

**REPORT FOR THE BROADBAND
STAKEHOLDER GROUP**

LOWERING BARRIERS TO TELECOMS INFRASTRUCTURE DEPLOYMENT



MAY 2017

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Foreword from the BSG

The deployment of telecoms networks must be delivered as efficiently as possible, to ensure better coverage, capacity and quality networks for the benefit of consumers and businesses across the UK.

The UK is at the start of another investment cycle in telecoms networks which will lead to the deployment of fibre networks with the last hop, whether it is a small cell or a fixed line that is closer to the user. This will require new equipment and fibre cables to be installed underground and antennae to be placed on the sides of buildings. These networks will deliver new transformative services so it is crucial that telecoms operators' investment decisions are not inhibited by barriers.

The UK has benefited from several legislative and regulatory reforms recently aimed to help lower the costs of deploying and upgrading telecoms networks. These include reforms to the Electronic Communications Code, the implementation of the EU Broadband Cost Reduction Directive¹ and Ofcom's Digital Communications Review.² These have been accompanied by substantial public (via BDUK) and private investment in next-generation access technologies.

The Government has also recently committed to a strategy revolving around fibre and 5G and has recently earmarked an additional GBP1.1 billion to stimulate further fibre roll-out and future 5G communications across the country within the next five years.³ A new 100% business rates relief, although only applicable to new full-fibre infrastructure, was a welcome addition to this set of measures.⁴

Whilst these regulatory and policy developments are stimulating private-sector investment, other barriers to telecoms infrastructure deployment remain.

Telecoms operators have recently been hit by a four-fold increase in the rateable value of their assets (business rates applicable to assets other than new full-fibre infrastructure),⁵ and access to infrastructure is still covered by a wayleave regime which is far from streamlined. In addition, specific practical issues surrounding the planning process of deployment across the country have been known to result in delays in households and businesses being connected.

¹ The EU Directive on measures to reduce the costs of deploying high-speed electronic communications infrastructure (2014/61/EU) implemented in the UK via the Communications (Access to infrastructure) Act 2016 and the new Part R of the Building Regulations.

² See Ofcom Digital Communications Review; available at <https://www.ofcom.org.uk/phones-telecoms-and-internet/information-for-industry/policy/digital-comms-review>

³ See the UK Digital Strategy, Networks of the Future: full fibre and 5G; available at <https://www.gov.uk/government/publications/uk-digital-strategy/1-connectivity-building-world-class-digital-infrastructure-for-the-uk#networks-of-the-future-full-fibre-and-5g>

⁴ See HM Treasury Autumn Statement; available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/571559/autumn_statement_2016_web.pdf

⁵ In September 2016, the Valuation Office Agency announced a fourfold rise in taxes on the value of real estates, affecting telecoms infrastructure. A 100% business rates relief, only applicable to full-fibre infrastructure, was announced in November 2016.

However, much of the evidence concerning the nature of these barriers is anecdotal. In order to gain a better understanding of these barriers, and their potential solutions, the Broadband Stakeholder Group commissioned Analysys Mason to undertake a study to address the evidence gap and to propose solutions.

Analysys Mason's report is based on interviews with local authorities of various sizes and varying regulatory powers as well as telecoms operators. The report focuses on noticing and permit schemes, restriction notices, road traffic management and planning permission. The report identifies 19 specific issues deriving from local authorities' practices in implementing legislation, and operators' level of engagement with local authorities. Notably, it finds variations in how local authorities deliver permit and notice schemes, with as many as 25 different permit schemes in place across 90 local authorities. Local authorities' practices also vary with regard to the assessment of the suitability of deployment techniques (such as micro-trenching) even though these techniques could speed up the roll-out of infrastructure.

The report provides a comprehensive overview of the complexity of the legislation that governs such areas. Given this, the BSG believes that it is unlikely that there is a single magic bullet to solve these challenges, particularly as local authorities clearly recognise at a central level the need to have good quality digital communication networks in their local areas. Local authorities too feel frustrated with the current state of play, and the report highlights areas where operators and local authorities could improve and develop their collaborative work processes.

In the absence of a magic bullet however, there are a multitude of incremental steps, cutting across different levels of Government, that could be taken to reduce delays in the provision of networks to households and businesses across the UK, as well as to encourage innovation in the use of new deployment techniques. Cumulatively, these marginal gains could add up to more than the sum of their parts, resulting in better outcomes for consumers and businesses across the UK.

Building on this premise, the BSG believes that Central Government has a key role to play in driving these changes. We believe a **cross-Departmental unit within Government should be set up to break down barriers to broadband network** deployment, using this report as a basis. Particular focus should be levied on the way permit schemes are currently implemented across the UK and whether clearer guidance could be set. Where local authorities are able to take action on this individually or collectively, then we strongly urge them to do so.

Some of the challenges highlighted in the report are built on behavioural rather than structural issues which is why the BSG also believes that **Government should work with industry to develop a fully-fledged digital communications infrastructure strategy**. This will help align policies across Government to deliver the outcomes within the strategy.

Whilst the report predominantly highlights issues that could be dealt with by changes in how local authorities and telecoms operators interact, **it also presents practical solutions and examples of good practice which could be adopted by all stakeholders involved in this intricate process**. For

example, local authorities and telecoms operators could work together on developing community engagement packs.

One key take-away from the report is the need to promote a consistent level of communication between local authorities and telecoms operators. Some local authorities may lack human resources dedicated to planning matters affecting broadband roll-out, resulting in delays in the planning process and the loss of the real-life expertise that the authority would gain from a complex regulatory environment. **It is therefore important that Government and local authorities consider taking steps to create a single point of contact for telecoms operators within each local authority.**

Finally, **the BSG believes that further research needs to be carried out to understand some local authorities' uncertainty associated with innovative deployment techniques**, such as micro-trenching. **Official guidance needs to be reviewed in line with progress made in the improvement of these techniques.**

The BSG believes that this report provides a solid base to improve the ease and cost of digital communications infrastructure deployment in the UK. We will work with Government and local authorities and telecoms operators to implement these changes and the adoption of best practice. We appreciate that there are a number of areas that we excluded from the remit of the report, including wayleaves, business rates, access to energy and potential barriers to small cell deployment. We will be looking to conduct further work in some of these areas in the future.

Matthew Evans

CEO, Broadband Stakeholder Group

1 Executive summary

Deploying new telecommunications infrastructure is a high priority for the UK Government, with public and private investment expected to exceed GBP1 billion as part of the National Productivity Investment Fund (see Autumn Statement⁶ 2016) and actions to help promote greater long-term investment in digital infrastructure, such as new rights for telecoms operators in the electronic communication code.⁷ Against this backdrop, Analysys Mason was commissioned by the Broadband Stakeholder Group (BSG) to consider the process of deploying and maintaining telecommunications infrastructure from both operator and local authority (highways and planning) perspectives.

We explored the current practices affecting network deployment with a focus on four key areas under the jurisdiction of highway authorities, or planning authorities:

- noticing and permit schemes
- restriction (e.g. Section 58) notices
- road traffic management
- planning permission.

