

Title: Road works: the future of lane rental IA No: DfT00390 RPC Reference No Lead department or agency: Department for Transport Other departments or agencies	Impact Assessment (IA)
	Date: 02/09/2017
	Stage: Consultation
	Source of intervention: Domestic
	Type of measure: Secondary legislation
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Summary: Intervention and Options	RPC Opinion: RPC Opinion status

Cost of Preferred (or more likely) Option 2				
Total Net Present Value	Business Net Present Value	Net cost to business per year (EANDCB in 2014 prices)	One-In, Three-Out	Business Impact Target Status
£1,515.36	£527.67	N/A	N/A	Qualifying provision

What is the problem under consideration? Why is government intervention necessary?

There are around 2.5 million road works carried out in England each year causing significant disruption and delay to road users with delay caused by works estimated to cost more than £4 billion a year. In addition, increased delays increase the likelihood of an accident and lead to greater carbon emissions and pollution. The impact of roads works on road users and wider society is considerably higher for works carried out on the busiest roads at the busiest times.

Lane rental involves charging the promoters who carry out road works during lane rental periods for the time their works occupy the road. Charges are focused on the busiest streets at the busiest times. Two pioneer lane rental schemes have been in operation since 2012 on parts of TfL's road network in London and since 2013 on parts of the network in Kent to find out the effectiveness of reducing the disruption caused by works to road users. The regulations include a 'sunset clause' which means the current schemes will end in March 2019 under the 'do nothing' option.

Government intervention is necessary as a decision is required on the future of these schemes and whether or not to allow other local authorities to introduce them. If Government intervention does not occur, then the current Kent and TfL lane rental schemes will come to an end and, as such, future benefits to road users and wider society will not materialise.

What are the policy objectives and the intended effects?

There are around 2.5 million road works carried out in England each year estimated to cost more than £4 billion a year in delay. As part of work to ensure that road works are effectively managed and coordinated, Transport for London (TfL) and Kent County Council have been operating lane rental on parts of their road network to test its effectiveness as a way of reducing the congestion caused by street and road works. The current designs of the lane rental schemes for Kent and TfL allows them to impose a charge of up to £2,500 for each day their roads are occupied by the works. The charge was set at a level that reflected the costs of congestion caused by the works, and that would encourage works promoters to: reduce the length of time taken to carry out the works; improve planning, coordination and working methods; carry out more works outside of peak times; complete works to the required standard first time. The policy objectives and intended effects of those policies set out in this Impact Assessment are to reduce the negative impact on road users and wider society from road works by encouraging works promoters to reduce the time spent carrying out works on the busiest roads at the busiest times.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

We are consulting on the following four options for the future of lane rental. We are asking for views on all the options. There is no preferred option at this stage as we are keen to keep our options open: Baseline Option (do nothing). This would mean that the London and Kent schemes would end in March 2019 and no new schemes would be permitted.

¹ The DfT is also consulting on an interim measure of removing the existing sunset clause. If this is taken forward, lane rental would not end after March 2019 but at a sensible point in time if it is decided to not continue with the lane rental schemes e.g. when contracts have expired and operations could be wound-down without incurring excessive cost.

Option 1: Retain lane rental as it currently exists but only in London and Kent.
 Option 2: Roll-out lane rental to other local authority areas. The London and Kent schemes would also continue.
 Option 3: Use permit schemes to deliver the key objectives of lane rental. This would involve adding a new 'super permit' for works on the most congested local roads.

We have developed these four options through informal discussions with a small number of stakeholders and because they would be viable and deliverable. These are viewed as the only viable options available. There are no non-regulatory options available that would achieve the same policy outcomes.

Will the policy be reviewed? It will not be reviewed. An independent evaluation of the two pilot schemes has already been carried out by the DfT in 2016.

Does implementation go beyond minimum EU requirements?		N/A		
Are any of these organisations in scope?	Micro No	Small No	Medium Yes	Large Yes
What is the CO₂ equivalent change in greenhouse gas emissions? (Million tonnes CO₂ equivalent)		Traded: N/A	Non-traded: N/A	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible SELECT SIGNATORY: **Date :** Enter a date

Summary: Analysis & Evidence

Policy Option 1

Description: Remove sunset clause and allow only Kent and TfL to continue with their lane rental schemes

FULL ECONOMIC ASSESSMENT

Price Base Year: 2017	PV Base Year: 2019	Time Period Years: 10	Net Benefit (Present Value (PV)) (£m)		
			Low: N/A	High: N/A	Best Estimate: 885.62

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	N/A	N/A	N/A
High	N/A	N/A	N/A
Best Estimate	N/A	22.6	195.0

Description and scale of key monetised costs by 'main affected groups'

Costs largely fall on works promoters (utility companies and highway authorities), either through the costs of behavioural response to avoid lane rental charges (higher operational costs from increased labour, material and machinery costs from 'out-of-hours' working) or the charges themselves. These costs are likely to be reflected in utility prices paid by consumers. Kent and TfL I will incur costs in administering schemes.

Other key non-monetised costs by 'main affected groups'

Administration costs to road works promoters have not been monetised. These costs are expected to be modest relative to the total monetised costs of lane rental. Increased noise is to be expected outside of core working hours as a result of works being shifted to periods of less heavy traffic. The perverse incentives created by lane rental schemes, such as delaying works until they become emergency (and exempt from charge), have not been monetised at this stage as it was not deemed proportionate.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefits (Present Value)
Low	N/A Optional	N/A	N/A
High	N/A	N/A	N/A
Best Estimate	N/A	125.5	1080.6

Description and scale of key monetised benefits by 'main affected groups'

The primary objective of lane rental is to incentivise necessary works on the road network to be undertaken outside of traffic-sensitive times. They aim to reduce the length of time that street works are carried out during peak times on the most critical roads. If street works are shifted, this will improve journey times and reliability at peak times leading to reduced cost of disruption benefitting both businesses and private individuals. Road users also benefit from reduced accidents and fuel carbon emissions. Highway authorities will benefit from the lane rental revenues that accrue to them (which are a transfer from road works promoters).

Other key non-monetised benefits by 'main affected groups'

The surplus revenues from lane rental accrues to local highway authorities which can be used in the innovation fund. Promoters can bid for the innovation fund to invest in research and development projects to develop technologies that can be used to reduce the negative impacts of road works going forward. Such measures deliver further benefits to road works promoters and road users. The increased efficiency due to investment from the innovation fund (lane rental revenues) have not been monetised. The wider benefits of reduced emissions on air quality have not been monetised.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5%
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This IA draws on modelling work carried out by TfL and Kent in 2012 as part of their work to develop a detailed scheme proposal and is the best information available at this stage. The benefits and cost are very sensitive to key assumptions and data. Assumptions include percentage of behavioural change, percentage uplift in costs and percentage reduction in duration of works. Key data inputs include the daily cost of completing works and daily cost of congestion.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:	Score for Business Impact Target (qualifying provisions only) £m:
Costs: N/A Benefits: N/A Net: N/A	N/A

Summary: Analysis & Evidence

Policy Option 2

Description: Retain Kent and TfL lane rental schemes and allow other local authorities to introduce new schemes

FULL ECONOMIC ASSESSMENT

Price Base Year: 2017	PV Base Year: 2019	Time Period Years: 10	Net Benefit (Present Value (PV)) (£m)		
			Low: 984.40	High: 2427.42	Best Estimate: 1,515.36

COSTS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	Insert	43.5	375.1
High	Optional		29.3	252.1
Best Estimate	Insert		39.7	341.9

Description and scale of key monetised costs by 'main affected groups'

Costs largely fall on works promoters (utility companies and highway authorities), either through the costs of behavioural response to avoid lane rental charges (higher operational costs from increased labour, material and machinery costs from 'out-of-hours' working) or the charges themselves. These costs are likely to be reflected in utility prices paid by consumers. Local authorities will incur costs in administering schemes.

Other key non-monetised costs by 'main affected groups'

Administration costs to road works promoters have not been monetised. These costs are expected to be modest relative to the total monetised costs of lane rental. Increased noise is to be expected outside of core working hours as a result of works being shifted to periods of less heavy traffic. The perverse incentives created by lane rental schemes such as delaying works until they become emergency (and exempt from charge) have not been monetised at this stage as it was not deemed proportionate.

BENEFITS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	Insert	143.6	1,236.5
High	Optional		325.6	2,802.5
Best Estimate	Insert		215.8	1,875.3

Description and scale of key monetised benefits by 'main affected groups'

The primary objective of lane rental is to incentivise necessary works on the road network to be undertaken outside of traffic-sensitive times. They aim to reduce the length of time that roads works are carried out during peak times on the most critical roads. If road works are shifted to less congested times, this will improve journey times and reliability at peak times leading to reduced cost of disruption benefitting both businesses and private individuals. Road users also benefit from reduced accidents and fuel carbon emissions. Highway authorities will benefit from the lane rental revenues that accrue to them (which are a transfer from road works promoters).

