

# **HAUC (UK)**

**HIGHWAY AUTHORITIES & UTILITIES COMMITTEE**

**Advice Note No. 2010/1**

**Diversionsary Works**

# CONTENTS

	Page
1. Introduction	3
2. Major Transport Works	4
3. Stray Currents	5
4. Major Bridge Works	6
5. Redundant Bridges	10
6. Other Types of Structure	11
7. “Greenfield” Sites	12
8. Information Transfer	13
9. Transparency, Audit and Payment	13
10. Dispute Resolution	14
11. Compensation	14
12. Fast-track Procedures	14
13. Discussions following Draft Scheme Stage (C3)	14
14. Alternative to Advance Payment	15
15. Payment for C4 Estimates	15
16. Diversionary Works Carried Out by the Authority’s Contractor	16
17. Cost Sharing on PFI Schemes	16
18. Developers, etc with Consent or Authorisation to Carry Out Major Works in the Highway	17
19. Establishing the Position of Undertakers’ Apparatus	17
20. Uncharted Apparatus	17
21. Condition and “Nature” of Existing Apparatus	18
22. Undertakers’ Apparatus Found at Shallow Depth	18
23. Temporary Diversion	19
24. Re-Diversion of Apparatus	20
25. Decision to Divert or Not	20
26. Formal Notice of an Authority’s Major Works	21
27. Types of Undertakers’ Apparatus	21
28. Undertakers’ Apparatus – Factors Material to Highway Works	22
29. Deferment of Renewal	23
30. Betterment	25
31. Guidance Letters and Forms	25- 49

## 1. INTRODUCTION

- 1.1 Revision of the Diversionary Works Code of Practice, '*Measures necessary where Apparatus is affected by Major Works (Diversionary Works)*', published in 1992, has been "on hold" for some time awaiting a decision by the Department for Transport on whether the current legal ruling on the issue of charging for estimates reflects the original intention of the legislation. Nevertheless, in recent years, the Diversionary Works Working Group (DWWG) has been convened to review issues of concern to practitioners and to disseminate advice so that improvements in understanding and working practices can be achieved.
- 1.2 In 2008, two HAUC(UK) Advice Notes – 2008/01 and 2008/02 - were issued on the subject of Diversionary Works. Later that year, HAUC(UK) agreed to the DWWG reviewing and advising on a further set of issues. This Advice Note represents the fruits of those labours. It should be read in conjunction with the current Diversionary Works Code. For clarity, it subsumes and supersedes 2008/01 and 2008/02, which are now withdrawn.
- 1.3 When the existing Code of Practice came into operation in England, Wales and Scotland on 1 January 1993, so did related Regulations as to how allowable costs for the necessary works will be borne by the parties concerned. It is important to recognise that, since then, the Regulations have been updated and are, in England the Street Works (Sharing of Costs of Works) (England) Regulations, in Scotland the Road Works (Sharing of Costs of Works) (Scotland) Regulations, and in Wales the Street Works (Sharing of Costs of Works) (Wales) Regulations. Throughout this Advice Note they are referred to simply as "the Regulations".
- 1.4 It is hoped that readers will also recognise that, for brevity:
  - Reference to "the Code" means the current Diversionary Works Code of Practice (June 1992);
  - Reference to "the Act" means the New Roads and Street Works Act 1991;
  - References to specific sections of the Act which only relate to England and Wales are followed by the relevant Scottish reference in brackets, eg section 84 (S-143); and
  - References to a "highway" or a "street" also mean a "road" in Scotland.
- 1.5 The DWWG comprises representatives of the National Joint Utilities Group (NJUG), the Joint Authorities Group (JAG(UK)), Network Rail and the Passenger Transport Executive Group. The guidance in this Advice Note has not only been agreed by the DWWG, but has also been the subject of extensive consultation with other interested individuals and organisations.
- 1.6 The DWWG recognises that sections 20, 21 and 22 of this advice note could represent a major problem for water and sewerage companies with the transfer of ownership to them in or around 2011/12 of thousands of kilometres of buried asset with no record of condition or location. To determine at C2, or even C3 stage, the nature, location and condition of unknown, perhaps only suspected, assets may prove financially unsustainable for the industry. The DWWG recommends that, unless covered by forthcoming legislative detail, all parties should work together to effectively manage this issue.

