no gaps in reporting it has been decided that a report covering the 18 month period 1 October 2013 to 31 March 2015 will be released in summer 2015 (after which reporting will be yearly from 1 April to 31 March). The 18 month report will be split into two separate nine month sections: 1 October 2013 to 30 June 2014 and 1 July 2014 to 31 March 2015. With the TLRS

areas being changed on 1 July 2014, this eliminates any overlap of different TLRS areas in reporting and allows for a comparison between the new TLRS areas and the previous.

This report serves as an interim update prior to the aforementioned 18 month report, and covers the nine month period 1 October 2013 to 30 June 2014, up to the end of operation of the previous TLRS areas. It should be noted that because the monitoring period of this report covers nine months as opposed to 12 months (as in the TLRS First Annual Monitoring Report), some baseline periods have needed to be changed from those reported in the initial report in order to allow for a direct comparison. Figure 1 offers an illustrative explanation of the changes to the monitoring periods outlined above.

Figure 1: Changes to reporting periods since the TLRS began

2010			2011			2012			2013			2014			2015			2016											
October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	February	March
Baseline (Annual Reports)						Olympic Games			1st Report (Annual)			2nd Report p1			2nd Report p2			3rd Report (Annual)											
Baseline (2nd Report p1)			Baseline (2nd Report p2)																										
Original Lane Rental Areas												New Lane Rental Areas																	

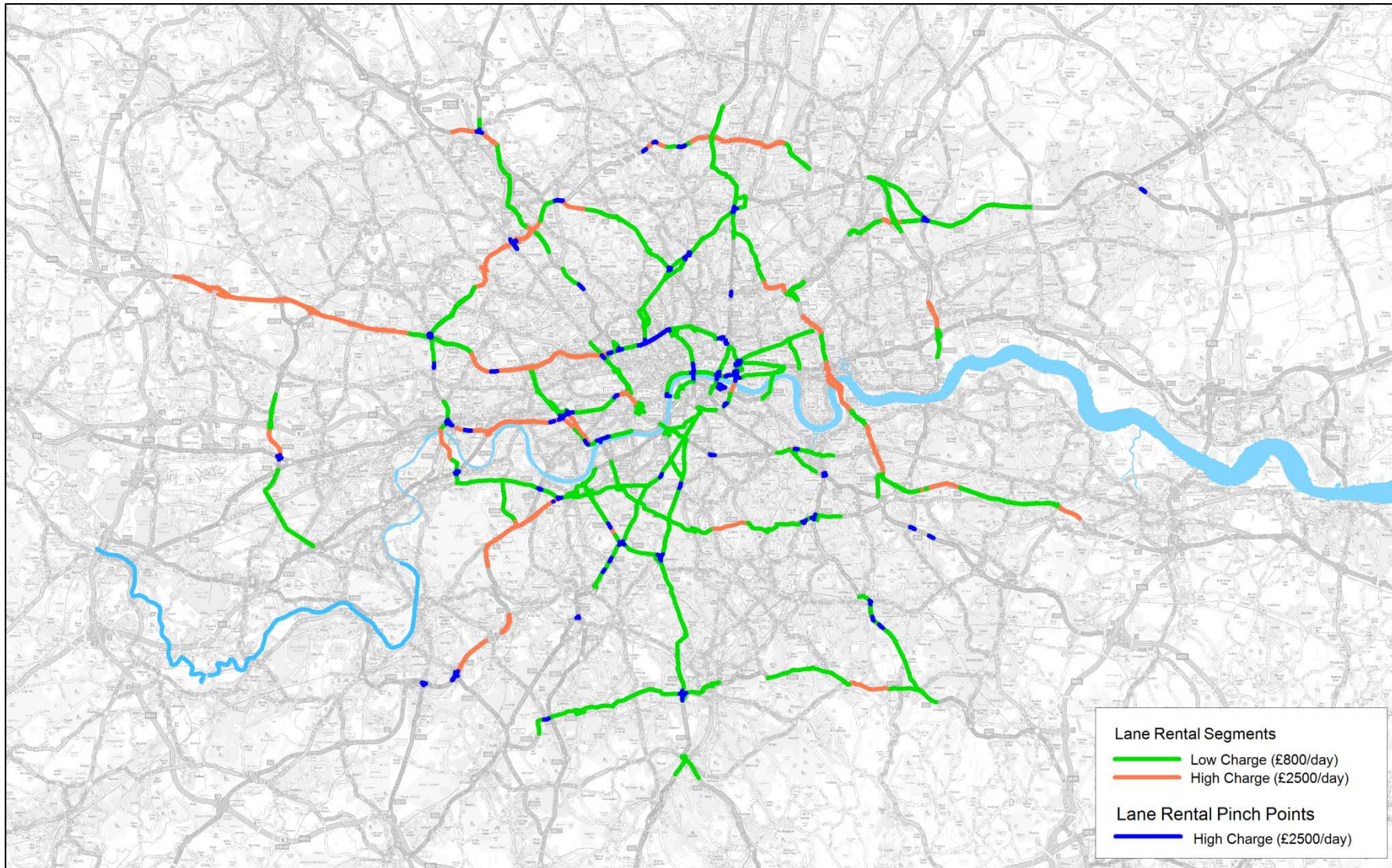
Before 1 July 2014 (including the period covered by this report) the TLRS covered 57 per cent of the TLRN; the remaining 43 per cent of the TLRN is categorised ‘non-TLRS’ in the analysis outlined below.

