Cadent
Your Gas Network

Specified Streetworks Re-opener Submission

September 2024

Classification: Confidential

In this application we have redacted all costs information on the basis that this is commercially sensitive. Other areas have been redacted on the basis that information is considered sensitive.

Cadent
Your Gas Network

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Ofgem Requirement

The table below outlines where each chapter of this application relates to Special Condition 3.24 of our Gas Transporter licence as well as Ofgem's requirements as set out in Special Condition 9.4.

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Point of Contact

The table below provides a point of contact for this re-opener application should you wish to discuss any elements of it or have further questions. To ensure any correspondence is picked up in a timely manner, should the point of contact be out of office, please also copy in our mailbox referenced below.

Name	Position	Email	Telephone
[Personal Detail Info]	[Personal Detail Info]	[Personal Detail Info]	[Personal Detail Info]

Chapter 1.0
Executive Summary

This paper is Cadent's application to the Authority requesting an adjustment to our RIIO-GD2 allowances under the Specified Streetworks Costs Re-opener mechanism. This modification is necessary to recover the efficient costs of complying with obligations or requirements made pursuant to Part 3 of the Traffic Management Act 2004 (TMA) or any other streetworks legislation.

Cadent Gas Limited ("**Cadent**") are making a re-opener submission under 3.24 Specified Streetworks Costs Re-opener, Part C, Para 3.24.6 the opportunity to recover costs relating to permit schemes, lane rental schemes or requirements that have been imposed or are expected to be imposed on or after 1 April 2021.

In July 2020 [system] was introduced, and is used by every utility company, Highway Authority (HA) and its contractors in England to plan and manage road works. This has enabled us to work closely with the Highway Authorities operating in our networks to ensure minimal disruption for road users.

Almost every Highway Authority now operates a permit scheme which allows them to implement a set of national conditions through [system], to enable proactive planning and management of works and reduce congestion in the roads.

The costs identified relate to the activities and legislative changes as defined under Special Condition 3.24 of the License and cover:

- Parking Bay Suspensions (PBS) – Costs incurred for the payment of suspending parking bays to carry out works necessary for us to meet our statutory obligations
- Manual control of Traffic Lights (MTL) – Costs incurred for the payment of mandatory Manned Traffic Lights within HA's permit conditions

We have assessed the costs we have incurred so far during RIIO-GD2, and the costs we expect to incur over the remainder of the price control period and have determined that these costs will exceed the materiality threshold in our North London network only.

Our funding request is detailed in the below table:

North London Network	21/22	22/23	23/24	24/25	25/26	Materiality	Total (£m)
PBS (£m)	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]
MTL (£m)	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]		[cost data]
Total (£m)	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]		[cost data]

Figure 1 – Cost Summary tab – Appendix 1

The table above shows the costs we have actually incurred over the first three years of RIIO-GD2 and the remaining years have been forecasted based on these trends, with adjustments to reflect expected workload across our mains replacement and connections services that we deliver for our consumers.

These costs are the incremental costs beyond baseline allowances, a detailed breakdown is provided in Chapter 3.5.

Chapter 2.0
Alignment with our RIIO-GD2 business plan

Chapter 2.1 Alignment with our RIIO-GD2 business plan

The Specified Streetworks Re-opener was introduced in RIIO-GD1 to address the uncertainty in costs posed upon network operators when new Permit schemes, Lane Rental schemes, and/or other requirements were introduced by local Highway Authorities. This re-opener was then rolled over to RIIO-GD2 as the uncertainty around this workload remained.

Whilst it is fundamental that we continue to deliver a resilient network for both our consumers and stakeholders there is also a need for us to do this with a minimum level of disruption. This is deep rooted in our approach to Streetworks, and we continue to maintain good relationships with the Highway Authorities that operate in our Networks to ensure that this happens.

We have seen a material change in how local and Highway Authorities are administering Parking Bay Suspension charges from that in place when the business plan was set, with a subsequent material increase in costs and expansion in the areas these are implemented in. We have worked closely with the Highway Authorities to agree a best approach to this and have outlined this in Chapter 3.

We have also seen a significant rise in Local and Highway Authorities requirements and costs associated with Manually Controlled Traffic Lights and have outlined this in Chapter 4.