Other key non-monetised benefits by 'main affected groups'

The surplus revenues from lane rental accrues to local highway authorities and can be used in the innovation fund. Promoters can bid for into innovation fund to invest in research and development projects to develop technologies that can be used to reduce the negative impacts of road works going forward. Such measures deliver further benefits to road works undertakers and road users. The increased efficiency due to investment from the innovation fund (lane rental revenues) have not been monetised. The wider benefits of reduced emissions on air quality have also not been monetised.

Key assumptions/sensitivities/risks

Discount rate (%)

3.5%

This IA draws on modelling work carried out by TfL and Kent in 2012 as part of their work to develop a detailed scheme proposal and is the best information available at this stage. The assumptions for Kent are applied to other local authorities in the absence of any further information. The benefits and cost are very sensitive to key assumption and data. Assumptions include percentages on behavioural change at works at peak times, percentage uplift in costs and percentage reduction in duration. Key data inputs include the daily cost of completing works and daily cost of congestion. Total impacts will depend on how many authorities introduce new lane rental schemes, and how their schemes are designed. Sensitivity analysis was conducted on the key assumptions and on local authorities introducing new schemes to produce a low and high range.

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m: Costs: N/A Benefits: N/A Net: N/A	Score for Business Impact Target (qualifying provisions only) £m: N/A
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Summary: Analysis & Evidence

Policy Option 3

Description: Introducing a new 'super permit' regime as an alternative to lane rental schemes.

FULL ECONOMIC ASSESSMENT

Price Base Year: 2017	PV Base Year: 2019	Time Period Years: 10	Net Benefit (Present Value (PV)) (£m)		
			Low: 292.06	High: 1365.65	Best Estimate: 688.66

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	45.4	390.5
High	Optional	25.3	217.5
Best Estimate	Insert	34.8	299.7

Description and scale of key monetised costs by 'main affected groups'

Costs largely fall on works promoters (utility companies and highway authorities), either through the costs of behavioural response to avoid super permit charges (increasing operational costs from increased labour, material and machinery costs from 'out-of-hours' working) or the charges themselves. For 'super permits', the behavioural change and therefore the additional costs faced will depend on the conditions reached between local authorities managing the works and those carrying out the works. These costs are likely to be reflected in utility prices paid by consumers. Local authorities will incur costs in administering schemes.

Other key non-monetised costs by 'main affected groups'

Administration costs to road works promoters have not been monetised. These costs are expected to be modest relative to the total monetised costs of super permits but higher than those for lane rental due to greater discussion between promoters and local authorities. Increased noise is to be expected outside of core working hours as a result of works being shifted to periods of lower congestion.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	59.2	509.5
High	Optional	204.0	1756.1
Best Estimate	Insert	114.8	988.3

Description and scale of key monetised benefits by 'main affected groups'

The primary objective of super permits is to incentivise efficient working practices, for example, shifting works on the road network to be undertaken outside of traffic-sensitive times. If road works are shifted to less congested times, this will improve journey times and reliability at peak times leading to reduced cost of disruption benefitting both businesses and private individuals. Road users also benefit from reduced accidents and fuel carbon emissions.

Other key non-monetised benefits by 'main affected groups'

The wider benefits of reduced emissions on air quality have not been monetised.

Key assumptions/sensitivities/risks	Discount rate (%)	3.5%
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This IA draws on modelling work carried out by TfL and Kent in 2012 as part of their work to develop a detailed scheme proposal and is the best information available at this stage. The potential behaviour change under super permits is unknown since this type of scheme has never previously been introduced. The benefits and costs are very sensitive to key assumptions and data. Assumptions include percentages on behavioural change, percentage of uplift in costs and percentage reduction in duration. Key data inputs include the daily cost of completing works and daily cost of congestion. Total impacts will depend on how many authorities will introduce new super permits, and how their schemes are designed. Sensitivity analysis was conducted on the key assumptions and on local authorities introducing new schemes to produce a low and high range.

BUSINESS ASSESSMENT (Option 3)

Direct impact on business (Equivalent Annual) £m: Costs: N/A Benefits: N/A Net: N/A	Score for Business Impact Target (qualifying provisions only) £m: N/A
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Evidence Base

1 Problem under consideration

There are estimated to be around 2.5 million road works carried out in England each year, which are vital part of delivering essential services and also facilitating much needed development and improvements to the road network, to ensure that the infrastructure remains in a fit and proper state of repair. However, these works are a significant cause of disruption and delays to road users, with estimates that congestion resulting from street works costing around £4.3 billion a year in time delay costs¹. In addition to the delay imposed on road users, extra time spent around works by road users imposes costs on wider society by increasing the likelihood of an accident, increased carbon emissions and a reduction in air quality.

This consultation impact assessment accompanies a consultation about the future of lane rental schemes. Lane rental involves charging the utility companies and local authorities that carry out road works (work promoters) for the time their works occupy the road in order to reduce the disruption they cause. The aim of lane rental is to provide a financial incentive to works promoters to reduce the time they spend on the busiest roads at the busiest times and to encourage works to be shifted to times where the disruption impact is significantly lower.

Two pioneer lane rental schemes have been in operation since 2012 in London and 2013 in Kent. The Government needs to make a decision about the future of these schemes and whether or not to extend lane rental to allow other local authorities to introduce them.

Types of roads works

There are two different types of work that are carried out on roads:

- Works for utility companies to install, repair and maintain the services they provide. These include water, electricity, gas and telecommunications. Much of the apparatus is placed underneath the road, so utilities' works frequently involve digging up the road. In legislation, these works are known as 'street works'. Many utility companies have the right to dig up the road for these purposes and are known as statutory undertakers. They also need to comply with rules about how they carry out their works. This includes notifying the authority responsible for the road concerned of their plans, or obtaining a permit and completing the works to statutory standards of safety and 'reinstatement' of the road. Works may also be carried out by street works licence holders under the New Roads and Street Works Act 1991. Utility companies have to satisfy requirements placed on them by the regulators to provide and restore services promptly and cost-effectively.
- Road works are carried out by the local highway authority (LHA) to maintain the roads or, for example, to install cycle or bus lanes. Local authorities have a 'network management duty' to co-ordinate what is happening on their roads to minimise disruption and congestion. They need to make sure that works on their roads are safe, and that the roads are returned to a satisfactory standard afterwards to minimise future deterioration. Authorities also have a duty to maintain the roads so carry out their own works to fix pot-holes or re-surface the roads. These are known as 'road works'.

We will use the term road works in this consultation to cover both types of works. There are estimated to be around 2.5 million road works a year in England with utility works accounting for two-thirds of all works.

Current regimes for managing road works

The Government is working with local highway authorities (LHAs) and utility companies on a range of measures to help ensure that road works are managed and co-ordinated as effectively as they can be, to reduce the time it takes to carry out works, and to make accurate and up-to-date information available to road users.

Lane rental is an additional way of managing road works. Currently, the main regimes available for LHAs to manage road works is through either noticing or permit schemes. LHAs can choose which system they use.

¹ Halcrow 2004, Estimation of the Cost of Delay from Utilities' Streetworks

- Noticing was put in place by the New Roads and Street Works Act 1991 and applies only to works carried out by utility companies. It is a passive system that requires works promoters to send in notices when works begin and end in line with certain legal requirements.
- The Traffic Management Act 2004 allows LHAs to introduce permit schemes. This is a more proactive application regime applying to both LHA and utility works on 100% of the LHA's road network with utility companies pay a small permit fee to cover the LHA's costs of running the scheme. Permits specify the activity, location and duration of works. They may be issued with conditions attached, placing restrictions on specific aspects of how the works may be carried out, for example covering the times of day at which works may be carried out. It is possible for the highway authority to refuse a permit for works causing significant delay and disruption to the road network. Furthermore, exemptions can be applied to certain activities such as emergency or urgent works. Currently, around 60% of LHAs have introduced permit schemes. The Government would like to see all LHAs using permitting as schemes are associated with reduction in the duration of works, more coordinated works taking place, and road user satisfaction improving.
- Under a lane rental scheme, work promoters must pay charges for access to the busiest roads at the busiest times. This differs from permit schemes since it applies only to the most critical and heavily congested parts of the network. This provides a clear financial incentive for work promoters to manage their works in a less disruptive way. Currently, only Kent and TfL are able to operate lane rental schemes.

Current lane rental scheme

Transport for London (TfL) and Kent County Council have been operating lane rental on parts of TfL's and Kent County Council's road network. While the principle aims of the two schemes are the same, the design of the lane rental schemes for TfL and Kent differ with regards to the types of road included in the scheme, the charges applied to such roads at various times of the day and the road works to which the charge is applied.

The aim of these pioneer schemes was to test the effectiveness of lane rental as a way of reducing the congestion caused by street and road works. Those carrying out works on the roads are generally commercial organisations or local authorities that aim to complete works at the lowest cost. Lane rental was therefore brought in by section 74A of the New Roads and Street Works Act 1991 (The 1991 Act) and the Street Works (Charges for Occupation of the Highway) (England) Regulations 2012 as a way of factoring in the costs of congestion into decision making. The 2012 regulations include a 'sunset' clause which means the London and Kent schemes will end in March 2019 unless the regulations are amended.