There are two major caveats to this analysis. Firstly, there is an assumption that all things apart from the implementation of the TLRS are equal across the TLRN in terms of network outcomes. Secondly, TfL also operates Congestion Management Areas (CMAs) where resources are concentrated as part of the ‘smoothing traffic’ agenda. Up until 30 June 2014 the CMAs were located on the same traffic-sensitive areas of the network as the TLRS, and therefore the relative contribution of the scheme as measured by journey times and journey time reliability (JTR) cannot be separated from CMA measures in this report. From 1 July 2014 onwards, with the TLRS areas changing, CMAs and the TLRS were no longer located on the exact same parts of the network.

As part of the preparation for the launch of TLRS, TfL and the Department for Transport (DfT) jointly funded a research project into innovative methods of reducing the disruption from road works. The outputs of this project have included a faster curing concrete specification, improved plating products covering larger areas, promoting greater use of the ‘Core and Vac’ technology which utilises keyhole surgery techniques to reduce works durations and investigation of bridging over large excavations. These were all shared with works promoters to assist in minimising the disruption on the network and reducing or avoiding TLRS charges. The 57 per cent of the TLRN covered by the TLRS is shown in Figure 2.

London Streets

Figure 2: Lane Rental areas by charge band - June 2012 to June 2014



3. Objectives of the TLRS

The TLRS seeks to contribute to JTR, by encouraging the undertaking of works at the least traffic-sensitive times, and an early completion of works. It also applies the following guiding principles:

- safety must be ensured;
- inconvenience to people using a street, including in particular people with a disability, must be minimised.

Other objectives of the TLRS are to:

- treat all activity promoters on an equal basis
- promote behaviour change to minimise the duration of occupation of the street at the busiest locations at traffic-sensitive times on the network
- minimise the number of works taking place during traffic-sensitive times, and contribute to JTR as required under the Mayor's Transport Strategy.

TfL will measure these objectives so as to evaluate whether they are being met¹. Following on from the TLRS First Annual Monitoring Report, this report is an interim update of the continued impact that the TLRS has had since its implementation. The report scrutinises the effect of the scheme as a whole.

4. Impact on the road network

An objective of the TLRS is to contribute to JTR as part of the Mayor's traffic smoothing initiative by improving travel conditions on the road network. Another benefit that we could expect is an improvement in journey times in TLRS segments.

JTR is measured as the percentage of nominal 30 minute journeys completed within 35 minutes. For example if a corridor can be managed such that nine out of 10 journeys can be completed within the expected journey time then the corridor would be considered 90 per cent reliable. TfL's approach to measuring JTR on the TLRN is based on using Automatic Number Plate Recognition (ANPR) camera data. Journey time data for the TLRN is taken from London Congestion Analysis Project (LCAP) ANPR cameras.