Chapter 2.2 Alignment with our future price control

In October 2023 the government published a consultation on amendment to legislation around the charges imposed on third parties carrying out works in some of the busiest roads. The consultation focussed on amending the 2012 lane rental regulations and requires authorities to spend at least 50% of any surplus lane rental funds on repairing potholes, whatever the cause. They suggested all English Highway Authorities adopted a lane rental scheme, and estimated this could represent up to an additional £107.5 million over 10 years for repairing potholes.

Though this new legislation has not yet been agreed, if this was passed this would mean a significant increase in Lane Rental charges across our Network. As a business we are carrying out analysis to understand the impact this could potentially have on associated Streetworks costs in RIIO-GD3.

It was agreed with the other GDN's through working sessions that the majority of this change will not be realised until RIIO-GD3 and therefore [sensitive information] can be attributed to this until the legislative change has been formalised.

We will continue to work closely with the Highway Authorities operating in our network to understand the impact of any proposed changes. Our focus remains on delivering a safe, resilient and efficient network for our consumers, in which we aim to do in both a timely manner and with minimal disruption.

We have, however, experienced an increase in requirements and associated costs for both Parking Bay Suspensions and Manually Controlled Traffic Lights and expect this to continue to increase through the next price control.

The expected rise in PBS costs can be attributed to the fact that the remaining locations for mains replacement will be more complex sites to work. As a result of this, parking suspensions will be required on the entirety of the projects, due to the nature of the works being in built up areas where greater disruption is likely.

Similarly Cadent expect to see Manually Controlled Traffic Lights continue to rise but are working to counter this by introducing more Smart and/or Intelligent Lights where allowed by the local authority as we have outlined in Chapter 4.1.

Throughout RIIO-GD3, Cadent will continue to develop and adapt its processes to ensure that they are fit for purpose in response to legislative changes affecting street works. Cadent will also maintain active engagement within the street works sector at all levels, working through local issues and contribute to shaping legislative changes through industry bodies such as Highways and Utilities Committee (HAUC) and Street Works UK for the benefit of Cadent and its customers.

Chapter 3.0
Parking Bay Suspensions

Chapter 3.1– Problem Statement and Needs Case

Given a large proportion of our works are in the highway and the footway, it is necessary for us to complete these within Parking Bays where these works fall within a Controlled Parking Zone (CPZ). A Parking bay is an area delineated by surface markings within which a Motor Vehicle may be positioned and parked. These areas tend to be residential areas where on street parking is quite often the only option and a yearly fee must be paid to the HA to park there.

The usage of dedicated Parking Bays for an extended period without permission would lead to the contravention of the Road Traffic Order and Road Traffic Regulation Act 1984 and can attract substantial fines enforced by law. We are therefore required to obtain Parking Bay Suspension (PBS) orders to allow us to make use of the bay to undertake and complete our works.

To suspend parking bays, undertakers are required to request a Temporary Traffic Regulation Order (TTRO) or Temporary Traffic Restriction Notice (TTRN) suspending any relevant Parking Order, together with the physical suspension of the metered bays, in advance of any proposed works.

Local authorities can charge in respect of cost recovery for such TTROs/TTRNs and metered parking bay suspensions under ss.150 to 153 of the Local Government & Housing Act 1989, and the Local Authorities (Transport Charges) Regulations 1998 SI 1998/948. The Highway Authority powers to designate, charge at, and regulate on street parking places are contained within the Road Traffic Regulation Act 1984 (mainly ss.45-49), with S14 providing the power to temporarily suspend such provisions because of road works or the likelihood of danger to the public.

The below tables compare the number of Parking Bay Suspensions required to be in place by London boroughs as assumed in our RIIO-GD2 Business Plan compared to the actual volumes we have been granted in the first three years of RIIO-GD2.

PBS volumes - RIIO-GD2 Business Plan submission vs. RIIO-GD2 actual volumes

	21/22	22/23	23/24	Total
RIIO-GD2 Business Plan PBS forecast	[redacted]			
Actual PBS granted				

Figure 2 – London Network PBS volumes (21/22 – 23/24)

The table above demonstrates that we needed to acquire [cost & security sensitive information] of PBS to complete the works than what was originally forecasted in our Business Plan.

This can be attributed to an increase in the work undertaken relating to our Iron mains replacement programme (IMRP). The requirement to enforce and extend PBS's has increased since the submission of our business plan and therefore this has led to increased costs.