Through desk research and interviews with a selection of telecommunications operators and the highways and planning departments of a range of local authorities, **Analysys Mason has identified 19 specific issues that are likely to have a negative impact on the deployment of telecommunications infrastructure, meaning that investment and hence coverage are likely to be lower than they could be.**

Telecoms operators and local authorities all acknowledged issues existed and our recommendations are directed to the organisations that are best placed to address those issues, including the UK Government (and devolved governments where applicable). **Some of the issues could have significant implications affecting government policy, such as the full-fibre ambitions in the UK's digital strategy.**⁸

Across the areas in the scope of work there is a complex diversity of legislation, both at a national level, and at the local and regional level. Overall, we found that legislation varied considerably in the way it is implemented. For example, permit schemes for street works are implemented regionally (e.g. for all authorities in the Yorkshire and Humber region) and locally (e.g. for city and county authorities). For telecoms operators, many of which operate on a national level (unlike most utility companies which operate regionally), we identified 25 permit schemes operating across more than 90 local authorities (and the number of permit schemes is increasing) that they must manage, as well as the requirements for noticing schemes in operation in other areas. Within the permit schemes, we

⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/571559/autumn_statement_2016_web.pdf

⁷ <https://www.gov.uk/government/publications/government-publishes-proposals-for-a-new-electronic-communications-code>

⁸ See <https://www.gov.uk/government/publications/uk-digital-strategy>; the UK Government believe that the future of high-speed and high-quality connectivity lies in deeper, more extensive fibre networks

have found **inconsistencies in the way guidance is interpreted and a desire from both telecoms operators and local authorities for a more uniform approach.**

Given the variations in responses from telecoms operators and local authorities, there is a level of uncertainty with some of the findings, but nevertheless we gathered sufficient information to make recommendations, including for:

- The UK Government⁹ to reduce the number of, and variations between, permit schemes for street works, to make them more suitable for large-scale network deployments and to consider publication of performance scorecards for local authorities, which should reduce the overall fee burden, particularly on less traffic-sensitive roads.
- The UK Government to analyse the potential overuse of street works restriction notices and inconsistency of notice periods and fees for road traffic management, including advertising requirements.
- The UK Government to review micro-trenching and similar techniques of network deployment to understand why there are inconsistencies in how highway authorities assess the suitability of such techniques and make decisions that prevent or delay their use, and to update guidance accordingly.
- The UK Government and highway authorities to review current practices to assess fees, restriction conditions, road classifications, traffic-sensitive street designations, embargo periods, reinstatement obligations, and outsourcing arrangements.
- Telecoms operators and highway authorities to improve street works planning such as by introducing site visits, and improving the quality of workmanship by subcontractors such as by increased monitoring and incentives for quality of delivery.
- Telecoms operators and planning authorities to engage early in the deployment planning process and work closely to prepare plans for siting of equipment.
- Telecoms operators to incorporate early engagement with all local authorities as a standard part of their deployment planning process to share information about their deployment plans.

Overall, our recommendations are intended to help achieve the significant economic and social benefits that deployment of next-generation telecoms network infrastructure, such as full-fibre to customer premises and 5G networks, can bring to citizens and businesses alike.

⁹ Based on our understanding of the issues, the UK Government department that should consider these recommendations is the Department of Transport.

2 Introduction

2.1 Background and objectives

The Broadband Stakeholder Group (BSG) is a collaborative industry-government organisation, working on complex, industry-wide issues to improve the functioning of the UK broadband market. Deploying new telecommunications infrastructure is a high priority for the UK Government, with public and private investment expected to be in excess of GBP1 billion as part of the National Productivity Investment Fund (see Autumn Statement 2016).¹⁰

Against this backdrop, the BSG identified five potentially significant areas that inhibit infrastructure deployment and commissioned Analysys Mason to identify the issues in practice, and to propose ways to address four of them (those within the jurisdiction of highways and planning authorities); the over-arching objective for all issues is to identify ways to reduce friction in the market and lower barriers to deployment.

2.2 Scope and approach

In agreement with the BSG, we considered the legislation and current practices¹¹ affecting network deployment with a focus on four areas under the jurisdiction of highways or planning authorities:

- noticing and permit schemes
- restriction (e.g. Section 58) notices
- road traffic management
- planning permission.

We also briefly considered requirements for access to power (the fifth area) to define the scope for potential future assessment. Wayleaves and business rates are also recognised barriers to deployment, but these issues were explicitly excluded from the scope of this project.

As the means of gathering information, we used desk research and undertook 18 interviews with a selection of telecoms operators and the highways and planning departments of a range of local authorities. The information gathered has been anonymised.

We selected local authorities for interview based on attaining representation across a range of characteristics, reflecting the complex mix of environments that telecoms operators have to manage. These characteristics are summarised in Figure 2.1 below.

¹⁰ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/571559/autumn_statement_2016_web.pdf

¹¹ Note that the project did not intend to scrutinise the legislation and existing practices in depth, but to highlight the issues that have most impact on broadband network deployment and recommend further in-depth analysis and/or review.

Characteristic	Variations represented by interviews
Geography	Urban / Rural
Street works management scheme	Notice / Permit / Mixed
Management approach	In-house / Outsourced
Local authority type	Unitary / Two-Tier
Legislative region	England & Wales / Scotland

Figure 2.1: Summary of local authority characteristics represented in the interviews [Source: Analysys Mason, 2017]

The focus during interviews was on new infrastructure deployments rather than smaller ad-hoc works, e.g. regular maintenance.

It was noted by some local authorities that telecoms operators are unusual in having national networks rather than regional networks, so telecoms operators have many more local authorities to engage with compared to other statutory undertakers such as utilities, which tend to operate on a regional basis.

Whilst we have been commissioned by the BSG and the member operators to produce this report, we have undertaken the project as an independent adviser to give views from both operator and local authority perspectives.

2.3 Report structure

The remainder of this document is laid out as follows:

- Section 3 defines the terms and legislation relevant to the project
- Section 4 describes our detailed findings
- Section 5 provides a summary of our recommendations.

3 Definitions and legislation

3.1 Definition of terms

In all legislation regarding street works, the term ‘statutory undertaker’ is used by local authorities to denote an organisation with the right to undertake street works. In this report, the terms statutory undertaker, utility company and telecoms operator are used synonymously.

The term ‘local authority’ is used to denote a highway authority or planning authority, which may be the same entity, e.g. a city council, or different entities, e.g. a county council may be the highway authority while a number of district councils are the planning authorities. The local authority situation varies throughout the UK. For highways, we did not consider the non-local highway authorities such as the Highways Agency in England.

In the remainder of this section, we describe our understanding of the schemes and processes relevant to the project scope.

3.1.1 Noticing and permit schemes

Noticing schemes were introduced by the New Roads and Street Works Act (NRSWA) in 1991 and The Street Works (Northern Ireland) Order in 1995. Under a noticing scheme, an operator is required to give notice to the local authority a set period before commencing works. There are no fees associated with a noticing scheme, and a local authority can at its discretion alter planned works by directing the timing to reduce disruption, e.g. using Section 56 (England & Wales). In Scotland, noticing schemes are the only scheme available to local authorities.

Permit schemes were introduced for England & Wales by the Traffic Management Act (2004) and The Traffic Management Permit Scheme (England) Regulations 2007. In Northern Ireland, they were introduced by The Roads (Miscellaneous Provisions) Act for Northern Ireland (2010). When a permit scheme is in operation, operators are required to apply to the local authority for permission before starting work. Local authorities can choose which roads within their area the permit scheme applies to, although it is envisaged that 100% of a local authority’s roads will be covered by a permit scheme. Any roads not covered by a permit scheme will still be covered by a noticing scheme.

Whilst the scale and scope of noticing schemes are well defined, permit schemes can be varied (after a statutory consultation process) to suit local differences. Although based on common legislation and guidance, there are variations between permit schemes. The schemes seek to find a balance between the need of the local authority to manage its road network and the needs of statutory undertakers to maintain and expand their networks of equipment.

It is possible for an authority to operate a mixed regime whereby both a noticing and a permit scheme exists, with the permit scheme applicable to defined roads and all other roads using the noticing scheme.

Local authorities can apply conditions to the operators before granting the work permit and are permitted to charge fees for permit applications. However, these fees are limited to recovering the extra costs of running the permit scheme i.e. costs above those for running a noticing scheme. Local authorities are specifically prohibited from charging more than the maximum allowable fees and are strongly encouraged by the official guidance to apply some form of discount structure to promote good practice by operators. There are fees for permit variations if the change in the permit is requested by the operator (e.g. a change in the deployment schedule resulting in new dates for the street works), but not if requested by the local authority.

Prior to 2015, local authorities had to apply to the Secretary of State for permission to introduce a noticing scheme. Under the Deregulation Bill (2015), this requirement was replaced by statutory guidance issued by the Department of Transport (DfT) for introducing a permit scheme.

Road categories

Roads are categorised by traffic capacity, which is defined by their capacity for carrying million standard axles (msa)¹². The category of a road is determined based on the expected traffic to be carried by each road over a 20-year period. Traffic rates are assessed by monitoring commercial vehicles weighing more than 1.5 tonnes un-laden. Road categories and the national proportion of roads in each category is provided in Figure 3.1.