¹ TfL Lane Rental Scheme fv Submission

4.1. TLRN journey time reliability

A comparison of JTR for the TLRS and non-TLRS segments of the TLRN has been performed. The results are summarised in Table 1. The peak period definitions used here and throughout this report are as follows:

- AM peak: 07:00 – 10:00
- Inter peak: 10:00 – 16:00
- PM peak: 16:00 – 19:00
- Overnight: 19:00 – 07:00

Table 1: Change in JTR on the TLRN

Change in Journey Time Reliability												
	Oct 10 - Jun 11				Oct 13 - Jun 14				% Point Difference 10/11 to 13/14			
	AM Peak	Inter Peak	PM Peak	Over night	AM Peak	Inter Peak	PM Peak	Over night	AM Peak	Inter Peak	PM Peak	Over night
TLRS Segments	88.7%	91.1%	87.2%	95.9%	88.4%	91.5%	85.5%	96.3%	-0.3%	0.4%	-1.7%	0.4%
Non-TLRS Segments	90.2%	92.1%	89.8%	95.5%	89.4%	92.3%	88.5%	95.4%	-0.8%	0.1%	-1.4%	-0.1%
TLRS Impact									0.5%	0.3%	-0.3%	0.5%

There has been in recent times a general deterioration of JTR on the TLRN, largely brought about by an increase in traffic flows over the past few years. This is evidenced in Table 1, which shows declining JTR in both the AM peak and PM peak across the entire TLRN. However, it can be seen from the TLRS impact that despite this, JTR deteriorated to a slightly lesser extent in TLRS areas than non-TLRS areas in the AM peak, Inter peak and overnight.

There was a slight decrease in the TLRS impact of JTR in the PM peak of 0.3 per cent. While very minimal, there are a few explanations to this decrease. TLRS areas have around 10 per cent higher flow than non-TLRS areas (Table 3) - a significant additional volume. Despite flow increasing across the TLRN, PM peak flow is nearer to full capacity in TLRS areas (which have been demonstrated to be of higher flows and more sensitive to traffic and network changes – the reason they have been designated as TLRS areas above the non-TLRS areas). TLRS areas have therefore been more adversely affected by the network-wide JTR deterioration and flow increase. In addition to this, there has been a measured increase in the number of works taking place inside TLRS areas (Table 6) which has also contributed to this effect. Despite this increase in the number of works in TLRS areas, the TLRS impact on JTR was positive in the AM peak and only marginally negative in the PM peak.

A study has also found that total hours of non-roadworks related serious and severe disruption also rose in the PM peak in TLRS areas by 189 per cent over the two periods monitored. This is compared to an increase of only 17 per cent in the AM

peak and only 24 per cent in the PM peak in non-TLRS areas. This indicates that there were factors leading to disruption and outside the control of the TLRS increased to a greater extent in TLRS areas in the PM peak, which contributed to the greater rate of decrease of JTR in the same areas and time period

4.2. TLRN journey times

A comparison of TLRN journey times has also been performed. Data has been analysed for each time period throughout the day and has been separated into TLRS and non-TLRS segments.

Table 2: Change in journey times on the TLRN

Change in Average Journey Times (mins/km)												
	Oct 10 - Jun 11				Oct 13 - Jun 14				Change 10/11 to 13/14			
	AM Peak	Inter Peak	PM Peak	Over night	AM Peak	Inter Peak	PM Peak	Over night	AM Peak	Inter Peak	PM Peak	Over night
TLRS Segments	2.4	2.2	2.7	1.3	2.5	2.3	2.9	1.3	3.6%	3.8%	7.7%	0.6%
Non-TLRS Segments	2.1	2.1	2.3	1.2	2.3	2.2	2.4	1.3	8.1%	2.6%	7.5%	3.4%
TLRS Impact									-4.5%	1.2%	0.2%	-2.7%

As with JTR, journey times have deteriorated across the TLRN. However, despite this increase, journey times were 4.5 per cent better in TLRS areas than in non-TLRS areas in the AM peak. Journey times were slightly worse in TLRS areas in the inter peak by 1.2 per cent which can be expected with more works moving to take place during this period to avoid more traffic-sensitive times as a result of the scheme, with nearly two thirds of the TLRS being classified as low charge and therefore no charge applied for work taking place in the inter peak.

In the PM peak there was very little difference in the increase in journey times between TLRS and non-TLRS areas. It is likely that the benefits felt in the AM peak were not extended to the PM peak due to the reasons outlined in section 4.1 above – namely a slight overall increase in roadworks, the fact that Lane Rental areas by nature are of a higher sensitivity and have higher levels of flow, and the observed significant increase in non-roadworks related serious and severe disruption on the PM peak in TLRS areas.

4.3. Vehicle flows

Table 3 shows the average 24 hour vehicle flows over the monitoring period and baseline as measured from Automatic Traffic Counters (ATCs) located in TLRS and non-TLRS segments.