2 Rationale for intervention

Road works are a vital part of delivering essential services and also facilitating much needed development and improvements to the road network, to ensure that the infrastructure remains in a fit and proper state of repair. However, these works are a significant cause of disruption and delays to road users, with estimates that congestion resulting from street works costs some £4.3 billion a year in delay costs².

The costs of congestion are largely externalities. This means that those experiencing the negative impacts of congestion (i.e. society as a whole) are different to the people creating this congestion (i.e. those carrying out the works). Works promoters are incentivised to focus on their own costs (to maximise profit), not these wider costs to society. For example, a works promoter would usually prefer to undertake a given road work during the working day when labour costs are lower, despite the fact that this may result in significantly higher levels of congestion for other users of the road than if the works were undertaken at night or at the weekend. This results in a level of disruption that is higher than the socially desirable level.

The current tools available for LHAs to monitor and manage road works are:

- Noticing, which only applies to works carried out by utilities. This provides information on road works. It does not result in any behavioural change in road works promoters to reduce the externality costs they impose.
- Permitting, which applies to works carried out by both LHAs and utilities, has so far only been introduced by 60% of LHAs. The Government would like to see all LHA's operate permit schemes.

² Halcrow 2004, Estimation of the Cost of Delay from Utilities' Streetworks

We are currently carrying out an independent evaluation of permit schemes which is due to report in November 2017. While permitting can impose conditions on promoters to reduce the disruption and delay costs of works, the effectiveness of this will depend on the conditions agreed between works promoters and local authorities. In practice, those carrying out the works have better information than those who managing the works (i.e. local authorities), in particular on times work can be feasibly be conducted and its overall duration. This limits the extent to which the right conditions can be reached to reduce the disruption of road works to a socially optimum level.

Government intervention is needed to bring works promoters' incentives more into line with those of society at large to reduce the externality costs imposed by road works and to deliver better journeys for drivers. Road works are essential, but that does not mean they should be in place any longer than is absolutely necessary. Furthermore, we expect traffic volumes and demand for utility services to continue to grow which means that it will become ever more important to minimise the congestion and disruption caused by road works. Going forward, Government needs to make a decision on the future of lane rental schemes as the current regulations contain a sunset clause, which mean that without intervention the lane rental schemes for Kent and TfL will expire in 2019.

3 Policy objective

The primary objective of lane rental and 'super permits' is to incentivise road works on the most critical roads of the road network to be undertaken outside of traffic-sensitive times or reduce the duration of works if they are carried out during traffic sensitive times.

Under a lane rental scheme, work promoters must pay charges to access the road when carrying out street works on 'the busiest roads at the busiest times'. The charges of the lane rental scheme will vary depending on the scheme design LHA; currently lane rental in Kent and TfL allows the LHA to impose a maximum charge of up to £2,500 for each day the highway is occupied by the works. The charge was set at a level that reflected the costs of congestion caused by the works and provides a clear financial incentive for work promoters to manage their works in a less disruptive way. 'Super permits' also aim to change the behaviour of work promoters by imposing stricter conditions on works carried out on the busiest roads at the busiest times.

Both would encourage works promoters to:

- Reduce the length of time taken to carry out the works
- Improve planning, coordination and working methods
- Carry out more works outside of peak times, for example, making greater use of weekend and evening working where the local environmental impact was acceptable
- Complete works to the required standard first time reducing the need for the works promoter to return to the site to carry out remedial work

4 Description of options considered

We are consulting on the following four options for the future of lane rental:

- Baseline (do nothing). This is the baseline used to monetise the costs and benefits. This would mean that the London and Kent schemes would end in March 2019 and no new schemes would be permitted.
- Option 1: Retaining lane rental as it currently exists but only in London and Kent.
- Option 2: Roll-out lane rental to other local authority areas. This would allow other local authorities to operate lane rental schemes but on condition that certain other criteria were met, for example, where a permit scheme was in operation. This could be on a limited basis or it could be deployed more widely. It would be for authorities to ask for approval from the Government for schemes.
- Option 3: Using permit schemes to deliver the key objectives of lane rental, i.e. stricter control and planning of works on the busiest roads at the busiest times. This would involve amending permit schemes and adding a new 'super permit' for works on the most congested roads. This would use permitting, which applies to all works on all local roads, to achieve the key policy aims of lane rental. It would allow those 60% of permitting LHAs that operate permit schemes to vary their schemes and

include this new level of permit without the need for any approval from the Government. It would also encourage the remaining 40% to introduce permitting.

We have developed these four options through informal discussions with a small number of stakeholders and because they would be viable and deliverable. These are viewed as the only viable options available at this stage. There are no non-regulatory options available that would achieve the same policy outcomes.

The consultation relates to England only and to the local road network managed by LHAs.

4.1 Do nothing (baseline)

This would mean that:

- The lane rental schemes in London and Kent would end in March 2019 as the 'sunset clause' in the 2012 regulations would come into effect.
- The Secretary of State would not authorise any new lane rental schemes.
- Permit schemes would still be in use and in operation. These can apply to all roads and all works and are currently in use in around 60% of LHA areas, with more being planned. The Government would like to see all LHAs using permit schemes.

In this impact assessment, this option is used as a baseline to estimate the costs and benefits of the other options

4.2 Option 1: Allow Kent and TfL to continue with their lane rental schemes

This would mean that:

- The lane rental schemes in London (TfL's roads only) and Kent would continue on the current model or, potentially, with some minor improvements to allow, for example, hourly rather than daily charges.
- The Secretary of State would not authorise any new lane rental schemes.
- Permit schemes would still be in use and in operation. These can apply to all local roads and all works and are currently in use in around 60% of LHA (local highway authorities) areas, with more being planned. The Government would like to see all LHAs using permit schemes.
- Regulations would be amended to remove the sunset clause.

4.3 Option 2: Extending lane rental schemes to other local authorities

This would mean that:

- The lane rental schemes in London (TfL's roads only) and Kent would continue.
- New schemes would be permitted, however the design of these lane rental schemes is unclear. We are aiming to get views of local authorities during the consultation stage process on the design of future lane rental schemes. This could be on a limited basis or the option could be open to any local authority. There could be a limit on numbers, for example, a maximum of six. Or there could be no limit.
- Schemes would be set up, more or less, on the basis of current legislation but minor changes could be considered, for example, to allow hourly charges.
- There would be no change to primary legislation so the Secretary of State's approval would still be needed for schemes. It would be for authorities to ask for approval and to pay for any set up costs.
- Regulations would be amended to remove the sunset clause.
- Government approval would be given on condition that LHAs:
 - Operated a permit scheme in line with 'best in class', for example, where permit fees are proportionate and the offering of discounts for joint works, full compliance with permitting regulations and guidance and schemes fully supported the delivery of national infrastructure projects like HS2 and broadband roll-out.
 - Schemes applied to a LHA's works in the same way as in Kent and London. Schemes are voluntary so there would be no 'new burdens' for Government.

- Lane rental charges are used to provide incentives to work outside of peak times, they were waived for joint works, caps were put in place for major works to replace apparatus so that these works were not unfairly penalised and delayed.
- Schemes are trialled for a period of time before 'going live' and reviewed annually to ensure charges remained proportionate and were applied to the most congested roads.

4.4 Option 3: amend permit schemes and add a new 'super permit' for works on the most congested roads.

This option considers whether we should use a permit based regime to deliver the aims and benefits of lane rental, through better control, planning and speedy completion of works on the busiest roads at the busiest times, but in a way that minimises costs on utility companies and LHA works. Around 60% of LHAs now have permit schemes, and other LHAs can introduce them without needing the Secretary of State's approval.

Option 3 would mean that:

- Permit scheme regulations would be amended to allow LHAs to designate the most congested roads in their areas as ones that would need a stricter 'super permit'. This would only apply to works on their busiest roads at the busiest times. LHAs would decide themselves which roads would need a 'super permit' but we would expect this to be around 5% of the local road network as in Kent. LHAs already need to consult on any new permit schemes or any variations to their current permit schemes, and the roads to which this type of permit would apply would need to be reviewed annually as in lane rental.
- Utility companies and LHAs would need to apply for a 'super permit' for works on these roads. It is unclear at this stage what the new 'super permit' will look like and we are looking to use the consultation process to obtain views to scope this option in more detail. The permit fee could be set, for example, at a maximum of £1,000 per successful application. LHAs could be asked to pay this fee for their own works, or it could be waived as is currently the case for existing permit schemes.
- The regulations could set additional rules for 'super permits' that would allow, for example, LHAs to challenge proposed durations for standard and major works. Discounts and fee waivers could be offered for moving works to less busy times, with the fees being scaled according to the time spent in the road at the busiest times, there could be additional fines to help enforce the conditions, etc.
- This proposal would be available to all LHAs that have permit schemes, including TfL, the London boroughs, Kent, Greater Manchester and many others.
- The relevant regulations would be amended. This option can be achieved by secondary legislation.
- Operational amendments would be needed to permit schemes. This may involve some administration cost to both LHAs and utility companies, but schemes can be varied as and when an LHA chooses to update it. There would be additional costs to utility companies from the payment of a higher fee for works on 'super permit' roads but this could be offset by reduced fees on minor roads.
- The permit regulations do not allow LHAs to build up surplus revenue from permit schemes. Fees must only cover operational costs. Set up costs have to be covered separately by the LHA. Fees should be reviewed annually to ensure that they are set at the right level. Higher fees for 'super permits' would need to be offset by zero or lower charges for minor works or works on minor roads. Surplus revenue would not be available, therefore, in the same way as it is for lane rental, but the overall costs for utility companies would be lower than lane rental schemes.
- The DfT could issue guidance to help define which roads should be covered by a 'super permit', for example, key route networks, 'A' roads that had a certain level of traffic volume or with particularly high levels of congestion.
- The Government could consider the level of penalty available for breaches of 'super permits' to ensure that it was proportionate. The maximum fines available would be level 5 on the standard scale (unlimited) and/or a £750 Fixed Penalty Notice.