Figure 3.1: Road categorisation and distribution [Source: Specification for the Reinstatement of Openings in Highways, 2010]

Road category	Traffic capacity	Percentage of total roads
Type 0	over 30 to 125msa	<1%
Type 1	over 10 to 30msa	<1%
Type 2	over 2.5 to 10msa	<5%
Type 3	over 0.5 to 2.5msa	<9%
Type 4	up to 0.5msa	>84%

Network management duty

The Traffic Management Act (2004) gave local authorities a ‘network management duty’ and outlined the role of a traffic manager to perform this duty. Local authorities were empowered to “make such arrangements as they consider appropriate for planning and carrying out the action to be taken in performing the network management duty” – leaving wide scope for interpretation of the Act. The network management duty is very loosely defined – “secure the expeditious movement of traffic on their road networks”. Traffic managers must consider the needs of all road users, including utilities, when carrying out their network management duty.¹³ If a local authority fails in

¹² msa is a unit of measurement used to estimate structural wear to a road.

¹³ <http://webarchive.nationalarchives.gov.uk/+/http://www.dft.gov.uk/pgr/roads/tpm/tmaportal/tmafeatures/tmapart2/tmafeaturespart2.pdf>

its duty, a traffic director may be appointed by the Secretary of State to intervene and manage on the authority's behalf.

Transport for London Lane Rental Scheme (TLRS)

The TLRS is a charge for occupation of road lanes that was introduced by Transport for London (TfL) in London in 2012 to control street works at “traffic sensitive times at the most traffic sensitive locations”. If an operator requests permission to perform street works under the permit scheme and the road is covered by the TLRS, the operator is required to pay an additional fee if it wishes to work within traffic-sensitive periods. The charges are per day, not per hour, therefore if a carriageway is occupied for one hour during a traffic-sensitive period, then the operator will be charged a fee for the full period. A selection of fees and traffic-sensitive hours is presented in Figure 3.2 below.

Figure 3.2: Selection of traffic sensitive hours and fees under the TLRS [Source: TFL Lane Rental Benefits Report November 2016]

Charge band	Type	Daily charge (GBP)	Typical hours Monday–Friday	Typical hours Weekend
1	Segment	800	06:30–10:00 15:30–20:00	12:00–18:00
2	Segment	2500	06:30–22:00	12:00–18:00
3	Pinch-point	2500	07:00–20:00	12:00–18:00

3.1.2 Post-works restriction notices after major works

In all legislative areas, once a road has been resurfaced a local authority can place an embargo on that road to prevent further works for a period of up to five years (see Figure 3.3 below for a summary of the maximum embargo periods in England and Wales). In England and Wales, this is under Section 58 (and Section 58A) of the NRSWA (1991), in Scotland this is under Section 117 of the NRSWA (1991), and in Northern Ireland this is under Section 18 of the TSWO (1995). Once operators receive warning that a post-works restriction is going to be implemented, they are expected to coordinate with the council to ensure that the council is the last to work on the road.

Figure 3.3: Summary of maximum periods under Section 58 of the NRSWA (1991), as modified by the Traffic Management Act (2004) [Source: Traffic Management Act, 2004]

Classification	Traffic sensitive or Reinstatement category 0, 1 or 2	Reinstatement category 3 & 4
1. Reconstructed	5 years	5 years
2. Resurfaced	3 years	3 years
3. Other substantial works	1 year	6 months
4. Combination of 1 or 2 + 3	Higher of figures	Higher of figures
5. Customer connections		20 days

3.1.3 Road traffic management

The Safety at Street Works code of practice of 2013 (SaS (2013)) lays out the legal safety requirements for an undertaker performing street works.¹⁴ It provides comprehensive guidance on signage of the works, traffic control and the safety requirements for a wide range of working environments. If using traffic signals, there is a need to apply for permission from the highway authority.

Details of a traffic management scheme are required to be submitted with an application for a street works permit and temporary traffic regulation orders (TTROs), for example lane closures, must be applied for separately to the street works permit.

Lead times for traffic management schemes vary nationally (e.g. for portable traffic signals, road closures, etc.) and the required notice times are often significantly longer than the advance periods under noticing or permit schemes, creating different timetables for works in different areas. A summary of traffic management lead times collated and analysed by an operator from data received from highway authorities is shown in Figure 3.4.

Figure 3.4: Summary of traffic management lead times [Source: Operator analysis of data received from highway authorities, November 2016]

Traffic management type	Lead times of highway authorities (working days)		
	Range	Average	Most common
2-way lights	1 – 25	7	7
Multi-phase lights	3 – 30	11	10
Lane closure	3 – 60	16	10
Road closure	5 – 90	44	60
Footpath closure	3 – 84	27	30
Bus stop suspension	3 – 70	18	20
Parking bay suspension	1 – 90	13	10
Traffic light switch-off	1 – 30	10	10
Suspension of pedestrian crossing	1 – 40	11	10

When granting a TTRO, a local authority is required, at least seven days before making the order, to advertise it in a local newspaper, in the vicinity of the affected area and inform the police. After making the order, the local authority must publish a notice in a local newspaper and near the affected area within two weeks. Local authorities generally pass these fees on to operators, and they can be of the order of hundreds of pounds for each TTRO requested.¹⁵

¹⁴ <https://www.gov.uk/government/publications/safety-at-street-works-and-road-works>

¹⁵ Roads: Traffic Regulation Orders (TROs), House of Commons Briefing Note, 2014.

In 2012, the UK Government launched a consultation on possible changes to the TTRO advertising rules to allow a wider range of advertising media to be used. However, in 2013 it was announced that the Government was not going to continue with the proposed changes.

3.1.4 Planning permission

Under Para 5 of the Electronic Communications Code (Conditions and Restrictions) Regulations 2003, operators must provide 56 days' notice to the local planning authority of their intention to install any cabinet. The local planning authority does not have the power to veto any site but it can request conditions to be attached to the installation and it has up to one calendar month to do this. However, operators can reject these conditions if they feel they are not reasonably practicable.¹⁶

Part 16 of the Town and Country (General Permitted Development) (England) Order 2015 (the GPDO) allows the installation, alteration or replacement of any electronic communications apparatus by or on behalf of an electronic communications code operator without planning permission (applies to cabinets, not any work requiring a road to be dug up), extending the rights under part 24 of the Town & Country Planning Act (1990).¹⁷ However, there are exceptions, such as conservation areas, where a utility company may be required to apply for permission regardless of the GPDO.

3.1.5 Access to power

Power is delivered by regional electricity companies (RECs), which are designated utilities. Operators ask for power to be delivered at a specific location and the REC delivers it – with the operator paying the cost. Access to power is a key issue for both fixed and mobile infrastructure deployments. For example, fixed and mobile networks require power for equipment in their cabinets and on transmission masts.

Gaining access to power can be a complex issue for an operator, with both street works and wayleaves to consider. If the site is in an urban area, the complexity is dictated primarily by street works considerations, e.g. restriction notices, congestion in footways and road crossings, road closures and road traffic management issues. If the site is in a rural area, the distance from the nearest power source can be significant and the shortest route may be across private or publicly owned land, requiring multiple wayleave agreements as well as any street works on public roads.

A full investigation of the issue of access to power as a barrier to infrastructure deployment was beyond the scope of this report. The issue of wayleaves is not considered in this report, except regarding cabinet siting on public land. The issues of street works and road traffic management are discussed in more detail below, but their impact on access to power is not explicitly considered.

¹⁶ <https://www.openreach.co.uk/orpg/home/helpandsupport/frequentlyaskedquestions/viewAllFAQs.do>

¹⁷ <http://www.legislation.gov.uk/ukxi/2015/596/schedule/2/part/16/made>

3.2 Legislation

We are aware that, particularly for planning permission, there is a significant body of legislation governing the deployment of equipment in areas such as sites of special scientific interest, national parks, etc. Some operators have suggested that this presents a significant operational challenge as deploying a new network can require extensive negotiations with a range of stakeholders.

For this review, we have focused on the significant pieces of legislation that govern deployment of telecommunications infrastructure in much of the United Kingdom. It is beyond the scope of this document to produce a complete review of the legislative landscape, but even so the tables below indicate just how much legislation governs the processes that must be considered by the telecoms operators as operators of national networks.