## 2. MAJOR TRANSPORT WORKS

### What are Major Transport Works?

- 2.1 Major transport works are defined in section 91 (S-150) of the Act. They are substantial works carried out for a transport undertaking in land “held or used” for the purposes of the undertaking. The Act lists the categories of transport undertaking covered by section 84 (S-143) as “*a railway, tramway, dock, harbour, pier, canal or inland navigation undertaking of which the activities, or some of the activities, are carried on under statutory authority.*” The statutory authority for long-standing railways will generally be the enabling Act of Parliament, but for most new projects the authority will be an order made by the Secretary of State for Transport under the provisions of the Transport and Works Act 1992, Transport & Works (Scotland) Act 2007 or, in the case of harbours and the like, the Harbours Act 1964.
- 2.2 The list makes no mention of a number of other forms of transport, such as trolley buses, and also excludes work to construct busways and quality bus corridors. Any highway modifications required for these purposes will fall within the definition of major highway works.
- 2.3 Major transport works likely to be encountered include the construction of a tramway or of a railway crossing of the street on the level (i.e. in the same horizontal plane as the road surface), or the maintenance or reconstruction of either of these which involves substantial works. In addition undertakers’ apparatus may be directly or indirectly affected by a wide range of other new railway facilities including stations, subways, cuttings, bridges over or under streets, portals, running tunnels etc. Docks, harbours and piers may have streets associated with them (the definition of a street in section 48 (S-107) of the Act is fairly wide) and improvements to any of them could lead to diversion of apparatus being necessary. Construction of new facilities could affect existing streets, and canal or inland navigation towpaths may also fall within the definition of a street.
- 2.4 Section 84 (S-143) of the Act applies to major transport works just as it does to major highway works. However, the engineering considerations may be quite different. The promoter of a transport undertaking is authorised by statute to install and maintain his apparatus in the street, and its introduction will generally compel the diversion of any other apparatus within its footprint to ensure that access can be maintained.

### Sharing of Costs of Works in relation to Major Transport Works

- 2.5 Authorities carrying out major works and undertakers shall, if the authority chooses to make the required advance payment, share the costs of protecting or diverting apparatus in the proportions set out in the regulations. The proportions vary, depending on whether the works are major highway works, major bridge works or major transport works.
- 2.6 In the case of major transport works, there are two different proportions that might apply. This is perhaps best understood by considering the reasons why the diversions are carried out.
  - If a tramway will fit within the highway layout without the need for any

modification, then any apparatus that needs to be diverted is directly affected by the construction or operation of the tramway. The authority and the undertaker share the cost of the necessary measures in the proportion of 92½% and 7½% respectively.

- If the highway needs to be modified in one of the ways listed in paragraphs (a) to (g) of section 86(3) of the Act (S – paragraphs (a) to (f) of section 145(3)), then the modifications and the introduction of the tramway are treated in the same way as major highway works. The cost of any necessary measures identified under section 84 (S-143) will be shared in the proportion 82% and 18% respectively.

2.7 A further issue that may cause confusion and uncertainty lies in regulation 5 of the Regulations:

*(1) This regulation applies where major works are initiated -*

*(a) by an authority on behalf of another person or by an authority other than in its capacity as such; or*

*(b) by an undertaker for the purposes of any such person,*

*and diversionary works are executed by an authority or the undertaker.”*

2.8 This regulation is sometimes mistakenly thought to pertain to transport works that have an element of private funding. However, the regulation will not apply to a transport authority carrying out work on the scheme for which it has been authorised by the Secretary of State. The authority is the person or body having control or management of the transport undertaking, and might therefore be the original promoter or one of its agents acting on its behalf, or a Concessionaire appointed under a PFI contract. A transport authority authorised by an order under the Transport and Works Act can only act in accordance with the order. Consequently it cannot act on behalf of another person, or otherwise than in its capacity as a transport authority. Since this regulation does not apply, the source of the funds is not relevant to the operation of the Regulations.

### **3. STRAY CURRENTS**

3.1 Some railways, and all tramways, are operated by electrical current. The current is normally collected from overhead wires, particularly on systems that operate in streets, but the railway could be powered by third or fourth rail dc systems. Street-running tram systems are powered at a nominal voltage of 750 volts dc. Electrified railways crossing the street are more usually operated at 25kV ac. This guidance will concentrate on dc systems, as stray alternating current has little significance for undertakers' apparatus.

3.2 The collected current passes through the motors, and then returns to the substation along the rails. Because the rails are in contact with the earth, there is a possibility that some current will return to the substation through the earth, rather than along the rails. This fraction of the return current is referred to as stray current.