5 Monetised and non-monetised costs and benefits of each option (including administrative burden)

This section sets out our assessment of the costs and benefits of the three options. The baseline option, whereby no Government intervention is undertaken and the current lane rental schemes expire in 2019, is the 'do nothing' scenario and is used as the counterfactual against which the costs and benefits of other options are compared.

As this proposal is not time-limited, the costs and benefits of the Options have been assessed over a 10 year appraisal period in this IA, which is the default period specified in the Better Regulation Framework Manual. Since this proposal will be implemented in 2019, the 10 year appraisal period begins on this date.

Unless stated otherwise, all values are presented in 2017 prices; and where costs and benefits are expressed in present value terms, they have been discounted to their present value in 2019 using a discount rate of 3.5% per year³, the discount rate recommended by the Green Book.

5.1 Overview of costs and benefits for lane rental and 'super permits'

Both lane rental and 'super permit' aim to reduce the impact of road works on road users and wider society by changing the behaviour of road work promoters, especially how works are carried out at peak times. Lane rental achieves this by a daily charge and providing a financial incentive for those carrying out the works to reduce the time they spend carrying out works at lane rental charging times (predominantly peak times in the most congested roads). In comparison, 'super permits' aim to change the behaviour of work promoters by imposing stricter conditions, such as duration and times works can occur etc, in these 'super permits' on works carried out on the most traffic sensitive roads. What is key for the success of 'super permits' is the strength of information local authorities who manage the works have so that socially optimal conditions can be reached.

The aim is to encourage work promoters to:

- Reduce the length of time taken to carry out the works
- Improve planning, coordination and working methods
- Carry out more works outside of peak times, for example, making greater use of weekend and evening working where the local environmental impact was acceptable
- Complete works to the required standard first time, reducing the need for the works promoter to return to the site to carry out remedial work

Given the nature of the impact, lane rental and 'super permit' schemes will have, they will have similar costs and benefits, however the scale of these costs and benefits will vary depending on the behaviour change they can achieve. The scale costs and benefits of lane rental and 'super permits' will depend crucially on scheme design, and on the specifics of the local road networks to which they are applied. They will therefore depend on decisions taken by local authorities when designing their scheme proposals.

Benefits of Lane Rental and 'super permits'

Reduced congestion and improved journey time reliability. The primary objective of lane rental and 'super permits' is to incentivise necessary works on the road network to be undertaken outside of traffic-sensitive times. They aim to reduce the length of time that street works are carried out during peak times on the most critical roads. If road works are shifted, this will improve journey times and reliability at peak times leading to reduced cost of disruption benefitting both businesses and private individuals;

Accident benefits from lower number of accidents at road works. Reducing the time delay at road works will reduce the number of accidents that tend to occur around road works due to the reduced number of work days at peak times; peak times have the greatest traffic flows and therefore the greatest likelihood of accidents.

³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf

Environmental benefits from lower emissions. By reducing the congestion arising at road works sites, lane rental and ‘super permits’ has the potential to reduce road transport-related emissions – particularly local air quality pollution that is exacerbated by stationary or slow, stop-start traffic.

Revenue for the innovation fund. The surplus revenues from lane rental accrues to local highway authorities and can be used in an innovation fund. Lane rental charges increase costs for work promoters but also creates revenue that can be used in the innovation fund to reduce impact of road works. Promoters can bid in to the innovation fund to invest in research and development projects to develop technologies that can be used to reduce the negative impacts of road works going forward. Such measures deliver further benefits to road works promoters and road users. Revenues accruing to highway authorities are equal to the charges paid by those carrying out works, and are therefore treated as a transfer in this analysis. ‘Super permits’, however, will not result in any revenue as the charge for this will be based on a cost recovery basis.

Costs of Lane Rental and ‘super permits’

Costs to promoters of road works. The main cost of lane rental and ‘super permits’ falls on promoters of road works, either through the costs of behavioural response to avoid lane rental charges (through higher operational costs from increased labour, material, machinery costs from ‘out-of-hours’ working) or the charges themselves. For lane rental, work promoters will choose to change their behaviour if the costs of paying the lane rental charge exceed the cost associated with the change in behaviour. For ‘super permits’ the behavioural change and therefore the additional costs faced will depend on the conditions reached between local authorities managing the works and those carrying out the works. There are additional on-going admin costs for promoters as they work with the local highway authority and one-off costs to familiarise themselves with the new regime.

Costs to local authority to set up and run lane rental and ‘super permit’ schemes. There will be a one-off cost for the local authority to set up a lane rental scheme and on-going costs to work with works promoters and run the schemes. Currently Kent and TfL are able to use the surplus revenue from lane rental charges to finance on-going running costs of the scheme. However, they did have to fund the setting up of the scheme themselves. For the purposes of this analysis, we have assumed this will also be the case for other local authorities that introduce new lane rental schemes. Similarly for ‘super permits’, it is assumed that the cost recovery will only apply to the running costs associated with the scheme and not include set up costs.

Perverse incentives created by lane rental schemes. The lane rental schemes for Kent and TfL currently exempt certain types of road works from lane rental charges, most notably emergency and urgent works. However, this unintentionally creates perverse incentives for promoters to delay non-urgent works until they become urgent or an emergency to avoid paying the lane rental charge. However, Ecorys, in their independent evaluation on Kent and TfL’s lane rental schemes carried out for the department in 2016⁴, found that there was little evidence to suggest that this practice is prevalent within the Kent or TfL schemes. Lane rental charges also incentivise small scale ‘find and fix’ repair work and repairing at the expense of major projects which may require replacing pipelines since this incurs lower lane rental charges. This results in the delay in maintenance or upgrading of crucial infrastructure, which may result in prolonged disruption to utility service in the future. Furthermore, the current lane rental schemes impose a blanket charge for a given day, regardless of the actual amount of time taken to complete the works. A small job that uses a lane for 1 hour or only closes a small section of the road may incur a charge of £2,500. This does not reflect the social cost of congestion.

Familiarisation costs of introducing a new scheme. These are the costs involved with the relevant organisations familiarising themselves with the new lane rental or ‘super permit’ schemes. For this consultation stage impact assessment, we have not attempted to monetise these costs for either the lane rental or the ‘super permit’ options. However we are looking to obtain the relevant information to do this at the final stage.

⁴ <https://www.gov.uk/government/publications/street-works-lane-rental-evaluation>

5.2 Approach taken in the analysis

Given the complexity involved in the analysis for lane rental, it wasn't deemed proportionate at this consultation stage to conduct a full update of the analysis of the costs and benefits for Kent and TfL and to conduct new analysis for local authorities that might introduce lane rental and 'super permit' schemes. As such, the estimates below are using the best information/evidence currently available, which include the following reports that are publically available:

- Kent County Council's Cost Benefit Analysis for its lane rental scheme conducted in 2012⁵;
- TfL's Costs Benefit Analysis for its lane rental scheme conducted in 2012⁶;
- Kent County Council's first year progress report conducted in 2015⁷;
- TfL's annual monitoring reports⁸;
- DfT's Independent Evaluation conducted by Ecorys on the lane rental scheme published in 2016.

As such the estimates below rely heavily on the assumptions used for Kent and TfL, which are the best we have at this stage but might not be representative of other local authorities that introduce either the lane rental scheme or 'super permits', for example because of differences in size, congestion and number of road works on traffic sensitive roads. The estimates presented are intended to be indicative and give a sense of the potential costs and benefits of the various options.

The estimates are quite heavily reliant on following key assumptions which, if changed, would change the results significantly:

- the costs of congestion of street works and road works at peak and off peak times;
- the behavioural change caused by lane rental and 'super permits';
- the additional costs incurred by utility companies and local authorities as a result of shifting their works to out-of-hours/off peak times.

For the final stage Impact Assessment, we intend to gather further information and evidence to allow us to conduct more robust analysis. More specifically we:

- Have commissioned the Technology Systems Catapult to develop updated estimates for the cost of congestion due to street works and road works using an improved methodology.
- Will have further progress and monitoring reports from Kent County Council and TfL to compare outcomes with what was predicted and will look to incorporate this into our analysis.
- Will engage with the National Joint Utilities Group (NJUG) and local authorities to further understand the costs involved with road works and the additional costs from moving to off peak working times.
- Will, through the consultation process, also have a better understanding of the local authorities that are interested in introduced lane rental schemes or 'super permit' schemes and their views on what the design of this may look like.