In the tables below, E+W is used to denote legislation governing England and Wales, S denotes Scotland and NI denotes Northern Ireland.

3.2.1 Street works

Figure 3.5: Summary of street works legislation [Source: Analysys Mason, 2017]

Act name	Year	Abbreviation	Extent	Scope
New Roads and Street Works Act	1991	NRSWA (1991)	E+W, S	The NRSWA introduced the concept of noticing schemes and works co-ordination, post-works restrictions
The Street Works (Northern Ireland) Order	1995	TSWO (1995)	NI	Like the NRSWA, the TSWO introduced noticing schemes in Northern Ireland as well as works coordination, resurfacing requirements and post-works restrictions
Traffic Management Act	2004	TMA (2004)	E+W	The TMA introduced permit schemes in England and Wales, as well as a network management duty for local authorities and modifications to the extent of post-works restrictions allowed
Transport Scotland Act	2005	TSA (2005)	S	The TSA introduced the office of the Scottish Road Works Commissioner and modifications to the extent of post-works restrictions allowed
The Street Works (Amendment) (Northern Ireland) Order	2007	TSWO (2007)	NI	Like the TMA, the TSWO (2007) introduced permit schemes in Northern Ireland as well as modifications to the extent of post-works restrictions allowed
The Traffic Management Permit Scheme (England) Regulations	2007			Established framework for local authorities to introduce a permit scheme

Act name	Year	Abbreviation	Extent	Scope
Deregulation Act 2015	2015		E+W	Removed the requirement for local authorities to gain permission from the Secretary of State for Transport before introducing permit schemes
Statutory Guidance for Highway Authority Permit Schemes	2015		E+W	Outlines the statutory requirements a local authority must meet when introducing a permit scheme

3.2.2 Road traffic management

Figure 3.6: Summary of road traffic management legislation [Source: Analysys Mason, 2017]

Act name	Year	Abbreviation	Extent	Scope
The Road Traffic (Temporary Restrictions) Procedure Regulations	1992		E+W, S	Introduced temporary traffic restriction orders to England, Wales and Scotland
Road Traffic Regulation (Northern Ireland) Order	1997		NI	Introduced temporary traffic restriction orders to Northern Ireland
Safety at Street Works and Road Works – A code of practice	2013	SaSW	E+W, S, NI	Outlines requirements for traffic management including signals, lighting and guarding

3.2.3 Planning permission

For telecoms operators, the extent of planning authority involvement in the planning process is defined by the type of equipment being deployed. There are three classes of planning applications:

- **Permitted development** – Deploying infrastructure under permitted development rules requires a 28-day notice period to the planning authority, known as a Regulation 5 notice (under the Electronic Communications Code).
- **Prior approval** – Certain infrastructure requires a planning application to be submitted to a planning authority. The planning authority is required to respond to the application within 56 days of receipt of the application (including weekends and bank holidays) and is only allowed to object on the grounds of siting or appearance. If no response is received, the application is deemed to have been approved.

- **Full planning application** – If the infrastructure deployment is not covered by permitted development or prior approval, a full planning application must be submitted at which point the local authority has 13 weeks to approve or reject the application.

The types of telecommunications infrastructure that count as permitted development include cabinets with a base of less than 2.5 m², masts under 25 metres in height (excluding antennas). In certain locations, such as national parks and sites of special scientific interest (classified as Article 2/3 land¹⁸), broadband cabinets (and other equipment) are allowed as permitted developments but mobile infrastructure requires prior approval.¹⁹

Figure 3.7: Summary of planning legislation [Source: Analysys Mason, 2017]

Act name	Year	Abbreviation	Extent	Scope
Town and Country Planning (General Permitted Development) (Scotland) Order	1992		S	Introduces permitted development rights for telecoms networks in Class 67 of permitted developments
Town and Country Planning (General Permitted Development) Order	1995		E+W	Introduces permitted development rights for telecoms networks in Class 24 of permitted developments
Town and Country Planning (General Permitted Development) (Scotland) Amendment Order	2014		S	Amended Class 67 of permitted developments, particularly around permitted alterations to mobile masts
The Town and Country (General Permitted Development) (Amendment) (No. 2) (Wales) Order	2014		W	Amended Part 16 of permitted developments, particularly around permitted mobile mast developments
General Permitted Development Order (England)	2015	GPDO England	E	Outlined extensive developments allowed without planning permission for electronic communications code operators in Part 16. Restrictions on mobile masts, mobile cabinets with a base area >2.5 m ²

¹⁸ General Permitted Development Order (England), 2015 – Schedule 1.

¹⁹ <https://www.gov.uk/guidance/when-is-permission-required> - Accessed 31/01/2017

Act name	Year	Abbreviation	Extent	Scope
The Planning (General Permitted Development) Order (Northern Ireland)	2015		NI	Outlined extensive developments allowed without planning permission for electronic communications code operators in Part 18
Town and Country Planning (General Permitted Development) (England) (Amendment) (No. 2) Order	2016		E	Amended Part 16 of permitted developments, particularly around permitted mobile mast developments

3.3 Differences between devolved nations

We have summarised the differences in the legislation between the devolved nations.

Figure 3.8: Legislation differences between devolved nations [Source: Analysys Mason, 2017]

	England	Wales	Scotland	Northern Ireland
Noticing and Permit schemes	Both	Both	Notice scheme	Both
	NRSA (1991) TMA (2004)	NRSA (1991) TMA (2004)	NRSA (1991) TSA (2005)	NRSA (1991) TSWO (2007)
Post-works restriction notices	Section 58	Section 58	Section 117	Section 18
	NRSA (1991)	NRSA (1991)	NRSA (1991)	TSWO (1995)
Road traffic management	Statutory under SaSW code of practice	Statutory under SaSW code of practice	Statutory under SaSW code of practice, except for roads authority	Statutory under SaSW code of practice
	NRSA (1991)	NRSA (1991)	NRSA (1991)	TSWO (1995)
Planning permission	Differences between the devolved nations over the size of infrastructure given permitted development status			

4 Findings

The findings from our desk research and interviews with the telecoms operators and the highways and planning departments of local authorities are grouped into five areas:

- noticing and permit schemes
- restriction (e.g. Section 58) notices
- road traffic management
- planning permission
- other findings.

There is a level of uncertainty with some of the findings, which reflect the views of those interviewed, but overall do not present a uniform picture; there was a wide variation in the perception of local authorities' attitude and performance, as expressed by operators, and there was a wide variation in the perception of operators' attitude and performance, as expressed by local authorities. In some cases, the same operator, or local authority, was both commended and criticised.

Despite the variations in interview responses, the feedback was credible and we believe that the issues raised could be having a negative effect on network infrastructure deployment. Accordingly, in the following tables²⁰ we have captured these issues in detail and summarised the impact they could have on network deployment, e.g. increased costs, delays, etc.

²⁰ Note that the 'Ref No.' column in the tables provides an identifier for the findings, which is also used in the recommendations in Section 5.

4.1 Noticing and permit schemes

Ref. No.	Subject	Impact	Description
A1.1	Noticing and permit schemes	The number of different notice and permit schemes across the nations, and the variations between them, increases costs for operators	<p>We received consistent comments that one of the most significant challenges faced by operators when planning a new network deployment is the variation between the notice and permit schemes operated by local authorities. Whilst there were comments that schemes worked well, there is a mix of permit and noticing schemes across the country and new permit schemes are being introduced on a regular basis. Operators currently must implement processes that manage the fees and notice periods for 25 permit schemes operating in more than 90 local authorities,²¹ as well as the requirements for noticing schemes in operation in other areas. This places a significant operational burden on operators, as well as creating the potential for time and financial penalties if any confusion occurs. Local authorities confirmed different approaches are taken: one local authority recently introduced a scheme based on a neighbouring authority's scheme with modifications to cater for local differences; a second authority introduced their scheme as part of a regional partnership, with different scale and scope to pre-existing schemes, and agreed in consultation with operators and other utilities.</p> <p>Both operators and local authorities expressed a desire for a more uniform national picture with strong guidance from central government on the scope, scale and operation of permit schemes. Local authorities feel that implementing a national scheme would provide a "level playing field" between authorities, with less scope for operators to take issue with local practices. There are examples of regional schemes, such as the Yorkshire and Humberside permit scheme, in which local authorities introduce a permit scheme identical to those in the surrounding authorities. This provides a simplified picture for both local authorities and operators. In Scotland, there is a national noticing scheme operated by local authorities and managed by The Office of the Scottish Road Works Commissioner (OSRW). It was reported by operators that, despite a national scheme, the legislation and guidance in Scotland leaves a sense that the OSRW and local authorities have considerable latitude to apply different conditions. This suggests that, even with a national scheme, care must be taken to ensure a consistent application of the scheme.</p>
A1.2	Noticing and permit schemes	Permit fees may be disproportionate to the impact on traffic	The DfT statutory guidance ²² suggests that a permit scheme will most likely apply to an entire road network with fee reductions in place for less strategically important streets such as category 3, 4 or non traffic-sensitive streets. This matched our observations across several permit schemes, with lower or no

²¹ Analysys Mason review of the number of schemes in operation and operator provided information.