We have seen significant increases in costs associated with Parking Bay Suspensions due to a change in how the Highway Authorities are applying the schemes. In particular the [cost & security sensitive information] and this can have a substantial impact on overall IMRP costs in the pursuit of reducing the cost impact we drive our planning teams and supply chain to utilise rolling bay suspensions and where possible utilise green space for our welfare units and muckaway areas.

As shown in Figure 5 PBS actuals for RIIO-GD2, the use of rolling Parking Bays and the pursuant of refunds has [sensitive information] per bay instance that we envisaged in our RIIO-GD2 business plan forecast. Had we not utilised these refunds our costs would have been considerably higher.

We have [cost information] and the impact they have in more detail in Chapter 3.5 Cost Information.

We have continued to build our relationship with Highway Authorities to mitigate the impact of parking bay suspensions both in terms of operational productivity and cost. Where a Highway Authority offers refunds for bays where we have exceeded forecast productivity, we have actively progressed these.

Chapter 3.2 – Options Considered

As part of our optioneering process, we identified three options that are considered when a Parking Bay Suspension is required.

The following methodology was used when determining the positives and negatives for each option:

- Does the option deliver business outcomes?
- What change impact does the option cause?
- How difficult is it to implement?
- Time to deliver and realise benefits
- Legal / regulatory compliance
- Overall impact of option

Option 1 – Defer non-emergency work (discounted)

In this option Cadent would look to defer most of the work that requires a PBS, with a view to complete within the next price control. This would be a minimal

approach and would see complex schemes put at risk. Although deferring a large proportion of the mains replacement until RIIO-GD3 might seem financially advantageous in the short term, offering immediate cost savings and easing the workload on our teams and partners, such an approach carries unacceptable risks. This approach would cause safety implications with pipelines falling into the safety critical category if not replaced and negatively impact our delivery of outputs we have committed to deliver for both the HSE and Ofgem. This would undermine our legal obligations to replace these pipes within a prescribed programme, bringing inefficiencies in the next price control and leave some of our consumers at risk. Delaying pipelines scheduled for replacement poses a heightened risk of failure.

Option 2 – Deliver PBS's in line with the IMRP, other Repex activities and wider network requirements (preferred option)

We work with the networks to ascertain what mains replacement work needs completing and when. Taking into consideration which mains would allow us to efficiently replace pipelines in the programme, whilst ensuring all PBS are accounted for. This option makes certain we remain on track with our IMRP whilst meeting our statutory and regulatory obligations and the demands of our consumers. We will continue to plan the IMRP in proactively, working closely with the HA's to complete works alongside other schemes, causing minimal disruption to the road users of the areas affected. As the IMRP is an ongoing commitment these schemes are planned well in advance with all requirements considered and accounted for.

Option 3 – Deliver all iron main replacements within CPZ's for London within this price control (Discounted)

We complete all iron mains replacement within CPZ's in London in this price control. Although this would decrease the need for PBS's in the next price control, this option would come at an inflated cost with much more resource required to carry out the work. We would be required to have many more PBS's in place to account for the work which would cause greater disruption across all the affected boroughs in London.

The below table denotes the optioneering matrix used for agreeing preferred option:

	#1 Defer non-emergency work	#2 Deliver PBS schemes in line with the IMRP, other Repex activities and wider network requirements	#3 Deliver all iron main replacement within a CPZ within this price control
Delivers business outcomes	Inadequate – Complex schemes would be deferred putting our IMRP delivery and network resilience at risk	Adequate – Our commitment to the IMRP would remain	Inadequate - Although this would meet business commitments, it would come at an inflated cost

Change impact	Moderate – works would need to be replanned at a later date	Minimal – All PBS's would be agreed in a linear fashion with the IMRP	Major – Greater resources would be needed to fulfil this option
Effort to implement	Moderate – Already planned work would need to be deferred	Minimal	Major – Sourcing enough resource to complete IMRP in a CPZ within last 18 months of RIIO-GD2 would not be possible
Time to deliver and realise benefits	Inadequate - Except for emergency works, works would be deferred to GD3, no benefits would be realised in this price control	Adequate - Work can be planned in once permit conditions are agreed with HA	Inadequate – The cost implications of this option far outweigh the benefits
Legal / regulatory Compliance	No	Yes	Yes
Overall impact	Inadequate - This would cause safety implications with pipelines falling into the safety critical category	Adequate – This option ensures we remain on track with our IMRP and delivering our business commitments for our consumers	Inadequate – This is not a viable option as we would be required to put significant closures in place causing much disruption to the boroughs of London

Figure 3 – PBS Options Analysis

Chapter 3.3 – Preferred option rationale and consumer benefit

Cadent has legal duties under the Health and Safety at Work Act to operate safely.