A high-level overview of the approach taken in the analysis for the options is outlined below:

- Option 1 – Retain lane rental as they currently exist for Kent County Council and TfL. For TfL, the analysis used is complex, relying on their own internal algorithms and econometric modelling. As such, we have simply used the outputs from analysis they conducted in 2012. For Kent, we have replicated the modelling used in their analysis to produce updated

⁵ <http://consultations.kent.gov.uk/consult.ti/kentlane2012>

⁶ https://consultations.tfl.gov.uk/streets/lane-rental/supporting_documents/CoBA%20v1.1.pdf

⁷ http://www.kent.gov.uk/__data/assets/pdf_file/0015/13074/KLRS-progress-report.pdf

⁸ <https://tfl.gov.uk/info-for/urban-planning-and-construction/lane-rental-scheme>

estimates, however the majority of the assumptions used in our analysis are the same as Kent's initial assumptions. We have provided a central scenario estimates for this option.

- Option 2- Permit local authorities to introduce new lane rental schemes (including Kent and TfL). We have used the lane rental scheme currently operated by Kent as a proxy for the introduction of new schemes by other local authorities as these areas are more likely to be similar to Kent than TfL. As such, we have relied heavily on the analysis carried out for Kent, extrapolating to other local authorities based on population and traffic flow data. It is worth noting that at this stage we have not been able to monetise the impacts for boroughs in London that introduce new lane rental schemes as we have not been able to obtain the number of additional non-TfL works that may be affected. We are aiming to obtain information on this for the final stage IA. Given the additional uncertainty and limitations of the approach, we have provided a low/high range.
- Option 3 – Introduce a new 'super permit'. The approach taken for this is similar to option 2 with regards using Kent's analysis and extrapolation to estimate the impacts to other local authorities. The key differences between this and option 2 is that we have assumed:
 - The behavioural change is half of that for lane rental, as lane rental will be more efficient at encouraging behavioural change;
 - Daily lane rental charges do not apply, however works do pay a one-off fee at the beginning to apply for a permit.
 - We have not attempted at this stage to recalculate the costs and benefits for lane rental and super permits for TfL given the complexity of the approach used. Instead for 'super permits' we have adjusted TfL's costs and benefits for lane rental using costs and benefits estimated for option 2 and 3 for Kent. This is described in more detail later in the assessment of option 3. Similar to option 2, we could not at this stage monetise the impact of 'super permits' on non-TfL London roads.

Given the additional uncertainty and limitations of the approach, we have also provided a low/high range.

5.3 Baseline (Do nothing)

With no Government intervention, the lane rental schemes in London and Kent would end in March 2019 as the 'sunset clause' in the 2012 regulations would come into effect. This is the 'do nothing' against which the other options are assessed.

Under this option, there would be administration costs for TfL, Kent County Council and utility companies who work in those areas to amend current systems and remove lane rental from the process. These have been monetised for this consultation stage IA, but are looking to obtain information on this for the final stage IA.

5.4 Option 1 – Remove the sunset clause and allow Kent and TfL only to continue with their lane rental schemes

Analysis for TfL

The estimates on the costs and benefits of continuing the lane rental scheme for TfL are taken from TfL's ex-ante Costs Benefit Analysis of their lane rental conducted in 2012, which is publically available. The estimates have been inflated to 2017 prices for the purpose of this impact assessment.

TfL's scheme applies to 56% of TfL roads (2.5% of the London Network). These are the most traffic sensitive roads. The design of TfL's Lane Rental Scheme is based on the following factors:

- Charge band – vary by 3 different bands depending on the sensitivity of the location with band 1, 2 and 3 accounting for 61%, 30% and 9% of total lane rental works respectively.
- Traffic sensitive times of day – as well as varying by location charges also vary by the times of the day (06:30-10:00 and 15:30-20.00 peak segments, and outside 07:00-20:00 for pinch points).
- Charges range from £800 to £2,500 per day.

TfL's analysis is data intensive and draws on several sources of detailed data about their road network. For example, street works register data on duration and location of works, evaluation framework data on traffic flows and composition and London Congestion Analysis Project data on network sensitivity.

The methodology for calculating the congestion benefits involves the following steps:

- 1) Identifying a baseline volume of works - 129,324 roadwork days on the lane rental network in 2010.
- 2) Econometric modelling to estimate the external cost of works in the most traffic sensitive locations – A network wide regression model estimates the causal factors from works to overall traffic journey times. It was estimated that works on the lane rental network had an external cost of £321m p.a. The estimated external costs include delays, diversions and variability of journey times. It is worth noting that unlike Kent, accident and road safety impacts are not captured.
- 3) Behavioural change modelling to predict response of work promoters to lane rental charges - behaviour change is based on a set of assumptions on the cost of new working practices compared to the lane rental charges and accounting for the probability of inspections. The behaviour change model predicts that for the lower charge (band 1) 63% of works clear the carriageway (26% pay the charge) and for higher charges (band 2 and 3) 96% clear the carriageway (3% pay the charge). The remaining works are exempt from charges.
- 4) Reduction in external cost from new working practices - It is assumed that works previously occupying the carriageway over traffic sensitive times could have their external costs (i.e. delays, diversions, journey time variability and casualties) cut by 70% if they adopted new working practices (night/weekend, plating, no-dig, etc.).

TfL assumes work promoters' ability to avoid lane rental charges increases overtime due to significant progress in developing and applying new, less-disruptive techniques such as better plating and new reinstatement techniques which may result from the investment from surplus lane rental revenue. As a result, the benefits of lane rental increase in the long run.

Table 1: Annual benefits from TfL's lane rental scheme (£m 2017 prices)

Delays and Diversions	91.1
Journey time reliability	10.2
Total congestion benefits	101.2
Total benefits including lane rental revenue	111.0

TfL was only able to obtain information on the cost of carrying out works for their own works, as such there is uncertainty around the additional costs of carrying out works for utilities. The methodology for calculating the costs for works carried out by TfL is based on data on the average expenditure on Highway Maintenance & Works Contract (HMWC). Total expenditure of TfL road works is predicted to increase by £2.8m due to new working practices and £3.3m due to lane rental charges⁹. For utility works the cost of new working practices is estimated at £5.9m and lane rental charges at £6.2m. While the cost of lane rental penalties is estimated at £0.1m for both local authorities and utilities. The administration costs of the scheme are estimated at £1.5m. Overall, the total monetised cost to utility and highways authorities is estimated at £19.9m. Again, TfL assumes work promoters' ability to avoid lane rental charges increases over time due to significant progress in developing and applying new, less-disruptive techniques. Therefore, the cost of avoiding charges reduces over time.

Table 2: Annual costs incurred by utilities and local authorities from TfL's lane rental scheme

(£m 2017 prices)	Utilities	Local Authorities	Total
Cost of paying the lane rental charge	6.2	3.3	9.5
Cost of paying lane rental penalties	0.1	0.1	0.2
Cost of new working practices	5.9	2.8	8.7
Admin cost of scheme	Non-monetised	1.5	1.5
Total cost	12.2	7.7	19.9

⁹ These are the estimated uplifts for 2015, 2 years into the scheme.

Analysis for Kent County Council

The estimates on the costs and benefits of continuing the lane rental scheme for Kent are heavily reliant on the analysis carried out in their ex-ante Cost Benefit Analysis of their lane rental scheme conducted in 2012, which is publically available.

The design of Kent's Lane Rental Scheme is based on the following factors:

- Road type – split into three types of road: Core, Seasonal and Term Time;
- Road works type – whether the work leads to a full road closure or a lane closure;
- Charge band – vary by 4 different bands depending on the sensitivity of the location and whether the work leads to a full or lane closure;
- Traffic sensitive times of day/year – As well as vary by location and type of work, charges also vary by times of the day (07:00-19:00, peak times, outside 07:00-19:00) and times of the year for seasonal and term time.
- Lane rental charges for Kent range from £300 to £2,000.

For the cost benefit analysis carried out in 2012, a 12-month sample of road work data for Kent was collected detailing works by location, type and duration. In this sample, there were around 9,400 road works and 32,760 days of works carried out on Kent's road network where lane rental charges would apply. Of these, 28% of these sites involved a lane closure or a full road closure, accounting for 9978 days of work.