²² *DfT Statutory Guidance for Highway Authority Permit Schemes*, October 2015.

Ref. No.	Subject	Impact	Description
A1.3	Noticing and permit schemes	Permit schemes may not be suitable for large-scale infrastructure deployments	<p>fees set for lower-category roads. However, given that a fee is due for individual permit applications, even though around 93% of roads are expected to fall into categories 3 and 4 (see Figure 3.1), permit fees combined with the extra costs of permit variations and advanced authorisation fees have the potential to become a significant contribution to the cost of infrastructure deployment.</p> <p>One fixed operator reported that in six years it has paid almost GBP18 million in permit fees, with 95% of these fees for works on category 3 and 4 roads. This suggests that fees for category 3 and 4 roads are having a financial impact on network deployments that may be disproportionate to the impact on traffic and the stated aims of permit schemes.</p> <p>Within the guidance on permit schemes, there is an option to apply the scheme only across areas largely defined as strategically significant streets – i.e. those streets which are category 0, 1 or 2 – with the remaining roads covered by a less prescriptive noticing scheme. This has been implemented in one of the regional schemes. One local authority involved with this scheme suggested that the split between permit and noticing scheme was implemented after consultation with representatives from the utility companies and is generally regarded to be working well in practice. The permit scheme on higher-priority roads allows the council to perform its network management duties and gives greater control over more sensitive works. The noticing scheme on lower-priority roads provides a lower operational burden for network deployment.</p> <p>An operator highlighted that fees even on category 0, 1 and 2 roads could be removed, or reduced, if works were carried out at non traffic-sensitive times.</p> <p>There are mixed opinions on the suitability of a permit scheme for managing large-scale infrastructure deployments. Both operators and local authorities have suggested that permit schemes work well for maintenance programmes but can be ill-suited to large-scale new deployments as many interactions are generated over a short space of time. If there is no early engagement between local authorities and operators, local authorities can be caught unprepared for the volume of applications and response times may suffer.</p> <p>However, some local authorities have suggested that, with adequate pre-engagement, a permit scheme presents a good opportunity for local authorities to leverage their experience and assist in the network deployment by providing clear guidance on potentially problematic routes and suitable sites for equipment.</p>

Ref. No.	Subject	Impact	Description
A1.4	Noticing and permit schemes	Use of conditions in permits is placing excessive restrictions on network deployment	<p>Within a permit scheme, local authorities have the option to apply conditions to permits before granting permission. Statutory guidance issued in March 2015²³ outlined a standard set of conditions to be applied to permits, enabling an authority to direct the timing, duration and working hours of works as well as requiring specific traffic management, appropriate working methodologies and public noticing of the works. The statutory guidance on permit schemes issued in October 2015 (para. 3.38-3.39)²⁴ requires conditions to match those outlined in the March 2015 guidance and states discretion should only be used to promote network management or a similar statutory duty.</p> <p>Whilst local authorities have suggested national conditions work well, multiple operators have commented that local authorities place excessive restrictions using permit conditions. There may be an issue here in which local authorities move beyond performing their statutory network management duties and effectively begin managing an operator's duties as statutory undertakers, i.e. an authority is potentially placing restrictions on operators beyond the requirements of the guidance. There is a potential tension here between the overall road network management duties of the local authority and the rights and responsibilities of operators as statutory undertakers.</p>
A1.5	Noticing and permit schemes	Local authorities may be assigning higher-level road classifications for reinstatement under the SROH than necessary, which increases deployment costs and/or timescales	<p>The Code of Practice (Third Edition, April 2010) outlining the Specification for the Reinstatement of Openings in Highways (SROH)²⁵ contains statutory instructions and non-statutory guidance on classifying roads by their required reinstatement properties. It has been suggested by operators that roads are being classified at a higher level than necessary, although it was remarked that a reason for this has been the need for a local authority to protect itself after previous problems.</p> <p>Like traffic-sensitive streets (see below), an increase in the proportion of streets classified at the higher levels of reinstatement poses a potential barrier to deployment from increased reinstatement costs and/or a time impact due to increased notice periods, which could significantly increase overall roll-out timescales.</p>
A1.6	Noticing and permit schemes	Authorities may be designating higher numbers of traffic-	The designation of traffic-sensitive streets (TSS) increases the burden for operators compared to streets that are non-TSS, and requires operators to give a longer notice period before commencing work (or to apply for a permit earlier). A street can be designated as TSS if either (a) it meets one of a set of

²³ Statutory Guidance for Highway Authority Permit Schemes – Permit Scheme Conditions, March 2015.

²⁴ Statutory Guidance for Highway Authority Permit Schemes, October 2015.

²⁵ Specification for the Reinstatement of Openings in Highways, 3rd Edition, April 2010.

Ref. No.	Subject	Impact	Description
		sensitive streets than necessary, which increases costs and timescales, and adds restrictions on works	<p>criteria outlined in Section 5.4.2 of the Code of Practice issued in October 2012²⁶ or (b) the majority of undertakers known to have equipment sited in the street agree it is a TSS. The designation is permanent, although local authorities can remove it at their discretion under Section 64 of the NRSWA (1991).</p> <p>It has been suggested that, like road classification under SROH, local authorities may be classifying streets as traffic sensitive to protect themselves after previous problems. One (predominantly urban) local authority reported that it has designated approximately 28% of its network as TSS, matching figures reported to it by a local authority with a similar urban environment. Designating higher-than-necessary numbers of streets as TSS becomes a barrier to deployment through increased costs and timescales and adds restrictions on works.</p>
A1.7	Noticing and permit schemes	Embargo periods could be delaying deployment more than necessary	<p>Embargo periods are used by local authorities to protect roads during busy periods. They are implemented using the power of a roads authority to coordinate the execution of works and direct the timing of works when the proposed works are likely to cause serious disruption. For example, Edinburgh places street works embargoes during the Fringe Festival and the Christmas shopping period.²⁷ During an embargo period, negotiations are required for individual street works. Operators suggested that this places restrictions on the large-scale deployment of new infrastructure as works can be delayed for a month or more at a time, and complicates deployment planning.</p> <p>Local authorities reported that they did not get a significant push-back on embargo periods from operators, as they were well understood. However, one local authority we spoke to explained that it did not use embargo periods if conditions within permits could achieve the required outcome.</p>
A1.8	Noticing and permit schemes	Scheme monitoring and KPIs may be counter-intuitive and potentially driving behaviour that penalises network investment	<p>A permit scheme must be evaluated every 12 months of operation for the first three years and then every three years thereafter. The Statutory Guidance for Highway Authority Permit Schemes outlines a set of seven key performance indicators (KPIs) that were developed by the Highway Authorities and Utilities Committee (HAUC) and are suggested (but not mandatory) for the evaluation of permit schemes.</p> <p>Whilst the evaluation reports we reviewed all focused on a reduction in the average time of works, other reported statistics vary widely. Some authorities report statistics on operators, including Fixed Penalty Notices issued and the number of permits accepted, varied and refused. Other authorities appear focused on reducing the total number of permits applied for, which appears counter-intuitive given a high</p>

²⁶ Code of Practice for the Co-ordination of Street Works and Works for Road Purposes and Related Matters, 4th Edition, October 2012.