The Health and Safety at Work Act is enabling legislation under which there are several statutory implements such as the Pipeline Safety Regulations, which are relevant to our safety management of our pipeline systems.

The purpose of replacement is to proactively remove risk posed by gas mains and service pipes.

Option one to defer the work would see this risk increase making it completely unviable.

It would also undermine our IMRP that we are statutory obliged to deliver within an agreed programme.

By completing PBS's in line with the mains replacement programme, we are creating benefits to both consumers and members of the public by causing minimal disruption.

Proactively replacing all assets that require a parking bay suspension in period is impossible to deliver. First and foremost, the local authority would not grant us permission to replace all these areas at once. Second, the productivity and

resource implications would prevent us from delivering other regulatory commitments.

Therefore, option two is the most efficient and viable option, not only does it ensure we are maintaining a resilient and safe network, but it meets the demands and requirements of both the HA's and our consumers.

Given option two is the only option that meets the requirements of HA's, consumers and fulfils Cadent's legal obligations, the rise in PBS costs cannot be avoided.

We outline how we have worked with HA's to reduce these costs in Chapter 3.5.

Option 2 - Deliver PBS's in line with the IMRP, other Repex activities and wider network requirements	
Key Benefits	Potential Drawbacks
• IMRP is not compromised • PBS schemes in line with mains replacement will cause minimal disruption • Minimal effort to implement • Works are planned well in advance allowing us to negotiate refunds if anything changes • Current resources meet the requirements of this option • Rolling bays can be utilised for longer schemes	• Increased PBS costs as PBS charges increased • Changes to IMRP schemes could result in changes to PBS requirements • There could be some monetary loss for HA's that don't offer refunds if schemes are delayed

Affected consumers and assets

Cadent aspires to provide a safe and reliable gas supply to consumers and must understand and mitigate the risks posed by operating and replacing pipes within our networks.

Current resources are adequate for us to continue with this approach, there would be no requirement to increase resources to ensure IMRP stays on track.

Chapter 3.4 – Stakeholder Engagement

We have been working with GDNs through online working groups to get a consistent view of specific streetworks costs we are all facing that go beyond baseline allowances, this has included the introduction of new permit or lane rental schemes, changes in working practices implemented by authorities e.g. parking bay suspension and traffic management requirements as well as expected costs that could impact future price controls. It was through these working groups that

the areas of concern were realised and collaboratively a best approach was agreed.

Alongside this we regularly work with the HA's to agree best approach to the work we carry out ensuring minimal disruption to those affected locally by our works.

Chapter 3.5 – Cost Information

Throughout RIIO-GD2 we have seen significant increases in Parking Bay Suspension costs across both our [cost & security sensitive information]. We see an increase in per bay costs every year for each HA, both in terms of the bay itself and the admin charge associated with the bay.

The cost of PBS can vary between Highway Authorities, with different rates applied for daily and weekly requests as well as admin charges, as shown in the table below.

London Borough (correct as of 02/09/2024) for a single PBS:

Highway Authority	Daily charge	Weekly charge	Admin charge	Offer refunds
Barking & Dagenham	[cost data]	[cost data]	[cost data]	[cost data]
Ealing*	[cost data]	[cost data]	[cost data]	[cost data]
Barnet	[cost data]	[cost data]	[cost data]	[cost data]
Newham	[cost data]	[cost data]	[cost data]	[cost data]
Redbridge	[cost data]	[cost data]	[cost data]	[cost data]
Lambeth	[cost data]	[cost data]	[cost data]	[cost data]

Figure 4 – Highway Authorities charges example

**Where two values for a daily or weekly charges is shown, this is because if more than 7 days' notice is given the lesser charge applies.*

Admin charges can also vary, and where less than 7 days' notice is given the admin charge can significantly increase. The rates shown above are the standard admin charge where more than 7 days' notice is provided.

The table below details the actual volumes of PBS that were granted for London, the average PBS cost per mains replacement scheme and the total cost for the first three years of this price control.