3.3 The significance of stray current is that it can cause corrosion in metal. This occurs at the point where the current leaves the metal to return to the substation.

Undertakers' metallic apparatus in the region of the tramway may attract the stray current, resulting over a long period in pitting of the surface of the metal, and ultimately the creation of a hole in it.

- 3.4 Transport authorities whose systems use electricity for the motive power have a duty to minimise the loss of current into the ground. Tramways that have been built in this country since 1990 have done this by minimising the resistance of the rails to the passage of electricity, and at the same time maximising the resistance between the rails and earth by encasing them in an insulating material. All rails are interconnected by conducting materials ("bonded") so that the resistance to the flow of current is reduced to the lowest practicable level, while substations are placed at regular intervals. Stray current is reduced by reducing the spacing between substations.
- 3.5 Each tramway promoter is free to adopt their own method of minimising stray current. Adoption of a method that is less effective than those that have already been found to work satisfactorily may well expose the promoter to claims for nuisance. At the same time, it has long been recognised that there are many potential sources of corrosion in the ground, and that undertakers should, in their own interests, use materials that resist the effects of stray current.
- 3.6 It is normal that the level of stray current in undertakers' apparatus is monitored before and after construction and during operation.
- 3.7 Diversionary works are carried out because access to undertakers' apparatus is restricted or prevented. Apparatus should not be moved in anticipation that it might be affected by stray currents, since the transport authority's obligation to minimise them by the design of the undertaking should make this unnecessary. This includes an obligation to ensure that the protective measures are adequately maintained.

#### **4. MAJOR BRIDGE WORKS**

- 4.1 Section 84 of the Act (S-143) provides the framework where undertakers' apparatus in a street is or may be affected by major highway works, major bridge works or major transport works. 'Major bridge works' within the meaning of the Act are defined in section 88(2) of the Act (S-147(2)). They are works carried out by the bridge authority for the replacement, reconstruction or substantial alteration of a bridge.
- 4.2 Major bridge works are therefore associated with an existing bridge and may be required as a result of highway works or strengthening works to meet current loading or other requirement or as a result of railway or other works. Usually they are carried out within the overall envelope of the existing bridge within land that is already owned or available to the bridge authority. However, under section 92 of the Highways Act 1980, a bridge may be reconstructed on a new site within 200 yards (183m) of the old one. In the case where a bridge is widened, additional land may be required by dedication or acquisition.
- 4.3 Under section 88(1)(a) of the Act (S-147(1)(a)), "references to a bridge include so much of any street as gives access to the bridge and any embankment, retaining wall or other work or substance supporting or protecting that part of the street".

- 4.4 A bridge is the responsibility of the relevant bridge authority. A road passing over or under a bridge could be designated as a “protected street” or a “street of special engineering difficulty”.
- 4.5 A bridge authority undertakes major bridge works. A bridge authority is the authority, body or person in whom the bridge is vested (defined in section 88(1)(b) of the Act (S-147(1)(b))). The bridge authority could be a highway or roads authority, transport authority or tunnel authority, a Local Authority, the Highways Agency, Transport Scotland, Transport for London, the British Railways Board (redundant rail asset), Network Rail (operational rail asset), British Waterways, London Underground Limited, a Port Authority, or a Bridge Board. Where a bridge carries a maintainable highway, it will usually be vested in the ownership of the highway authority, but in some cases it may be vested in another authority, for example the transport authority where it crosses a transport undertaking.
- 4.6 A bridge may belong to and be maintainable by a private individual by reason of tenure, prescription or statute, but these situations are relatively unusual.
- 4.7 In some cases, for example where a bridge carries a highway over a third party undertaking (e.g. British Waterways), a Works Agreement may be required or may already exist. Works Agreements are legal documents that state the responsibilities and requirements for the carrying out of works on the bridge. These responsibilities and requirements, which could have an impact on any diversionary works or necessary measures, must be accepted and included in the planning of major bridge works to ensure permission to proceed is granted by the bridge authority to execute any works. However, in accordance with section 100 of the Act (S-159), such a Works Agreement cannot purport to make provision regulating the execution of street works.
- 4.8 Some major bridge works, eg road-over-rail, will require temporary possessions of the railway to ensure the safety of the railway operations and undertakings. The carrying out of the bridge works, any diversionary works and necessary measures may be restricted to the possession times, which could have a major influence on cost.
- 4.9 Bridge structures are varied in nature and may be of arch, girder or deck type. They include bridges, flyovers, underpasses, subways, viaducts, aqueducts, culverts, and footbridges. The construction materials may be of brick, concrete (reinforced or pre-stressed), steel, iron, timber, reinforced earth, masonry or plastic or a composite mixture of these and other materials.
- 4.10 Many bridges are classified as ‘Ancient Monuments’ or ‘Listed Structures’ and special consent will be required in order to undertake the major bridge works.
- 4.11 Where a bridge carries the highway, undertakers have certain powers to lay apparatus in the highway. The presence of this apparatus will affect any work undertaken to the bridge structure. By virtue of section 88(3) of the Act (S-147(3)), any statutory right to place apparatus in the street also includes the right to place apparatus in, and attach apparatus to, the structure of the bridge. In this situation undertakers have the usual rights to execute street works in relation to that