²⁷ http://www.heraldscotland.com/news/14702731.One_in_five_roadworks_in_Edinburgh_need_fixed_later/ (Accessed 21/12/16)

Ref. No.	Subject	Impact	Description
			<p>number of permits may be an indicator of significant commercial investment. One local authority reported an example of what could be regarded as good practice by normalising all KPIs to the number of applications received in each period.</p> <p>Some local authorities have reported collecting detailed statistics on operator performance – for example works overrun, reinstatement quality, public complaints – and sharing these with operators on a quarterly basis. These statistics are treated as commercially confidential and kept in confidence by both operators and local authorities. However, other local authorities have suggested that sharing these statistics on a regular basis has had a noticeable and beneficial effect on improving operator performance.</p> <p>GeoPlace, the organisation currently overseeing the production and maintenance of the National Street Gazetteer, provides the option of scorecards for local authorities outlining each authority's performance in a range of key indicators.²⁸ These scorecards are “not meant to be a league table” but instead a tool to help authorities improve their permit scheme. Currently, these scorecards are not publicly available, nor is any data from the National Street Gazetteer.</p>

4.2 Restriction (e.g. Section 58) notices

Ref. No.	Subject	Impact	Description
A2.1	Restriction (e.g. Section 58) notices	Potential overuse of restriction (e.g. Section 58) notices could be restricting network deployment	<p>Both operators and authorities reported general satisfaction with restriction notices. Operators suggested that they understood the desire for local authorities to protect their roads after extensive resurfacing, whilst authorities recognised that restriction notices could be a significant barrier to new infrastructure deployment and generally only applied them after a significant pre-warning period. In addition, authorities do allow works on roads with restriction notices providing there is adequate reinstatement.</p> <p>However, operators suggested that some local authorities are over-using restriction notices. For example, one city council is currently performing a phased resurfacing of its road network as part of a five-year works programme across the city. Every road in the city centre will be under a Section 58 notice at some period during the works, potentially preventing operators from deploying new infrastructure. The city council explained that the programme was planned for three years before works began and operators were</p>

²⁸ <https://www.geoplace.co.uk/streets/services-and-nsg-data/scorecards> (Accessed 19/12/2016)

Ref. No.	Subject	Impact	Description
			given notice of the works schedule, as well as the opportunity to coordinate their works with the local authority's plans, to reduce overall street works costs and duration.
A2.2	Restriction (e.g. Section 58) notices	Full-width reinstatement obligations alter the business case for network deployment	<p>Under Section 55 of the TMA (2004), the NRSWA (1991) was modified to grant a street authority the power to direct either half-width or full-width reinstatement of a section of road following street works. Operators noted that local authorities would often allow works to be undertaken on a road under a Section 58 notice, but only if they performed a full-width reinstatement afterwards. This results in a significant additional cost to operators and operators have suggested that it can significantly alter the business case for a network deployment. Local authorities confirmed that they require a full-width reinstatement for works performed on a road under a Section 58 notice, and that they see this as necessary to protect significant investment by the authority in the new road surface.</p> <p>There are arguments for both local authorities wishing to protect their investment in new road surfaces and operators wishing to deploy new infrastructure. However, it is not clear if half-width reinstatement could be a valid solution in certain circumstances.</p>

4.3 Road traffic management

Ref. No.	Subject	Impact	Description
A3.1	Road traffic management	Road traffic notice periods and road closure costs cause delays and increase costs, and could have wider implications for national policy by inhibiting full-fibre connections to customer premises	<p>Operators have suggested that, whilst the advance periods for noticing and permit schemes were both reasonable and consistent nationally, there is an issue with notice periods and fees for road traffic management schemes such as temporary traffic regulation orders (TTROs). Operators suggested these vary widely by local authority and require considerable local knowledge to keep track of local requirements. One operator provided us with a summary of lead times for different traffic management measures (see Figure 3.4), which shows wide variations in the lead times for all types of traffic management schemes. The costs of advertising were also highlighted as being higher than necessary when alternative forms of communications were available.</p> <p>Other examples provided to us include a road closure in one local authority costing GBP2125 for a one-month licence, whilst in another costing GBP1530 per road closure licence. One London borough was reported as refusing to suspend parking bays for more than one day, instead requiring operators to occupy each bay required for the full duration of the works to prevent the public parking there. Another London borough was reported as refusing to accept the exemption to parking penalty charge notices under</p>

Ref. No.	Subject	Impact	Description
			<p>the NRSWA (1991), the particular authority becoming responsible for 77% of parking fines received by the operator.</p> <p>The need for traffic management to be adapted to local needs was understood, but the inconsistency in approaches to lead times and enforcement is increasing costs and causing delays. For example, in the case of the authority where a footpath closure requires 84 days' notice, new customer connections could take almost three months to deliver. This is likely to be unacceptable to customers and could inhibit customer requests for new connections, such as a new fibre connection. This would have more significant implications on a national scale for deployment of infrastructure up to customer premises, e.g. affecting the Government's ambitions for full-fibre.</p>
A3.2	Road traffic management	Lack of site visits by operators and local authorities is delaying permits and commencement of works	Several local authorities commented that a lack of preparation for works at more complex sites was leading to issues with road traffic management . The complexity of the requirements at some sites may be underestimated by operators, leading to delays in permits being granted or in commencement of works once the subcontractor arrives on site. Local authorities have suggested they would be willing to perform site visits with operators as part of the deployment planning phase . Similar comments on early engagement by operators are provided in Section 4.5 (see A5.2).

4.4 Planning permission

Ref. No.	Subject	Impact	Description
A4.1	Planning permission	Deployment has to be redesigned if late engagement with a planning authority results in planning permission being refused	Planning authorities have suggested that operators do not always engage with the planning authority early in the process , leading to a significant burden on the operator as the deployment must be redesigned if planning permission for part of a deployment is refused.
A4.2	Planning permission	Siting of cabinets is time consuming and potentially costly if	Local authorities raised the problem with the siting of cabinets on pavements as a challenging issue . To accommodate recent technological developments in FTTC/FTTP technologies, cabinets must be upgraded or new cabinets installed. The local authority needs to maintain usable footpaths for all users, protect historic buildings and accommodate the needs of the operator. Once planning permission has been

Ref. No.	Subject	Impact	Description
		wayleaves are required	<p>granted, one local authority commented that subcontractors have been known to move a cabinet from the agreed placement, resulting in serious complications for both the operator and the local authority.</p> <p>Operators commented that a key challenge they face in siting cabinets is local authority demands for cabinets to be sited off footpaths on local authority land. This then attaches a wayleave cost for each cabinet, which in one example provided was up to GBP2000 per wayleave – adding 10% to the cost of the deployment. One local authority confirmed that its policy was to site cabinets off footpaths wherever possible to protect the footpath and make maintenance less demanding for operators, however the local authority did not provide any comments on its policy on wayleaves. The same local authority also suggested that a lack of incentives to remove old cabinets or to share infrastructure was resulting in a significant overbuild of equipment. However, operators consider that there is a significant barrier to deployment here, both in terms of the time taken to agree the siting for cabinets during the planning phase of the deployment and the cost of wayleaves for the cabinets after deployment. Several operators commented that wayleaves were the number one issue they faced during network deployments and that high costs of wayleaves could “blow the business case” for a deployment; local authorities could be inadvertently setting policies that are a revenue stream from a planning/wayleave perspective but become a barrier to broadband deployment from an economic/investment perspective.</p>

4.5 Other findings

Ref. No.	Subject	Issue	Impact on operators
A5.1	Other findings	Poor workmanship throughout the supply chain causes delays and increased costs for operators and local authorities as well as raising safety concerns	<p>One area of concern raised by local authorities was the prevalence of multiple layers of subcontractors below the tier-one contractor to perform the street works. Whilst deployments may be planned and works promoted by an operator, street works will be contracted out to a major construction contractor, which will then subcontract out parts of the work to smaller firms that may then subcontract out again. Local authorities commented that this results in the “profit being subcontracted out of the scheme” so the company undertaking the work is only concerned with “getting cable in the ground and not the safety, quality or performance of the works”.</p> <p>One local authority has recently begun a 100% reinstatement inspection regime after only 80% (compared to the target of 90%) of reinstatements inspected under the standard 10% inspection policy²⁹ were found to be satisfactory. Another local authority reported instituting 100% inspections for a given</p>

²⁹ Code of Practice for Inspections, September 2002.