RIIO-GD2 Year	Volume	Average cost per scheme	Total annual cost (£m)
21/22	[sensitive data]	[cost data]	[cost data]
22/23	[sensitive data]	[cost data]	[cost data]
23/24	[sensitive data]	[cost data]	[cost data]

Figure 5 – PBS actuals for RIIO-GD2

We can compare this to the table below, which shows the forecasted volumes and costs for PBS for London assumed in our RIIO-GD2 Business Plan.

RIIO-GD2 Year	Volume	Average cost per scheme	Total annual cost (£m)
21/22	[sensitive data]	[cost data]	[cost data]
22/23	[sensitive data]	[cost data]	[cost data]
23/24	[sensitive data]	[cost data]	[cost data]

Figure 6 – PBS totals as per the Business Plan

This demonstrates that although the [cost & security sensitive information], which has increased the overall costs.

The first factor is that the number of Parking Bay Suspensions required is significantly higher than what was first thought, this can be attributed to the fact that there were more parking bays affected on some of the more complex schemes then assumed in our original plan.

The second consideration is that we could not predict the change in application and level of administration costs that would be applied to the scheme costs and how these would vary so significantly between the HA's.

The third point to note is around the refunding of Parking Bay Suspension charges. If work requirements are changed and a Parking Bay Suspension is no longer needed for the original amount of time applied for, some HA's will allow a refund request to be processed. However, some HA's do not offer this service so if a scope to the work changes no refund can be given.

We have been efficient in pursuing refunds as and where we can and if a PBS is no longer required, we have applied for the refund, accordingly, reducing the cost of the overall mains replacement scheme.

Finally, we have also worked with the HA's to use rolling bay charges where possible. Rolling bay charges allow one total cost to be paid for a mains replacement scheme if it is affecting more than one bay but again not all HA's offer this service. By utilising refund and rolling bay costs we have been able to recover a good proportion of the costs associated with Parking Bay Suspensions.

Despite these efforts to minimise costs, due to the significant volume of PBS we are seeing and anticipate seeing through the remainder of RIIO-GD2, we expect to incur additional costs beyond what was included in our baseline allowance.

The table below denotes the number of refunds Cadent has applied for in years 1-3 of RIIO-GD2 and the total cost of refunds awarded;

	21/22	22/23	23/24
Number of refunds requested	[sensitive data]	[sensitive data]	[sensitive data]
Total cost (£m)	[cost data]	[cost data]	[cost data]

Figure 7 – PBS refund totals

As part of setting allowances for the RIIO-GD2 price control, Ofgem did not set out specific Parking Bay Suspension costs as part of our overall Streetworks costs.

Rather, funding for these activities was provided through baseline Totex allowances. However, as Ofgem assessed Streetworks costs (and Parking Bay Suspension costs as part of these) via a non-regression/separate approach we have been able to calculate the allowance for Parking Bay Suspension – i.e. the portion of Totex allowances given in our baseline – for these for use within this re-opener application.

To do so we have utilised Ofgem's RIIO-GD2 Streetworks model to replicate the approach to assess costs at a disaggregated level – and specifically for Parking Bay Suspensions. We have then applied the equivalent adjustments Ofgem made to total allowed Streetworks costs when rolling these into baseline allowances from their Streetworks model with the remainder of Totex.

These comprise of: (i) applying applicable net:gross cost ratios at an activity level (e.g. Repair, Maintenance, ODA, Connections and Repex) to translate an assessed Ofgem's gross cost allowance to a net cost allowance (ii) applying Ofgem's 'catch-up' efficiency challenge – set at the 85th percentile (applied to non-regression assessed costs) and (iii) reducing costs for Ofgem's ongoing efficiency assumptions.

This has allowed us to determine an assumed allowance, as set out below, and used these values to ascertain Cadent's incremental Repex cost against Parking Bay Suspensions for our North London network.

We cannot currently demonstrate a material increase in costs for our repair, maintenance, other direct activities (ODA) and connections workstreams. For this reason, our application relates to Repex works activities only.

	Implied allowance – Parking Bay Suspensions, 18/19 prices (£m)						
	21/22	**22/23**	**23/24**	**24/25**	**25/26**	**RIIO-GD2**	**Average**
Repair	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]
Maintenance	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]
ODA	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]
Connections	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]
Repex	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]

	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]

Figure 8 – Appendix 01 RIIO-GD2 PBS allowances

The table below outlines the actual PBS volumes for years 1, 2 and 3, and forecast volumes for years 4 and 5.