Table 3: Average 24 hour vehicle flows

Average 24 Hour Vehicle Flow			
	Oct 10 – Jun 11	Oct 13 – Jun 14	% change
TLRS Segments	12,241	12,461	2%
Non-TLRS Segments	11,028	11,281	2%

Average flows increased uniformly by 2 per cent across both TLRS and non-TLRS segments, indicating that differences in journey times and JTR between TLRS and non-TLRS areas are not as a result of flow variations. The figures in Table 3 also illustrate that on average TLRS areas have around a 10 per cent higher flow than non-TLRS areas. This is logical, as vehicle flow was one component of the formula used to originally calculate TLRS areas. This also highlights that despite average flows rising by the same percentage in both TLRS and non-TLRS areas, by having substantially higher levels of flow, TLRS areas are more susceptible to congestion and disruption as a result of incidents such as roadworks.

4.4. Serious and severe disruption

A reduction in the number of works taking place in traffic-sensitive times should lead to a reduction in the amount of disruption taking place on the road network. The number of hours of serious and severe disruption associated with planned road works has been obtained using incident data and is summarised in Table 4. The results have been separated into works undertaken by the highway authority (TfL) and those by utility companies, for both TLRS and non-TLRS segments. Other causes of disruption such as accidents and congestion have been excluded from this analysis as the TLRS targets road works only. As was done in the First Annual Monitoring Report, data from unplanned works has also been excluded as the number of unplanned works was very small and considered to be unreliable.

Serious disruption is defined as traffic congestion that is unusual for the time of day at a location or in an area. Traffic has been stopped for less than five minutes but in excess of the red signal time for traffic signals operating on the road. Traffic is queuing that is longer than normal for the time of day and incidents within a short space of time cause inconvenience to road users. Severe disruption is defined as for serious disruption, except traffic has been stopped for more than five minutes, and incidents quickly cause significant inconvenience of at least an additional 20 minutes to road users' journeys.

The disruption data analysed below is taken from both the London Traffic Information System (LTIS) and the Traffic Information Management System (TIMS). Disruption data is only available periodically; therefore the period of analysis runs from financial year period 8 to period 4, to align as best as possible with the October to June monitoring period.

Table 4: Hours of serious and severe disruption due to planned works

Total Serious & Severe Disruption Associated with Planned Works (Hours)			
	P8 10/11 to P4 11/12	P8 13/14 to P4 14/15	% Change
TLRS	363.0	209.8	-42%
Highway authority	225.6	190.3	-16%
Utilities	137.5	19.5	-86%
Non-TLRS	17.1	16.7	-2%
Highway authority	6.1	3.7	-40%
Utilities	11.0	13.0	18%
TLRN-wide	380.1	226.5	-40%

The results show that serious and severe disruption associated with planned roadworks fell by 42 per cent inside TLRS segments in the periods monitored. Disruption associated with works fell for both those carried out by utility companies (86 per cent) and by the highway authority, TfL (16 per cent). This suggests that works in TLRS areas have been moved to take place outside of traffic-sensitive times thereby causing less disruption.

Table 4 also shows serious and severe disruption associated with planned works in non-TLRS segments. While disruption associated with TfL works fell by 40 per cent, it increased by 18 per cent for utility works. Overall, disruption in non-TLRS areas decreased by only 2 per cent.

As shown above, the amount of disruption is directly associated with the number of works taking place. The works used for the analysis above are only those which resulted in serious and severe disruption, and they are therefore a subset of the works described later, in Table 6. Table 5 shows the changes to the numbers of works associated with serious and severe disruption.

Table 5: Number of works resulting in serious and severe disruption

Total Number of Planned Works Resulting in Serious & Severe Disruption			
	P8 10/11 to P4 11/12	P8 13/14 to P4 14/15	% Change
TLRS	62	34	-45%
Highway authority	40	28	-30%
Utilities	22	6	-73%
Non-TLRS	7	1	-86%
Highway authority	2	0	-100%
Utilities	5	1	-80%
TLRN-wide	69	35	-49%

The number of works causing serious and severe disruption fell by 45 per cent across the TLRS. This is largely in line with the change to the amount of serious and severe disruption over the TLRS shown in Table 4.

5. Has the TLRS changed behaviour?

One of the objectives of the TLRS is to promote behaviour change among works promoters in order to minimise disruption on the road network during traffic-sensitive times of day.