Ref. No.	Subject	Issue	Impact on operators
			<p>operator if its inspection pass rates dropped below a threshold. Given a local authority becomes responsible for the cost of replacing the reinstatement after a two-year guarantee period, it was decided that it was more cost effective to inspect every reinstatement and ensure full compliance. One authority reported that even with 100% inspections, there was still a significantly higher failure rate than expected and suggested that this was due to subcontractors having few incentives to perform the work right first time.</p> <p>Issues with subcontracting were also brought up by operators. One operator suggested that miscommunications between the various parties involved – including the subcontractors – led to a significant number of issues occurring. This was supported by local authorities that suggested that clear communication with subcontractors is crucial to ensure they understand the standard of work expected. One operator suggested it was aware this was a significant issue and worked towards ameliorating this through careful management of the deployment process such as:</p> <ul style="list-style-type: none"> • During the tender and contract negotiation stage for appointing prime contractors, ensuring that the extent of subcontracting is well understood and agreeing an audit process to be followed throughout the deployment works. • During the deployment works, performing regular audits including site visits and holding a weekly meeting with the contractor and subcontractors to discuss any issues. • After the works process, performing additional checks on reinstatements and workmanship to ensure specifications were met. <p>When outsourced network deployment contracts involve multiple layers of subcontracting, there is a significant risk of a loss of focus on both safety and workmanship during works. Both operators and local authorities recognised this as a major issue and key barrier to network deployment due to tensions between the parties involved in deployments, increased level of ancillary costs from fixed penalty notices (FPNs), repeat reinstatements to meet the required standard, and a potentially significant impact on network deployments due to delayed works programmes.</p> <p>Within the statutory guidance for permit schemes, there is the potential for authorities to provide incentives to companies such as reduced fees that reduce disruptive remedial works by delivering compliant first-time reinstatements.³⁰ Several authorities suggested introducing fixed penalty notices</p>

³⁰ Statutory Guidance for Highway Authority Permit Schemes – October 2015.

Ref. No.	Subject	Issue	Impact on operators
			for non-compliant reinstatements , and we note that the introduction of FPNs for poor-quality workmanship is currently being considered in Scotland. ³¹
A5.2	Other findings	Communication – Early engagement with local authorities can help operators avoid deployment issues and delays	<p>Local authorities have consistently suggested that early engagement is critical for a large-scale infrastructure deployment. In one example in which there was no early engagement, a local authority reported that the first indication it received that a major infrastructure deployment was being planned was a bulk application for street works permits. Given the presence of other utilities in the roads, deployment challenges such as reinforced concrete roads, and operational processes such as the prevalence of electronic planning rather than doing site visits, local authorities highlighted that early engagement presents an opportunity to use a local authority's knowledge and account for potential issues in the deployment early in the planning phase. One authority suggested that reticence from early engagement by operators was due to concerns about confidentiality, which might be related to release of information such as a new commercial network deployment area planned by an operator being revealed to its competitors earlier than it would like.</p> <p>However, some operators suggested that they always consult both highways and planning authorities as early as possible. This supports statements from local authorities that there is considerable variation in the attitudes of operators towards engaging with local authorities.</p>
A5.3	Other findings	Communication – dedicated resources to provide clear and consistent channels of communication between all stakeholders will help reduce issues arising before and during network deployment	<p>Both operators and local authorities highlighted the importance of clear and open channels for communication throughout the entire process of infrastructure deployment. All the local authorities that were interviewed hold quarterly coordination meetings with operators to provide feedback on KPIs and an opportunity to share upcoming plans for new deployments. These are supplemented by quarterly meetings of the regional Highway Authority and Utilities Committees (HAUCs) where both local authorities and utility companies meet to discuss key issues relating to street works.</p> <p>One operator currently involved in extensive network deployments suggested funding could be provided by an operator to a local authority so extra resources could be employed to cope with the increased activity through the deployment period. Resources would be employed by the council, ensuring independence, but they could be assigned to facilitate the new network deployment – creating a single point of contact between the local authority and the operator. We received feedback from a local authority where extra resources dedicated to support increased network deployment had been funded by the authority, and it had helped manage the additional workload of the network deployment. One operator also</p>

³¹ Minutes of the Scottish RAUC meeting, March 2016.

Ref. No.	Subject	Issue	Impact on operators
			<p>commented that working with highways officers dedicated to the operator provided a more effective means to deploy equipment.</p> <p>A second area suggested as important was full stakeholder engagement, including communication with the public affected by works. Providing a simple and easy channel to direct queries from the public and internally from the local authority to a single contact was seen as key to generating understanding of the deployment and identifying issues that develop as a network deployment progresses. In one example, an operator explained that it had prepared community engagement packs in collaboration with a local authority to explain the network deployment being planned.</p>
A5.4	Other findings	Micro-trenching and similar techniques could reduce deployment costs but there are uncertainties about their suitability and inconsistencies in the way highway authorities consider their use	<p>Civil works are estimated to be responsible for as much as 80% of the cost of network deployment and there is a strong interest from policymakers and operators in identifying techniques that can drive down deployment costs.³² One such technique is ‘micro-trenching’, in which a saw is used to cut a small trench (generally less than 100mm wide) and the duct/fibre inserted in the trench. Other similar techniques are known as ‘narrow trenching’ or ‘slot trenching’, although there seems to be some uncertainty about the differences between techniques and in which environments they are suitable. Micro-trenching can reduce civil costs significantly compared to current techniques such as digging trenches. However, several operators highlighted strong local authority opposition to new deployment techniques such as micro-trenching. Discussions with authorities suggested that the use of micro-trenching is currently not allowed in Scotland.</p> <p>Authorities explained that equipment installed by such techniques restricts future maintenance of the road. Furthermore, due to the depths the technique is deployed at, it can cut through traffic loops and any other infrastructure deployed in the road.</p> <p>Some authorities indicated they considered the advice contained in the SROH on micro-trenching and one authority indicated it used an advice note issued by DCMS in November 2011 on the use of micro-trenching for street works. The DCMS digital communications infrastructure strategy indicated “The SROH sets out a range of deployment methods and approved materials that can be used when carrying out street works, including narrow trenching and the use of foamed concrete as a reinstatement material. The Department for Transport wrote in December 2014 to local authorities in England to clarify that where narrow trenching is compliant with the SROH it should be permitted.”³³</p>

³² Review of Civils Technology and Adoption - Report for Ofcom by Analysys Mason, August 2012

³³ The digital communications infrastructure strategy, published March 2015; <https://www.gov.uk/government/publications/the-digital-communications-infrastructure-strategy>

Ref. No.	Subject	Issue	Impact on operators
			Overall, the use of micro-trenching and similar techniques is evolving but there seems to be inconsistencies in how highway authorities assess their suitability and make decisions that prevent their use.
A5.5	Other findings	Outsourced highway functions could be increasing costs of network deployment	Operators highlighted concerns that outsourced providers might be incentivised to increase revenue through charging fees and applying fines. However, one local authority we interviewed that had outsourced some of its highway function as part of a strategic partnership indicated that policy and application of guidance (for fees and fines) remained wholly within the jurisdiction of the authority.

5 Recommendations

We have developed a set of recommendations to address the issues identified in the findings in Section 4, grouped according to the organisation(s) that might be best placed to address them. Many of the issues can be addressed by more than one organisation and, as such, the recommendations are grouped as follows:

- UK Government
- UK Government and highway authorities
- telecoms operators and highway authorities
- telecoms operators and planning authorities
- telecoms operators.

5.1 Recommendations for the UK Government

Based on our understanding of the issues, the UK Government department that should consider these recommendations is the Department of Transport.