The table also shows the actual and forecast cost for PBS compared with the assumed Repex allowance, and the incremental spend);

	21/22	**22/23**	**23/24**	**24/25**	**25/26**	**Total**
Number of PBS	[sensitive data]	[sensitive data]	[sensitive data]	[sensitive data]	[sensitive data]	[sensitive data]
Allowance (£m 18/19)	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]
PBS spend (£m 18/19)	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]
Incremental cost (£m 18/19)	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]
Incremental cost inc. Overhead (£m 18/19)	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]

Figure 9 – PBS volumes, allowances, spend and incremental cost

Please see Appendix 01 Streetworks cost tracker for a full breakdown of the costs associated with North London Parking Bay Suspensions.

Chapter 4.0
Traffic Management (Manually Controlled Traffic Lights)

Chapter 4.1– Problem Statement and Needs Case

Our works often require us to excavate in the highway and to do this we are required to obtain a permit from the Highway Authority. The permit will be subject to several conditions, including timing and duration conditions, road space conditions, traffic management conditions and site requirements.

As part of the Traffic Management (TM) conditions we have seen a significant rise in the requirement for manually controlled traffic lights, which come at a greater additional cost than if using temporary lights on their own with no supervision.

Manually controlled traffic lights require an operative to be on site to ensure the lights are functioning correctly and/or to stand with a 'Stop/Go' board indicating which side of the traffic can move and when. This becomes a 'mandatory' condition when the HA stipulates it as a permit condition and if the lights cannot be manually controlled the permit cannot be approved**.**

The reasoning for this increase can be contributed to an increase in vehicles on the road, increased pressure on transport services and an increase in road traffic collisions (RTCs). Using this approach eliminates the risk of lights malfunctioning causing delays not just in the immediate vicinity but on surrounding road networks.

Throughout RIIO-GD2 in London, we have found that we are required to have manual traffic light control on site for more hours each day compared to the other networks. This is largely due to the number of commuters using the road networks in and around London and the pressure HA's are under to keep the traffic moving. This comes with extra costs as we need to ensure that worker conditions are met, including relief breaks, shift changes and other means that require more than one operative to be used for supervision. This will see further increases in costs compared to other networks as costs for these areas in London are higher.

Highways authorities are seeing their networks occupied close to full capacity and we expect that this will continue as the amount of Streetworks, and road works continue to rise. With this, disruption on the network is a concern for the HA's and the requirement for manual control may increase to ensure that disruption is kept as minimal as possible.

We continually work with the HA's to reduce the need for Manually Controlled Traffic Lights by using Smart and/or Intelligent lights.

Smart traffic lights or Intelligent traffic lights are a vehicle traffic control system that combines traditional traffic lights with an array of sensors and artificial intelligence to intelligently route vehicle and pedestrian traffic. They can form part of a bigger intelligent transport system.

There has been some pushback on their use as these can still face technical issues, however as technology advances, we hope these can be utilised on a greater number of Cadent's excavations. As a matter of course we will always attempt to use smart traffic lights subject to the permission of the HA.

Chapter 4.2 – Options Considered

As part of our optioneering process, we identified three options that are considered when Manually Controlled Traffic Lights are required.

As with Parking Bay Suspensions, the following methodology was used when determining the positives and negatives for each option:

- Does the option deliver business outcomes?
- What change impact does the option cause?
- How difficult is it to implement?
- Time to deliver and realise benefits
- Legal compliance
- Overall impact of option

Option 1 – Defer non-emergency work (discounted)

This option would see us look to defer most of the work where Manually Controlled TM has been stipulated as mandatory, with a view to complete within the next price control. As with PBS this would be a minimal approach and would see complex schemes put at risk. As described earlier deferring a large proportion of the mains replacement until RIIO-GD3 might seem financially advantageous in the short term, offering immediate cost savings and easing the workload on our teams and partners, such an approach carries unacceptable risks. Not only would this approach cause safety implications with pipelines falling into the safety critical category if not replaced, it could also cause us reputational damage, where we would be seen to be 'cherry picking' work based on the technicalities of the permit condition. This would also undermine our legal obligations, bringing inefficiencies in the next price control and leaving some of our consumers at risk. Delaying pipelines scheduled for replacement poses a heightened risk of failure, threatening the integrity and safety of our entire London network.

Proceeding with this option would still lead to us incurring the costs associated with the works, only later when the works are completed, and therefore we would expect these to be at an inflated rate given a trend in increased streetworks requirements. For example, the expected increase in the number of Lane Rental schemes and other requirements, the expectation would be that this option would be considerably more expensive if we decide to complete the works in the next price control.