In addition, it is assumed:

- 22% of works would pay the fee, 68% of works would be conducted outside lane rental charging times and 10% would avoid the fee and continue working as they do now. These assumptions are taken from Kent's Cost Benefit analysis and derived using the outputs from TfL's analysis on behavioural change in different charge bands. It is worth noting that the first year performance report from Kent showed behavioural change being higher than previously estimated and as such the costs imposed by lane rental being lower than expected. We have not attempted to include such findings into the analysis at this stage due to its complex nature, however we are intending to factor such findings into the final version of the impact assessment.
- A 25% increase in working time for those promoters that conduct works outside lane rental charges due to time taken to clear, taking longer to secure materials machinery needed and overall less efficient working. This assumption is taken from Kent's report and relies on information provided by utility companies that night-time working maybe limited to acceptable hours reducing the time available by 3 to 4 hours and the time taken for clearance at peak period estimated to account for 2 to 4 hours per day.
- A 7% reduction in the duration of works carried out at peak times due to the lane rental charge incentivising more efficient completion of jobs. This assumption is also taken from Kent's report and relies on outputs TfL's analysis on the reduction in duration for different types of road works.

Leading to the following composition of road work activity:

Table 3: Composition of road work activity in the 'do something' scenario

Activity of works	Work days	Charge paid
Works carried outside lane rental charge times	8569	No
Works carried out at lane rental charge and fees paid	1995	Yes
Works carried out during lane rental charge, but fees avoided	909	No

Benefits

Congestion, reliability, accident and emissions benefits. The congestion, accident and emissions benefits from lane rental in Kent's cost benefit analysis was calculated using modelling outputs from the Quadro (QUEues And Delays at ROadworks) program. The purpose of the program, which was initially developed by the department, is to provide a method to assess the total cost of road maintenance works, include the costs imposed on road users while works are being carried out.

The Quadro programme was used to model 32 road works on Kent's lane rental network for lane closure and full road closure scenario for works carried out during peak, off peak and outside 07:00 to 19:00 times. Using these outputs, average estimates of 'cost' per site per day were calculated for all day working, outside peak working and outside 07:00-19:00 working times. These average cost per site per day are costs imposed by road works on society and include time delay costs (for business and non-business users), accident costs and fuel carbon emissions costs.

DfT analysts recalculated the weighted average daily costs based on Quadro outputs and the weightings described in the annex of Kent's Cost Benefit Analysis report resulting in the following outputs:

Table 4: Recalculated weighted average daily costs per work (£ 2017 prices)

Impacts	Outside peak times	Outside 07:00-19:00	Average off peak	All day working
Net consumer (non-business) time impacts	384	83	180	930
Net business time impacts	452	65	189	1058
Accident costs	51	17	28	101
Fuel carbon emissions costs	8	3	5	18
Total	894	168	401	2107

The congestion time, accident and emissions benefits for continuing the lane rental scheme for Kent were calculated using the composition of works activity in table 3 and the weighted average daily cost estimates in table 4. It is worth noting that these Quadro outputs and average daily costs are also used for other local authorities, which is one of the limitations in the analysis carried out in this impact assessment. The factors affecting congestion costs, for example the traffic flow, local road features such as alternative routes, the types and durations of works carried out, are likely to vary by local authority. As a result the cost of congestion at peak and off peak times will vary considerably by local authority. For the final stage impact assessment, the department is looking to develop updated estimates of the costs of congestion for various types of road works, on different types of roads and for peak and off-peak times to calculate average estimates for each local authorities.

In addition, time saving benefits, there will also be reliability benefits from reducing the time spent by work promoters at peak times. This has been calculated by applying a 10% uplift factor to time savings as per the Department's published guidance¹⁰ for local transport decision makers on value for money.

Table 5: Summary of annual monetised benefits (2017 prices, million £ per year):

Impacts	Benefits (£m)
Net consumer (non-business) Time and reliability impacts	£5.9
Net business time and reliability impacts	£6.9
Accident costs	£0.5
Fuel carbon emissions costs	£0.1
Lane rental revenue	£1.2
Total	£14.6

In addition to the benefits described above, there are also benefits from the revenue accrued from lane rental charging. This was estimated to be £745 per work per day using a weighted average of lane rental charges and the number of works that paid the charge. As a result, the annual revenue accrued from lane rental charging was estimated to be £1.2m per year. This surplus is currently used by Kent County Council to cover its running costs for the lane rental scheme and this assumption is continued throughout the appraisal period. The residual amount after taking into account lane rental running costs is intended to be used to fund innovative projects to reduce the impact of road works going forward. For this consultation stage impact assessment we have not attempted to factor this into our analysis and will seek information

¹⁰ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/267296/vfm-advice-local-decision-makers.pdf

during consultation on the success of such projects so far. Overall, the revenue gained from lane rental charges is treated as a transfer in this analysis and as such will not impact the Net Present Value (NPV).

Costs

Admin costs for LHA. Kent CC have already introduced their lane rental scheme so therefore they will not face set up costs, however they will continue to incur costs to maintain and operate the scheme. Kent published a performance report that one year after the introduction of the scheme, which indicated the cost of operating the scheme for the year was £420,000. In this analysis this is assumed to be the annual running costs for Kent CC over the appraisal period.

Costs to works promoters from shifting works. Kent's cost benefit analysis did not include an assessment of increased costs incurred by works promoters either through paying the lane rental charges or the additional costs associated with moving works to a less congested time. We have managed to obtain information from National Joint Utilities Group (NJUG) on the number of works conducted by utilities, the number of work days and total costs for the financial year 2014/15. We have used these to calculate the average cost per work day faced by utilities and assumed this to be the daily cost for day time working for utility companies and local authorities. For out-of-hours working we have assumed a simple uplift factor of 30% on the day time working costs for operational work based on advice provided by NJUG. We appreciate the approach taken is simplistic and are intending to obtain more detailed cost information during consultation and in advance of the final stage impact assessment. However for the purposes of this consultation stage impact assessment, we believe this is proportionate. The average daily costs for utilities and local authorities are assumed to be:

Table 6: Average daily costs for utilities and local authorities for carrying out works (rounded to nearest hundred)

	£ (2017 prices)
Average daily cost for all day working	250
Average daily cost for out-of-hours working	330

Using these assumptions and the behavioural change and lane rental charge assumed earlier, the additional costs for utilities and local authorities per year are:

Table 7: Annual costs incurred by utilities and local authorities from Kent's lane rental scheme (rounded to nearest thousand)

(£m 2017 prices)	Utilities	Local Authorities	Total
Cost of paying the lane rental charge	783,000	392,000	1,175,000
Cost incurred from moving to out-of-works working	760,000	380,000	1,140,000
Running costs from lane rental	Non-monetised	420,000	420,000
Total	1,543,000	1,192,000	2,735,000

Ultimately all of these additional costs will be passed on to utility customers or require additional funding for local authorities. For this consultation stage IA we have not attempted to estimate the impact on utility bills, however are intending to obtain information to enable us to estimate this for the final stage impact assessment.

Summary of option 1 annual costs and benefits relative to the baseline (£m 2017 prices)

	TfL	Kent
Costs	19.9	2.7
Benefits	111.0	14.6
Net Benefits	91.1	11.9

5.5 Option 2 – New schemes permitted

At this stage there is significant uncertainty of the local authorities that would introduce a lane rental scheme if they were permitted and what the design of such a scheme would look like. Further, there is also significant uncertainty around the number of works lane rental charges would apply too, the behaviour change of works promoters and the underlying cost of congestion caused by roadworks for different local authorities. We are looking to obtain more information on these during the consultation process.

For the purposes of this analysis, we assumed the introduction of new lane rental schemes will be similar to that of Kent. Furthermore, it is also assumed the behavioural change, daily cost for work promoters and the daily cost of disruption from road works for all day and off-peak working will be the same as those assumed for Kent in option 2.

Number of road work days for each local authority

We were not able to obtain data on the number of roadworks and road work days affected by lane rental charges for other local authorities for this consultation stage impact Assessment and taking Kent as a proxy was seen unreasonable. Kent is one of the largest and most populated local authorities and therefore the number of roadworks and road work days on its road network is likely to be significantly higher than other local authorities. We have therefore attempted to calculate the number of roadworks days on lane rental roads by extrapolating Kent's assumption of 9978 days using population and traffic flow data. It is assumed that utilities works will be heavily dependent on population as they will need to provide more services and therefore require greater maintenance. For works carried out by local authorities, it is assumed this will be dependent on traffic flow as greater use of roads will require greater maintenance.

The number of road work days on lane rental roads for Kent was split by works carried out by utilities and works carried out by local authorities using 67% and 33% respectively. The number of work days for utilities was then extrapolated using population data for each local authority to produce an estimate of the number of utilities work for each local authority. Similarly, the number of work days for local authorities was also extrapolated using traffic flow data to produce an estimate for the number of LA works for each local authority.

Using such an approach yielded an overall split between utilities and local authorities of 70% and 30% respectively and the number of works on lane rental roads accounting for around 7% of the total number of works.