5.1. Number of works taking place

Using data obtained from the Local Streetworks Register (LSWR), a comparison of the number of works taking place inside and outside of TLRS segments has been performed and a summary of the data is provided below in Table 6. The results have been separated into works undertaken by the highway authority (TfL) and those by utility companies.

Table 6: Number of works on the TLRN

Number of works completed on the TLRN			
	Oct 10 to Jun 11	Oct 13 to Jun 14	% change
Transport for London total	19,631	20,505	4%
TLRS segments (Transport for London)	13,221	14,726	11%
Non-TLRS segments (Transport for London)	6,410	5,779	-10%
Utility companies total	8,286	7,256	-12%
TLRS segments (utility)	5,707	4,830	-15%
Non-TLRS segments (utility)	2,579	2,426	-6%
Total TLRS segments	18,928	19,556	3%
Total Non-TLRS segments	8,989	8,205	-9%
Grand total	27,917	27,761	-1%

NB: Table 6 refers to activity on the TLRN inside/outside TLRS areas, regardless of time of day; it does not refer to activity inside/outside of traffic sensitive times.

It can be seen that the total number of works undertaken on the whole of the TLRN remained largely the same, falling by only 1 per cent over the periods studied. While works in non-TLRS areas decreased by 9 per cent, there was a 3 per cent rise in the number of works taking place in TLRS areas. This is largely due to an 11 per cent increase in TfL works taking place in TLRS areas, whereas utility works in these areas decreased by 15 per cent.

The rise in numbers of TfL works undertaken in TLRS areas is likely to be a result of an increased investment programme that is underway and has been scheduled for the next few years. This includes but is not limited to TfL’s Roads Modernisation Plan, the improvement of cycling infrastructure and junctions and an increase in the number of Split Cycle Offset Optimisation Technique (SCOOT) sites and traffic signal modernisation.

It is worth noting that, while there was an 11 per cent increase in TfL works in TLRS areas, 98 per cent of these works did not attract a Lane Rental charge (as shown in Table 10). This indicates that while a relatively large number of TfL works took place, they are generally restricted to overnight or ‘off-peak’ hours (i.e. less traffic-sensitive times of day).

5.2. Changes to planned carriageway works

Information is also available on the total number of days that were approved for planned carriageway works undertaken by utility companies in the period studied. This data comes from a subset of that used in Table 6 and does not represent all works which took place in TLRS areas. The number of Lane Rental days applied for and approved through works coordination processes is available and has been examined below. Lane Rental days are those where works took place during chargeable hours. As they are an accumulation of works by all utilities, one day could be counted multiple times.

Table 7: Planned carriageway utility works on TLRS segments (Lane Rental days)

Planned carriageway utility works on TLRS segments (Lane Rental days)		
	Oct 13 to Jun 14	
	Total	Proportion
Total requested Lane Rental days	3,900	-
Agreed Lane Rental days	1,003	26%
Lane Rental days saved	2,897	74%

Table 7 shows that the number of Lane Rental days saved between October 2013 and June 2014 equated to 74 per cent of all requested Lane Rental days. Of the total 3,900 Lane Rental days that were requested, only 26 per cent were approved. This is due to a process undertaken by TfL, liaising with the promoter to reduce the length of time that the carriageway is occupied, especially in traffic-sensitive times and could typically include changing works timings to overnight, off-peak or weekend working – actions that TfL takes on proposed works across the TLRN, in both TLRS and non-TLRS areas.

This demonstrates that TfL is taking an active role in ensuring that works promoters' exposure to Lane Rental is minimised, while also minimising serious and severe disruption by ensuring the number of days that works take place during traffic-sensitive times is kept to a minimum.

5.3. Changes to works in traffic sensitive times

Although the results in Table 7 show that only 26 per cent of requested Lane Rental days were approved, this doesn't mean that the other works did not take place at all – they may have been approved on the condition that they took place during non-chargeable hours. Analysis has been undertaken on any changes to the time of day that the works shown in Table 7 took place.

TfL has been proactive in approaching borough Environmental Health teams to allow extended working hours at night time periods and has already reached an agreement with a number of boroughs. The proportion of works taking place during the day or overnight can be seen in Table 8. These figures are based on a sample of the subset for each monitoring period shown.