Option 2 – Only use Manually Controlled Traffic Lights when the HA stipulates as mandatory (preferred option)

We would continue to strengthen relationships with the HA's, adhering to the permit condition as necessary and mandating manned traffic lights as and where required. It is understandable that due to the huge flow of traffic and pedestrians within the London network that some areas must have Manually Controlled Traffic Lights to ensure minimal disruption when excavation works are required. We would look to utilise Smart and/or Intelligent lights where possible to ensure traffic remains stable and working with the HA's agree which schemes these can be used on to reduce further elevated costs.

Option 3 – Use Manually Controlled Traffic Lights on all excavations as standard (discounted)

This option would see us use Manually Controlled Traffic Lights on all excavation works as standard. Whilst this would ensure minimal disruption on all excavations it would come at an inflated cost. As outlined in option two there will always be a requirement for some of the busier road networks to need manned traffic lights, but this is not true of all roads across the London network. This would be inefficient overall and would see costs associated with TM hugely increase across both RIIO-GD2 and future price controls.

The below table denotes the optioneering matrix used for agreeing preferred option:

	#1 Defer non-emergency work	#2 Only use Manually Controlled Traffic Lights when the HA stipulates as mandatory	#3 Use Manually Controlled Traffic Lights on all excavations as standard
Delivers business outcomes	Inadequate – Complex schemes would be deferred putting our IMRP at risk	Adequate – We would meet the expectations of both the HA's and our consumers	Inadequate - Although this would meet business commitments, it would come at a hugely inflated cost
Change impact	Moderate – works would need to be replanned at a later date	Minimal – All permit conditions would be met with minimal disruption to the road users	Moderate – Further resources would be required to deal with the inflated number of manned TM
Effort to implement	Moderate- replanning our workstack around this would cause major disruption	Minimal – Works would continue as they have in RIIO-GD1	Moderate
Time to deliver and realise benefits	Inadequate - Except for emergency works, works would be deferred to GD3, no benefits would be realised in this price control	Adequate - Work can be planned in once permit conditions are agreed with HA	Inadequate – The cost implications of this option far outweigh the benefits
Legal Compliance	No	Yes	Yes

Overall impact	Inadequate - This would cause safety implications with pipelines falling into the safety critical category	Adequate – This option ensures we remain on track with our IMRP and delivering our business commitments for our consumers	Inadequate – This is not a viable option as Manually controlled TM on all excavations would come at a huge cost, making overall scheme costs far more inefficient

Figure 10 – Manually Controlled TM Options Analysis

Chapter 4.3 – Preferred option rationale and consumer benefit

Cadent has a legal duty to ensure that the pipelines we operate remain safe and fit for purpose to meet our statutory obligations.

For us to do this we are required to carry out excavation work through obtaining a permit which will be subject to mandatory conditions, which must be adhered to for it to be approved.

One of the conditions we are seeing a significant increase in is the requirement for traffic lights to be manually controlled by an operative, and more notably the hours in which they are having to be manually operated (all day as opposed to core road traffic hours) is also increasing year on year.

Option one is not a viable choice as it would be irresponsible and could heighten the risk of serious pipeline fractures and/or serious gas incidents by deferring the work. It would also push many of our pipelines into the safety critical category leading to serious issues further down the line.

Whilst option three would satisfy the increasing requirement for Manually Controlled Traffic Lights and ensure the lowest level of disruption possible on all excavation works it would come at a much greater cost. On quieter roads where standard traffic lights would be sufficient it would mean we are paying an operative to control the traffic when there isn't a requirement or demand for it.

This option would also put significant pressure on operative resources, and these would need to be tendered for us to meet the demand.

Therefore, the preferred option is to only use Manually Controlled Traffic Lights when the HA stipulates them as a mandatory requirement. This option will see us satisfy the needs of both the HA's and the road users affected by our excavation works, ensuring that the busiest areas are well managed and that the flow of traffic can remain consistent.

We have determined option two to be the most efficient as it will ensure minimal disruption to the busiest roads in London but would not come at the huge cost of having Manually Controlled Traffic Lights on every excavation completed.