Costs and benefits for option 2 relative to the baseline option

Using the number of roadworks days for each local authority and using the assumptions for Kent described above, we were able to derive costs and benefit estimates for each local authority, which were aggregated to a regional level. It is worth noting, that at this stage we have not been able to monetise the impacts for boroughs in London that introduce new lane rental schemes as we have not been able to obtain information on the number of additional non-TfL works that may be affected. As such the benefits and costs and subsequently the NPV will be higher than stated. Given the additional level of uncertainty around this option, sensitivity analysis was carried out to produce a range. The assumptions used in the low and high (relative to those described above) are as follows:

Table 8: Assumptions used in the low and high NPV scenarios

Assumption¹¹	Central NPV	Low NPV	High NPV
% of works shifted to out of hours	82%	72%	92%
% uplift of LAs and Utility costs	20%	30%	10%
Roadwork cost (£/day/work)	£250	£280	£230
Cost of congestion peak	£2,110	£1,900	£2,320
Cost of congestion off-peak	£160	£150	£180
Set up costs	£263,000	£289,000	£236,000
Running costs	£420,000	£462,000	£378,000

¹¹ Roadwork costs and cost of congestion rounded to nearest 10, Set up costs and Running costs rounded to nearest 1,000.

Local authorities included in the low, central and high NPV scenario analysis

Below is a list of the regions and integrated transport authorities (local authorities predominantly in major cities that have joined to provide integrated transport services) included in the low, central and high scenario analysis. The appendix contains a summary table of the local authorities, population, road length and estimated road works for each area. These areas were selected because they represent the areas with the highest levels of congestion and include a major city. The number of LHAs who may want to take up lane rental is uncertain and we are using this consultation to test the appetite from LHAs for schemes.

Table 9: Assumptions on local authorities introducing new lane rental schemes in the low, central and high NPV scenarios

	<u>Central NPV</u>	<u>Low NPV</u>	<u>High NPV</u>
Kent	✓	✓	✓
Tyne and Wear ITA			✓
Greater Manchester ITA	✓	✓	✓
Merseyside ITA	✓		✓
South Yorkshire ITA	✓		✓
West Yorkshire ITA	✓		✓
West Midlands ITA	✓		✓
South East			✓

Summary of option 2 annual costs and benefits relative to the baseline

Annual Costs (£m 2017 prices)

One-off Cost LAs	Central NPV	Low NPV	High NPV
- Set up	1.58	0.58	1.89
Annual Costs LAs			
- Cost of moving works	5.51	3.91	6.72
- Costs of LR fee	6.24	5.00	5.70
- Running cost of LRs	4.51	2.70	6.29
Annual Costs for Utilities			
- Cost of moving works	11.34	8.15	13.76
- Cost of LR fees	11.94	9.46	10.87
Total Costs	41.11	29.79	45.24

Annual Benefits (£m 2017 prices)

Annual Revenue for lane rental	18.17	14.45	16.58
Congestion Savings¹²			
- To business	101.02	65.85	158.33
- To Non Business	96.57	63.34	150.68
Total Benefits	215.77	143.65	325.58

Net benefits

Year 1	174.65	113.85	280.33
Year 2 onwards	176.23	114.43	282.23

¹² This includes consumer and business time savings and reliability impacts, accident benefits and fuel carbon benefit

5.6 Option 3 – introducing a new ‘super permit’

This option aims to provide an alternative to lane rental scheme to reduce the negative impact caused by road works on society. This will involve introducing a stronger permit based regime to be applied only on the most critical traffic sensitive roads.

Similar to option 2, there is significant uncertainty at this stage around the 'super' permit option, in particular around the road works it will apply to, the conditions imposed to achieve the intended benefits and the local authorities that will look to introduce them. We are looking to obtain more information on this during the consultation process.

The introduction of this option will lead to stricter conditions being imposed on road works promoters and will most likely result in lower number of works being carried out at peak times. Similar to lane rental this will lead to benefits from reduced negative impact of road works but higher costs to work promoters from moving works to less congested times. However it is believed these costs will be lower than the lane rental option and we hope to gather information through the consultation to show whether this is the case or not.

What is unclear at this stage is the level of change and the number of works and work days that will be shifted to less congested times and subsequently the size of costs and benefits. This will ultimately depend on the conditions agreed in the 'super permit' by works promoters and local authorities that manage the works. Given the asymmetric information, for example on how long a particular work will take and what would be required to conduct the work, between those carrying out the road works and those managing works, it is unlikely conditions agreed will lead to the same behavioural change as lane rental and therefore same benefits as the lane rental option.

Using the same framework as option 2 we have attempted to estimate the costs and benefits of the super permit option, however we emphasise that at this stage these are indicative only.

Analysis for Kent County Council and other non-London local authorities

For these estimates, we have used the same set of assumptions and sensitivities around the central estimate as in option 2. The key differences are:

- lower change in the roads works that get shifted to off peak times to 40% (half of the assumption for lane rental)
- lower reduction of shorter duration of peak times work to 0% (compared to 7% for lane rental)
- no daily lane rental charge, however there will be a cost of applying for a super permit at the beginning of each work, which will cover local authority costs of operating the scheme; local authorities are not allowed to make a surplus. We have made a simplistic assumption of £500 for this for all works.
- as a result of not having a revenue surplus, there are no additional benefits from investing in innovative technologies to reduce the impact of roadworks in the future.

Summary of annual costs and benefits for Kent and other non-London local authorities

Annual Costs (£m 2017 prices)

One-off Cost LAs	Central	Low	High
- Set up	1.58	0.58	1.89
Annual Costs LAs			
- Cost of moving works	1.94	0.66	3.31
- Costs of LR fee	3.15	1.26	5.01
- Running cost of LRs	3.02	1.20	4.79
Annual Costs for Utilities			
- Cost of moving works	2.78	1.00	4.42
- Cost of LR fees	6.30	2.51	10.02
Total Costs	18.76	7.21	29.44

Annual Benefits (£m 2017 prices)

Annual Revenue for lane rental	9.45	3.77	15.02
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Congestion Savings¹³			
- To business	23.84	5.83	57.90
- To Non Business	22.51	5.51	54.67
Total Benefits	55.79	15.10	127.60

Net benefits

Year 1	37.03	7.90	98.16
Year 2 onwards	38.61	8.47	100.06

Analysis for TfL

Given the complexity involved in TfL's analysis, it was not deemed proportionate to produce either updated analysis for lane rental or new analysis for 'super permits'. As such, for 'super permits' we have taken a simplistic approach to calculate the NPVs for the low, central and high scenarios by scaling the costs and benefits for lane rental.

Central NPV scenario:

To calculate the benefits for the central scenario for TfL, we have scaled down the costs and benefits for TfL in option 1 by the ratio of Kent's costs and benefits for lane rental and for 'super permits'. The amended costs and benefits are then used to calculate the central NPV for TfL for the 'super permit option'. This approach implicitly assumes the difference in the scale of the impacts in lane rental and 'super permits' for TfL will be proportionate to that for Kent. This is a very simplistic approach and is only taken to provide an indicative estimate. For the final stage impact assessment, the intention is to take a more robust approach.

For example, the TfL super permit costs are calculated in the table below as:

$$TfL_{Super Permit} = (Kent_{Super Permit} / Kent_{Lane Rental}) \times TfL_{Lane Rental}$$

$$17.4 = (2.4 / 2.7) \times 19.9^{14}$$

Table 10: Estimated annual costs and benefits for the 'Super' Permits option for TfL in the central option (£m 2017 prices)

	Lane Rental		'Super' Permits	
	Kent	TfL	Kent	TfL (estimated)
Costs	2.7	19.9	2.4	17.4
Benefits	14.6	110.9	7.8	59.0

Low and high NPV scenarios:

For the low and high scenarios for TfL in this option, we have scaled the central scenario costs and benefits calculated using the approach described above using the ratio of the costs and benefits respectively in the low and high scenario in the 'super permit' option for Kent. This approach implicitly assumes the variance in the low and high for TfL for 'super permits' is proportionate to that for Kent. Similarly, the approach taken here is very simplistic and only taken to provide indicative estimates, with the aim to provide more robust estimates for the final stage impact assessment.

For example, the costs in the low estimated in table 11 are calculated as:

$$TfL_{Low Cost} = (Kent_{Low Cost} / Kent_{Central Cost}) \times TfL_{Central Cost}$$

$$18.6 = \left(\frac{2.5}{2.4}\right) \times 17.4$$

Table 11: Scaling factors used in low and high scenarios for 'super permits'

	'Super permits' (Kent) (£m, 2017 prices)	Scaling factor (Sensitivity/Central)
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¹³ This includes consumer and business time savings and reliability impacts, accident benefits and fuel carbon benefit

¹⁴ This is not exact due to rounding

	<i>Central NPV</i>	<i>Low NPV</i>	<i>High NPV</i>	<i>Central NPV</i>	<i>Low NPV</i>	<i>High NPV</i>
Costs	2.4	2.5	3.3	1.0	1.1	0.9
Benefits	7.8	5.8	10.1	1.0	0.7	1.3

Table 12: Annual costs and benefits estimated results for TfL 'Super' Permits (£m, 2017 prices)

	<i>Central NPV</i>	<i>Low NPV</i>	<i>High NPV</i>
Costs	17.4	18.6	15.8
Benefits	59.0	44.1	76.4

It is also worth noting, similar to option 2, we could not at this stage monetise the impact of 'super permits' on non-TfL London roads.