Table 8: Proportion of day time or night time planned utility works

Proportion of planned utility works taking place during the day or at night				
		Oct 10 to Jun 11	Oct 13 to Jun 14	% points difference
TLRS areas	Day time	88%	70%	-18%
	Night time	12%	30%	18%
Non-TLRS areas	Day time	88%	77%	-11%
	Night time	12%	23%	11%

Table 8 shows that the proportion of works taking place at night has increased by 18 per cent in TLRS areas following the implementation of the TLRS. Now, 30 per cent of all works take place at night in these areas, reducing the impact that works have on the TLRN during the day. Night time works also increased in non-TLRS areas, albeit to a lesser extent, suggesting that there has been a shift to more night time working by utility companies across the whole TLRN. As the increase was 7 percentage points higher in TLRS areas, this suggests that the TLRS had an impact

on the time of day that works took place, therefore promoting the desired behaviour change. Despite the increase in number of night time works, there have been no reported increases in the proportion of noise complaints from the borough Environmental Health teams.

6. Other benefits of the scheme

As shown above the TLRS has had a positive impact since its implementation. As well as the benefits to JTR and journey times on the road network and the reduction in the number of works taking place, the scheme has influenced wider ways of working.

6.1. Collaborative working among promoters

As shown earlier, the TLRS encourages works promoters to minimise their duration of occupation of the street. One of the ways this can be achieved is through collaborative working, where promoters work within the same traffic management footprint or share trenches in order to avoid having to dig up the road a number of times. By doing this, the amount of disruption on the road network is minimised.

Collaborative works that have taken place across the whole of the TLRN have been examined and are shown in Table 9. While it is not possible to separate out the numbers for the TLRS, these figures give a good indication of changes which have occurred in these segments.

Table 9: Collaborative working figures

Collaborative working			
	Oct 10 to Jun 11	Oct 13 to Jun 14	% change
Average monthly number of collaborative work sites	20	35	81%
Average monthly number of days of disruption avoided	157	173	10%

Table 9 shows that the average number of collaborative works taking place in each month increased by 81 per cent in the monitoring period compared to the same period before the TLRS was implemented. This demonstrates that works promoters are starting to undertake more works in this way.

The average number of days of disruption that were avoided as a result of collaborative working each month increased by 10 per cent, demonstrating the positive impact this has had.

7. The financial impact of the TLRS

Although TLRS charges do not apply 24 hours of the day, the scheme has increased the cost of carrying out works on the TLRN. This can be in the form of charges for undertaking works during traffic-sensitive times in TLRS areas, or as a result of changing working practices to avoid working during these periods of the day.

7.1. Number of works avoiding TLRS charges

The number of works taking place within TLRS segments has been examined. These are works which could have been subject to TLRS charges. Table 10 shows the proportion of works which took place within TLRS locations but avoided attracting a TLRS charge. These numbers are based on actual works that were completed within the reporting periods of 1 October 2013 to 30 June 2014, but prior to formal invoicing taking place.

Table 10: Proportion of works avoiding TLRS charges

Proportion of works in TLRS areas avoiding TLRS charges	
Promoter	Oct 13 to Jun 14
Transport for London	98%
Utility companies	88%

It can be seen that 98 per cent of TfL works and 88 per cent of utilities works did not attract a TLRS charge during the period examined. This includes works that took place in TLRS areas but were planned to take place outside the chargeable, traffic-sensitive hours of the day. It should be noted that works promoters may incur particular costs associated with avoiding working during TLRS chargeable hours, such as additional overtime for staff working at night.

7.2. Number of works incurring TLRS charges

Table 11: Charges recovered between Oct 2013 and Jun 2014 from works incurring a TLRS charge

Sector	No. of works for which charges were recovered	Total charges recovered	% of total charges recovered
Electric	158	£ 561,900	19%
Gas	80	£ 379,700	13%
Network Rail Promoters National	1	£ 800	0%
Telecoms	112	£ 234,700	8%
TfL	121	£ 913,900	32%
Water	193	£ 797,300	28%
Total	665	£ 2,888,300	100%

Table 12: Proportion of charges recovered between Oct 2013 and Jun 2014 in high and low charge bands

Sector	No. of works for which charges recovered	% Low Charges (£800/day)	% High/PP Charges (£2,500/ day)
Electric	158	83%	17%
Gas	80	76%	24%
Network Rail Promoters National	1	100%	0%
Telecoms	112	73%	27%
TfL	121	44%	56%
Water	193	76%	24%

Table 11 and Table 12 relate to the value of TLRS charges recovered within the period 1 October 2013 to 30 June 2014. They do not relate to the number of works taking place in this period that attracted a charge as there may have been charges recovered during this period for works that were undertaken in a previous period.