apparatus subject to prior consultation with the bridge authority and compliance with any reasonable requirements.

- 4.12 Apparatus contained in the approach streets forming part of a highway bridge may cross the obstruction spanned by the bridge on independent supports placed alongside. Any adjustment of this apparatus made necessary by the major bridge works will fall within the definition of necessary measures, and will be carried out and valued in accordance with the Code and Regulations.
- 4.13 Works undertaken to the foundations, piers or abutments of a bridge over a highway may affect any apparatus laid in the highway.
- 4.14 It is essential that the structural integrity of the bridge is maintained throughout the execution of the major bridge works and any associated diversionary works. Any accidental damage caused to the bridge, no matter how minor, must be reported to the bridge authority.
- 4.15 To ensure a scheme is completed successfully, it is important that planning, liaison, co-ordination, consultation, noticing and co-operation between all parties including bridge authorities, street authorities, designers, interested third parties, undertakers and contractors are carried out in accordance with best practice as early as possible in the process and maintained throughout. This will ultimately have a bearing on the design, specification, robustness of C3 and C4 estimates, health and safety, accuracy of programming, co-ordination of works and diversionary works, methods of working, quality of work and ultimately final cost.
- 4.16 The nature of the major bridge works may necessitate temporary or 2-stage diversion of undertakers' apparatus. The cost should be included in the C3 Budget Estimates and C4 Detailed Estimates together with the cost share allowance. (See section 23 below)

### **Sharing of Costs of Works in relation to Major Bridge Works**

- 4.17 Authorities carrying out major works and undertakers shall, if the authority chooses to make the required advance payment, share the costs of protecting or diverting apparatus in the proportions set out in the Regulations. The proportions vary depending on whether the works are major highway works, major bridge works or major transport works.
- 4.18 If major transport works include work on a bridge not vested in the transport authority, the cost of necessary measures will be shared between the transport authority and the undertaker in the proportions of 92 ½ % and 7 ½ % respectively. In all other cases the cost of the necessary measures will be shared in the proportions of 82% and 18% respectively.
- 4.19 The design and construction of major bridge works have to take account of the need to maintain undertakers' apparatus of equivalent capacity and mass of existing apparatus in the existing bridge through the provision of adequate space and structural strength. The bridge authority is liable for the costs arising from these requirements. A bridge authority is not required to design adequate space or

strength for enlargement of apparatus, but may do so at the request of an undertaker, who will bear all additional costs.

- 4.20 The cost sharing principle applies to the allowable costs of any ducts, pipe bays, hangers or other provision for housing or supporting undertakers' apparatus within the structure of a bridge. A bridge authority is not required to design adequate space or strength for new or future apparatus. An undertaker wishing to take the opportunity to increase provision for apparatus in a bridge must meet the additional cost involved, which would include the additional design work, structural requirements, materials and construction as well as the additional cost of the apparatus. This is because every bridge is different and the design/provision of suitable ducting, access, etc is different. The actual cost of such work can be extracted from the tendered contract or schedule of rates used. Features may be incorporated at design stage into the structure by the bridge authority in consultation with the undertaker and the cost apportioned at C9 stage accordingly.
- 4.21 If an undertaker places new or additional apparatus in a bridge after the authority has given the undertaker not more than 10 years notice of its intention to execute major bridge works, the undertaker is not entitled to share the allowable costs and will pay 100% of the cost of diverting the apparatus as required by the Regulations. Where maintenance of existing apparatus may necessitate replacement, prior discussions with the bridge authority are strongly recommended.