Option 2 - Only use Manually Controlled Traffic Lights when the HA stipulates as mandatory	
Key Benefits	Potential Drawbacks
• IMRP is not compromised • Meets expectations of HA's • Minimal effort to implement • Disruption levels for the busiest roads are kept to a minimum • Current resources meet the requirements of this option	• Would not avoid lighting faults on **all** excavations • Although not common, if schemes are changed there may be some monetary cost lost for manually controlled lights already paid for

Affected consumers and assets

Similarly to PBS the affected consumers are the HA's, road users, and general public in the vicinity of the works.

Our priority focus remains on providing a safe and reliable gas supply to our consumers. To do this, we must undertake excavation works on our mains to ensure the integrity of our network remains.

We will always look to do this efficiently whilst causing the least disruption possible to those affected by our works.

Chapter 4.4 – Stakeholder Engagement

As outlined in Chapter 3.4 we have been working closely with the other GDN's to ascertain what issues they are facing regarding Streetworks and which of these could have the potential to be included in the re-opener.

It is our understanding that other networks have also seen a significant rise in the number of mandatory Manually Controlled Traffic Lights as part of permit conditions and will also be looking to recover these costs.

We will continue to engage with the other GDN's as we move towards the next price control to agree best approach with any upcoming legislative changes expected to impact Streetworks.

Chapter 4.5 – Cost Information

Throughout RIIO-GD2, we have seen a significant rise in the costs associated with Manually Controlled Traffic Lights.

As outlined in Chapter 4.1, not only are we seeing a rise in Manually Controlled Traffic Lights as a mandatory permit condition but also the hours with which they must be manned. Traditionally, Manually Controlled Traffic Lights would be expected on only the busiest roads and within the peak traffic hours, for example 8am-10am and 3pm-6pm. More frequently now we are seeing the requirement of manually controlled traffic lights for much lengthier periods, for example from 7am to 7pm, this results in a much higher cost.

With deferring the work not being a viable or responsible solution, we have no choice but to adhere to the permit condition and accept these hugely inflated costs.

The costs demonstrate how much annually Manually Controlled Traffic Light charges are increasing year on year, as above this is largely due to the requirement for Operatives on site for much longer periods then have historically been seen. With little to no legislation in place, HA's can continue to increase the requirement for manned traffic lights and the hours in which they must be manned as they choose to.

Whilst we will continue to work alongside the HA's to ensure best practices remain in place, the only viable option we have currently is to pay the charges to ensure we are maintaining a safe and resilient network for our consumers.

We have provided actual costs for years one to three and used this to ascertain the average rise seen across the three years to form an assumption of an average rise of [sensitive data] MTL days hire per year and applied this to our forecast for years 4 and 5.

We have calculated [sensitive data] in years four and five to determine the forecast.

As we are not able [sensitive data] for the manual control of traffic lights, we have used [sensitive data] and have included a request for recovery for only the [sensitive data] for years 2-5. An alternative would have been to request [sensitive data].

The table below outlines the actual Manually Controlled Traffic Lights volumes, total cost and incremental costs for years 1-3 and the forecast volumes and incremental costs for years 4 and 5;

	21/22	22/23	23/24	24/25	25/26	**Total**
Number	[sensitive data]	[sensitive data]	[sensitive data]	[sensitive data]	[sensitive data]	[sensitive data]
Total cost £m (18/19)	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]
Incremental £m (18/19)	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]
Incremental inc. overhead £m (18/19)	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]	[cost data]

Figure 11 – Manually Controlled TM volumes total cost and incremental cost rig

For a full breakdown of Manned Traffic Light costs please see Appendix 01 Streetworks cost tracker.

Chapter 5.0
Appendices

Chapter 5.1 Supporting Documents

- **Appendix 01**: [cost information]

Chapter 5.2 – Glossary of Terms

Acronym	Description
BAU	Business As Usual
COO	Chief Operating Officer
CPZ	Controlled Parking Zones
HA	Highway Authorities
HAUC	Highways and Utilities Committee
HSE	Health & Safety Executive
IMRP	Iron Mains Replacement Programme
MTL	Manned Traffic Lights
PBS	Parking Bay Suspension
RTC	Road Traffic Collision
SHES	Safety, Health and Environmental Management
SLA	Service Level Agreements
[system]	[system]
TfL	Transport for London
TLO	Traffic Light Operative
TM	Traffic Management
TMA	Traffic Management Act
TTRN	Temporary traffic Restriction Notice
TTRO	Temporary traffic Restriction Order
WBS	Work Breakdown Structure