Summary of annual benefits and costs for option 3 relative to the baseline option

Annual Costs (£m 2017 prices)

One-off Cost LAs	Central	Low	High
- Set up	1.58	0.58	1.89
Annual Costs LAs			
- Cost of moving works	4.38	3.26	5.53
- Costs of LR fee	6.15	4.45	7.73
- Running cost of LRs	4.33	2.60	5.99
Annual Costs for Utilities			
- Cost of moving works	7.94	6.49	9.10
- Cost of LR fees	11.83	8.40	15.04
Total Costs	36.21	25.78	45.27

Annual Benefits (£m 2017 prices)

Annual Revenue for lane rental	14.63	7.64	21.74
Congestion Savings¹⁵			
- To business	51.22	26.28	93.35
- To Non Business	48.97	25.27	88.93
Total Benefits	114.82	59.20	204.02

Net benefits

Year 1	8.61	33.42	158.75
Year 2 onwards	80.19	34.00	160.64

6 Rationale and evidence that justify the level of analysis used in the IA (proportionality approach);

The evidence used in this consultation stage impact assessment relies heavily on cost benefit analysis carried out by Kent County Council and TfL in advance of introducing their lane rental schemes. Given the complex nature of this analysis, the lack of information and evidence available to DfT at this time and the fact this is a consultation stage impact assessment, this was deemed proportionate.

For the final stage impact assessment, we are intending to obtain updated estimates of the cost of congestion/disruption of road works for peak and off-peak, greater information on the number of roadworks

¹⁵ This includes consumer and business time savings and reliability impacts, accident benefits and fuel carbon benefit

and those that fall on lane rental roads by local authority and more detailed information on the additional costs that fall on utilities and local authorities from out-of-hours working.

7 Risks and assumptions;

The key assumptions in this analysis are:

- The LAs that will look to introduce lane rental or 'super' permits schemes and the number of road works that would fall in such schemes. Currently, we have conducted scenario analysis around the number of LAs that would introduce new schemes and for the number of works we have extrapolated the number of lane rental work days for Kent based on population and traffic flow data. For the final stage IA, we will look to obtain more information on the local authorities interested in introduce such schemes and the works these would apply too.
- the cost of congestion/disruption caused by road works for peak and off peak times. The analysis uses the Quadro outputs used for Kent in their cost benefit analysis for this. We appreciate this is a risk as this is likely to vary by local authority, however given the complex nature of the modelling underpinning this outputs it is difficult to say how they might vary by local authority. For the final stage IA, we are intending to obtain updated outputs for these.
- The behavioural change assumptions, in particular the proportion of works that shift work. At this stage we are reliant on what has been used in the ex-ante cost benefit analysis. However for the final stage IA, we are intending to incorporate further findings from Kent and TfL's performance and evaluation reports.
- The additional costs imposed by out-of-hours working. At this stage, we have assumed a simple uplift of 30% of day time working costs. For the final stage IA we are intending to work with NJUG and local authorities to obtain more detailed estimates for day time costs and how these might increase as a result of out-of-hours working.

8 Wider impacts (consider the impacts of your proposals, the questions on pages 16 to 18 of the IA Toolkit are useful prompts. Document any relevant impact here and by attaching any relevant specific impact analysis (e.g. SME and equalities) in the annexes to this template);

Greenhouse Gases Impact Test

- The congestion benefits are monetised using QUADRO, a Highways England modelling tool. This explicitly monetises the fuel carbon emission benefits of reduced congestion. For example, moving works from peak to off-peak is estimated to saved £14 in fuel carbon emission (per work, per day).

Wider Environmental Impact

- Some of the worst air-quality hotspots in major urban areas are associated with stop-start traffic on busy roads. Accordingly, a reduction in traffic congestion may result in an improvement in local air quality in these hotspot locations. Impacts on noise pollution at busy times are ambiguous because traffic can be expected to move faster (more noise) but more smoothly (less noise from repeated acceleration and deceleration).
- However, lane rental schemes can be expected to result in increased working at night or at weekends. Authorities would therefore need to consider how best to avoid unacceptable increases in noise in residential areas, and decisions about scheme design would need to take account of those impacts. Highway and environmental health departments would need to liaise closely on these issues to strike an appropriate balance between transport and environmental issues.

Small and Micro Business Assessment

- Lane rental charges would apply equally to all street works undertakers, regardless of size. The majority of costs fall on utility companies that maintain or update infrastructure which are not small or micro businesses.

Health Impact Assessment

- The lane rental regulations will not have a direct impact on health; however, to the extent that schemes improve air quality by reducing congestion, there could be indirect health benefits. Increases in night-time noise could have adverse health consequences if they affected residential areas, which is why engagement between lane rental scheme designers and Environmental Health Officers will be important

Rural Proofing Toolkit

- The lane rental regulations would apply equally to authorities in urban and rural areas. In practice, the places where works are most disruptive are often in the most congested urban areas, and so schemes in those areas are likely to deliver the greatest benefits. However, some inter-urban links and other rural roads also suffer high levels of congestion.

Competition Assessment

- Lane rental charges would apply equally to all street works undertakers (principally utility companies responsible for managing the infrastructure of utility services, i.e. electricity, gas, water and communications companies). This would include not just those who have a statutory right to place and maintain apparatus in the highway (e.g. under the Gas, Electricity, Water and Communications Acts), but also those who do so by virtue of a street works licence issued by the relevant local highway authority (e.g. those who operate small private utility supplies). In that sense, the Government does not anticipate an adverse impact on competition. However, by adding to the cost of installing new apparatus in the highway (e.g. to carry out customer connections), lane rental could have an impact on customers wishing (say) to switch from electricity to gas as their primary source of heating.

Equalities Impact Assessment

- The Government does not consider that there will be a direct impact on statutory equality duties. To the extent that any unavoidable costs arising from lane rental are passed through to utility bills, households for whom utility costs account for a higher-than-average proportion of their income could be proportionately more affected than others. But given the indirect and small scale nature of this impact, an Equality Impact Assessment is not considered necessary or proportionate.

9 Summary and preferred option with description of implementation plan.

We have developed the four options used in this consultation through informal discussions with a small number of stakeholders and because they would be viable and deliverable. These are viewed as the only viable options available at this stage. There are no non-regulatory options available that would achieve the same policy outcomes.

The options considered in this impact assessment are:

- Baseline Option (do nothing). This would mean that the London and Kent schemes would end in March 2019¹⁶ and no new schemes would be permitted.
- Option 1: Retain lane rental as it currently exists but only in London and Kent.
- Option 2: Roll-out lane rental to other local authority areas. The London and Kent schemes would also continue.
- Option 3: Use permit schemes to deliver the key objectives of lane rental. This would involve adding a new 'super permit' for works on the most congested local roads.

¹⁶ The DfT is also consulting on an interim measure of removing the existing sunset clause. If this is taken forward, lane rental would not end after March 2019 but at a sensible point in time if it is decided to not continue with the lane rental schemes e.g. when contracts have expired and operations could be wound-down without incurring excessive cost.

At this stage of consultation we do not have a preferred option as we are keen to keep our options open. We are intending to use the consultation process to reach a view on the preferred option for the implementation.

10 Post Implementation Review (PIR) plans (full template should be used for final IAs)

We do not plan to carry out further evaluation or review of the lane rental scheme. A full independent evaluation was carried of the pioneer schemes in 2016. Furthermore, we are not intending to include a new sunset clause.

Annex

Annex A: Data on Integrated Transport Authorities used in analysis:

	Traffic Million Vehicle Miles per year	Population	Estimated road work days
Kent	9,000	1,542,000	10,000
Tyne and Wear ITA	5,000	1,129,000	7,000
Greater Manchester ITA	11,000	2,782,000	16,000
Merseyside ITA	5,000	1,406,000	8,000
South Yorkshire ITA	6,000	1,385,000	8,000
West Yorkshire ITA	10,000	2,300,000	14,000
West Midlands ITA	11,000	2,865,000	16,000
South East	46,000	7,484,000	48,000

Annex B: List of local authorities in integrated local authorities:

Tyne and Wear ITA

- Gateshead
- Newcastle upon Tyne
- North Tyneside
- South Tyneside
- Sunderland

Greater Manchester ITA

- Bolton
- Bury
- Manchester
- Oldham
- Rochdale
- Salford
- Stockport
- Tameside
- Trafford
- Wigan

Merseyside ITA

- Knowsley
- Liverpool
- St. Helens
- Sefton
- Wirral

South Yorkshire ITA

- Barnsley
- Doncaster
- Rotherham
- Sheffield

West Yorkshire ITA

- Bradford
- Calderdale
- Kirklees
- Leeds
- Wakefield

West Midlands ITA

- Birmingham
- Coventry
- Dudley
- Sandwell
- Solihull
- Walsall
- Wolverhampton

South East ITA

- Bracknell Forest
- Brighton and Hove
- Buckinghamshire
- East Sussex
- Hampshire
- Isle of Wight
- Medway
- Milton Keynes
- Oxfordshire
- Portsmouth
- Reading
- Slough
- Southampton
- Surrey
- West Berkshire
- West Sussex
- Windsor and Maidenhead
- Wokingham