Ref. No.	Subject	Issue	Recommendation
A1.1	Noticing and permit schemes	The number of different noticing and permit schemes across the nations, and the variations between them, increases costs for operators	Review the legislation and statutory guidance to introduce a more uniform national approach to managing road networks and street works which would result in a reduction in the number of, and the variations between, noticing and permit schemes operated by local authorities. Local authorities feel that implementing a national scheme would provide a “level playing field” between authorities, with less scope for operators to take issue with local practices. Regional schemes could be reviewed as potential examples of best practice that provide a simplified picture for both local authorities and operators. However, note that even with a national scheme care must be taken to ensure a consistent application of the scheme.
A1.3	Noticing and permit schemes	Permit schemes may not be suitable for large-scale infrastructure deployments	Review legislation and statutory guidance to consider if introduction of additional mandatory requirements and guidance could help both operators and local authorities to better manage large-scale network deployments.
A1.8	Noticing and permit schemes	Scheme monitoring and KPIs may be counter-intuitive and potentially driving behaviour that penalises	Review permit scheme KPIs that are being monitored by highway authorities and analyse KPIs at a national level to understand the variation in statistics being reported and how the reporting is being used. For example, it may be appropriate for the National Street Gazetteer (NSG) scorecards for local authorities and other data in the NSG to be published.

Ref. No.	Subject	Issue	Recommendation
		network investment	Consider an evaluation framework that also considers the outcomes from the street works activity, e.g. the benefits from full-fibre connections to customer premises.
A2.1	Restriction (e.g. Section 58) notices	Potential overuse of restriction (e.g. Section 58) notices could be restricting network deployment	Analyse the use of restriction notices by highway authorities in each nation to understand if there are noticeable differences between authorities in terms of volumes of notices, time periods applied and the number of works that do occur on roads with restriction notices in place. The aim would be to identify ways to introduce more flexibility (e.g. apply the Section 58 notice on part of a road, not the whole road).
A3.1	Road traffic management	Road traffic notice periods and road closure costs cause delays and increase costs, and could have wider implications for national policy by inhibiting full-fibre connections to customer premises	Analyse the notice periods and fees being applied by highway authorities to road traffic management schemes such as temporary traffic regulation orders (TTROs), including conditions that are being applied by authorities such as parking bay occupation and parking fine exemptions, and the requirements for advertising.
A5.4	Other findings	Micro-trenching and similar techniques could reduce deployment costs but there are uncertainties about their suitability and inconsistencies in the way highway authorities consider their use	Review micro-trenching and similar techniques of network deployment to understand why there are inconsistencies in how highway authorities assess the suitability of such techniques and make decisions that prevent their use, and update guidance accordingly.

5.2 Recommendations for the UK Government and highway authorities

Based on our understanding of the issues, the UK Government department that should consider these recommendations is the Department of Transport.

Ref. No.	Subject	Issue	Recommendation
A1.2	Noticing and permit schemes	Permit fees may be disproportionate to the impact on traffic	Review permit fees for less strategically important streets such as category 3, 4 or non-traffic sensitive streets to understand if fees are being consistently applied between highway authorities. It may be possible to lower fees or set them to zero. Consider the option to apply the scheme only across areas largely defined by strategically significant streets –

Ref. No.	Subject	Issue	Recommendation
			i.e. those streets which are category 0, 1 or 2 – with the remaining roads covered by a less prescriptive noticing scheme. A noticing scheme on lower-priority roads would provide a lower-operational burden for network deployment.
A1.4	Noticing and permit schemes	Use of conditions in permits is placing excessive restrictions on network deployment	Review conditions being applied to permits to understand if restrictions can be less stringent in terms of timing, duration and working hours of works, traffic management, working methodologies and public noticing.
A1.5	Noticing and permit schemes	Local authorities may be assigning higher level road classifications for reinstatement under the SROH than necessary, which increases deployment costs and/or timescales	Review the reinstatement classifications being applied to understand if roads are being classified at a higher level than necessary. If the number of classifications at the higher levels of protection can be reduced, reinstatement costs would decrease and shorter notice periods could speed up network deployment.
A1.6	Noticing and permit schemes	Authorities may be designating higher numbers of traffic sensitive streets than necessary, which increases costs and timescales and adds restrictions on works	Review the designation of traffic-sensitive streets (TSS) in case local authorities are classifying more streets as traffic sensitive than necessary. Reducing the number of streets classified as TSS would reduce deployment costs and timescales, and lower the number of restrictions on street works.
A1.7	Noticing and permit schemes	Embargo periods could be delaying deployment more than necessary	Review the use of embargo periods to understand if there are signs of overuse in quantity and duration, and to consider if alternative approaches could be used to achieve the required outcome, such as using conditions within permits.
A2.2	Restriction (e.g. Section 58) notices	Full-width reinstatement obligations alter the business case for network deployment	Investigate the feasibility of applying alternative reinstatement obligations and reducing the timescales for preventing further works on roads following street works. For example, using half-width reinstatement as an alternative to full-width reinstatement could significantly reduce overall deployment costs.
A5.5	Other findings	Outsourced highway functions could be increasing costs of network deployment	Review the way outsourced providers are incentivised to meet performance targets including any relationships with permit scheme KPIs, the ability to charge fees and powers to issue penalty notices.

5.3 Recommendations for telecoms operators and highway authorities

Ref. No.	Subject	Issue	Recommendation
A3.2	Road traffic management	Lack of site visits by operators and local authorities is delaying permits and commencement of works	<p>Highway authorities should consider introducing requirements into street works application processes for improving preparation of the works, such as the highway authority offering to conduct site visits with the operator. This could mean compulsory site visits at more complex sites.</p> <p>Operators should introduce more detailed street works planning into their deployment planning processes, such as conducting more frequent site visits with highway authorities.</p>
A5.1	Other findings	Poor workmanship throughout the supply chain causes delays and increased costs for operators and local authorities, as well as raising safety concerns	<p>Operators should instigate improvement programmes to enhance the quality of work by their subcontractors in all matters of street works including health and safety, planning processes and communications. The focus on quality should also be manifest in future procurement of contractors and the subcontractor supply chain.</p> <p>Operators should also implement robust communication and governance regimes to ensure that appropriate authorisations and approvals are applied as works progress, and appropriate monitoring and auditing are performed.</p> <p>Highway authorities should consider implementing incentives for operators and their subcontractors to deliver quality workmanship, which could include fixed penalty notices for poor-quality workmanship or fee reductions when delivering compliant first-time reinstatements.</p>
A5.3	Other findings	Communication – dedicated resources to provide clear and consistent channels of communication between all stakeholders will help reduce issues arising before and during network deployment	<p>Operators and local authorities should develop plans for communications with all stakeholders, including communication with the public affected by works, throughout the entire process of infrastructure deployment. Good management of queries from the public can help identify issues that develop as a network deployment progresses, as well as raising awareness of the opportunities from the network being planned.</p> <p>Both parties should consider if extra resources could be employed to cope with the increased activity through the deployment period and how such resources could be funded by one, or both, of the parties. Resources would be employed by the authority, ensuring independence, but they could be assigned to facilitate the new network deployment.</p>

5.4 Recommendations for telecoms operators and planning authorities

Ref. No.	Subject	Issue	Recommendation
A4.1	Planning permission	Deployment has to be redesigned if late engagement with a planning authority results in planning permission being refused	Operators should engage with planning authorities early in their deployment planning process, which will help avoid the need for redesigning the deployment. Planning authorities should provide the ability for operators to engage early in their deployment planning process without being constrained by any formal planning processes that could limit the ability to communicate.
A4.2	Planning permission	Siting of cabinets is time consuming and potentially costly if wayleaves are required	Operators, and their subcontractors, should work closely with planning authorities to prepare adequate plans for siting cabinets on footpaths, and adhere to their approved planning permission. Operators should also consider sharing infrastructure with other operators during deployment planning. Planning authorities should clarify their policies and guidance for siting cabinets off footpaths as well as their policies and charges for providing wayleaves on local authority land.

5.5 Recommendations for telecoms operators

Ref. No.	Subject	Issue	Recommendation
A5.2	Other findings	Communication – Early engagement with local authorities can help operators avoid deployment issues and delays	Operators should include early engagement with local authorities, both highways and planning, as a standard part of their deployment planning processes to share information about their deployment plans. Issues about confidentiality should be reviewed with local authorities and protocols agreed for how information is shared and published.