The total recovered charges over the period amounted to £2,888,300. While TLRS charges were recovered for a greater total number of both water (193) and electric (158) works, it was TfL works (121) that had the greatest monetary amount of charges recovered, with £913,900 over the period monitored. This is because, as seen in Table 12, 56 per cent of TfL works incurred a high TLRS charge (£2,500/day), whereas water and electric works only had 24 per cent and 17 per cent of works resulting in high charges respectively. Network Rail had the lowest proportion of chargeable works with charges recovered for only one instance of works in a low charge band area, amounting to £800; 0.03 per cent of the total across all sectors.

Table 12 shows that the majority of chargeable utility works took place in low charge band areas. This may indicate that in high charge band areas utility promoters are more focused on working outside of traffic sensitive times to avoid the higher daily charge.

8. Summary

The TLRS provides a mechanism for behaviour change among works promoters in order to minimise the occupation of the carriageway by works promoters at traffic-sensitive times of day in TLRS segments. The analysis outlined in this report demonstrates that the scheme has been successful in achieving this goal.

Following the implementation of the TLRS, 98 per cent of TfL works and 88 per cent of utility works avoided attracting a TLRS charge over the period monitored. Further analysis has shown that 30 per cent of works took place at night in TLRS areas, up

18 per cent from before the scheme was implemented and 7 per cent higher than in non-TLRS areas. This demonstrates how promoters are actively avoiding traffic-sensitive times of day since the TLRS began, and therefore avoiding charges. It has also been shown that the majority of utility works that incurred TLRS charges took place in low-charge segments, suggesting that where works are necessary in high-charge segments an effort is being made to work outside of chargeable, traffic-sensitive hours to avoid the higher charge.

Analysis also shows that the total number of working days where works were requested to take place during traffic-sensitive times totalled 3,900. Just 26 per cent of these 'Lane Rental days' were approved, with the majority of the remaining 74 per cent only being allowed to take place outside of traffic-sensitive times. This shows that TfL is taking an active role in ensuring that the number of days that works take place during traffic-sensitive times is kept to a minimum.

Collaborative working among works promoters increased by 81 per cent during this time, which led to a decrease of 10 per cent in the number of days of disruption associated with these works.

This evident behaviour change among works promoters has contributed to improved conditions of the road network. Total hours of serious and severe disruption associated with planned works fell by 42 per cent in TLRS areas, while the number of planned works resulting in such disruption fell by 45 per cent.

While flows have increased by the same percentage in both TLRS and non-TLRS areas, JTR and journey times were both impacted by the scheme. Compared to non-TLRS areas, changes in journey times as a result of the scheme were 4.5 per cent better inside the TLRS in the AM peak, while there was little impact on journey times in the PM peak. This is primarily due to a significant increase in non-roadworks related serious and severe disruption occurring in the PM peak.

The positive impact of the TLRS has managed to balance out the effects of this increase in disruption, so that while there has been a larger PM peak deterioration in journey times and JTR in TLRS areas, this has been limited and no major detrimental effects have been felt as a result. The same is true for JTR, where there was a small 0.5 per cent benefit in the AM peak as a result of the TLRS, but a -0.3 per cent impact in the PM peak. Other contributing factors include an increase in the overall number of works taking place in TLRS areas, and that TLRS areas having on average a 10 per cent higher flow than non-TLRS areas makes them more susceptible to the aforementioned disruption. Journey times increased marginally in the inter peak, though this could be linked to an increased number of works taking place outside of chargeable hours in order to avoid incurring a TLRS charge.

Annex: Financial Summary

Table 13: Financial Summary

£m	01 Apr 12 to 31 Mar 13	01 Apr 13 to 31 Mar 14	01 Apr 14 to 13 Sep 14
Income	1.9	3.6	1.7
Scheme Development & Running Cost	-1.6	-1.4	-0.6
Net Income from Street Works	0.3	2.2	1.1
Opening Reserve	-	0.3	2.5
Net Income from Street Works	0.3	2.2	1.1
Closing Reserve	0.3	2.5	3.6