### **New Bridges**

- 4.22 Where a new bridge is required to replace an existing bridge that carries a highway containing undertakers' apparatus the authority will be responsible for the cost of ensuring that the new bridge can safely accommodate that apparatus. However, since bridge replacement constitutes major bridge works, the rerouting of undertakers' apparatus will be subject to diversionary works procedures and cost sharing. Wherever possible, when a highway is diverted to a replacement bridge, consideration should be given to retaining the existing bridge in order to avoid diverting undertakers' apparatus (see also 5.3 and 5.4).
- 4.23 Where a new additional bridge is required to carry an existing highway, in which undertakers' apparatus is present, e.g. over a new highway or transport undertaking, then the authority will be responsible for the cost of ensuring that the bridge can safely accommodate that apparatus. However, since the construction of such a bridge will almost certainly involve reconstruction and/or widening and/or substantial alteration of the level of the highway, these will be major highway works and the rerouting of undertakers' apparatus will be subject to diversionary works procedures and cost sharing.
- 4.24 Where a new or additional bridge is built over an existing highway that contains undertakers' apparatus, any rerouting of that apparatus to accommodate the new bridge's foundations or other impacts on the existing highway will be subject to diversionary works procedures and cost sharing.
- 4.25 When no apparatus is present in an existing bridge, consideration should be given to consulting undertakers to determine if they have any requirements for a route in the new bridge. If they do, then this would be at their cost.

## **5. REDUNDANT BRIDGES**

- 5.1 A bridge may become redundant because a highway or a transport undertaking above or below has closed or as a result of a replacement bridge being built nearby. A highway or bridge becoming redundant will have implications for an undertaker with apparatus in it.
- 5.2 The relevant bridge authority would normally issue a formal declaration of redundancy when demolition is expected to occur within ten years of the declaration. Reasonableness of the expectation would be demonstrated by way of the scheme appearing in a Local Transport Plan. Undertakers must respond with a statement of their apparatus in the bridge. If an undertaker installs apparatus in a bridge following a declaration of redundancy, and demolition takes place within the ten-year period, then the undertaker will be responsible for the full cost of diverting the additional apparatus.
- 5.3 A road crossing a redundant bridge may be closed as a result of a stopping up order issued by the highway authority, with undertakers' rights with respect to their apparatus preserved by the terms of the order. Alternatively the public rights over the bridge may be reduced by an order, e.g. to make it a footbridge or cycle-bridge. In this case undertakers' rights should be maintained as the crossing remains a highway. In either event the bridge may not then be maintained to the same loading standard as previously. But in both cases undertakers' rights should be protected, including maintenance of their ability to work on the apparatus on the bridge with the appropriate plant. If this is not possible then apparatus present will require diversion at the appropriate authority's cost. On the rare occasion where the bridge is privately owned and has not been vested in the highway authority this advice may not apply.
- 5.4 It is recommended that authorities and undertakers co-operate to find alternative routes for apparatus in a redundant bridge. Where it is important for an undertaker to maintain a route for apparatus in a redundant bridge then the undertaker may consider adopting the bridge.
- 5.5 Where the redundant bridge needs to be demolished with no replacement, and the undertakers' apparatus moved, cost sharing will not apply. However, if it is replaced by a new bridge (see para 4.22 above) or if it is replaced by a nearby existing bridge (which may or may not need strengthening) then diversionary works procedures and cost sharing will apply.
- 5.6 If a feature, such as a transport undertaking below the highway, has closed, but the highway remains, the bridge is usually retained and apparatus carried by the bridge can remain. The redundant feature may allow for infilling under the bridge structure. In some cases responsibility for the bridge will transfer from the transport undertaking to the local highway or bridge authority. There are many examples nationally of disused railway bridges becoming the responsibility of local highway and bridge authorities.

## **6. OTHER TYPES OF STRUCTURE**

### **Service Tunnels**

- 6.1 Service tunnels are often found in London and other large cities and often run under the highway. They contain either single or multiple undertakers' apparatus. The service tunnel may be owned by either a highway authority or an undertaker.
- 6.2 Where an authority carrying out major works chooses to make the required advance payment, the relevant parties shall share the costs of protecting or diverting apparatus in the proportions set out in the Regulations depending on whether the works are major highway, major bridge or major transport works.
- 6.3 Where major highway or major transport works encounter a service tunnel, it should be treated as 'apparatus' in the same way as the utility apparatus contained within it. Service tunnels are not encountered on bridges.
- 6.4 It must be remembered that there are two different proportions that might apply to major transport works. If the direct impact of the construction or operation of the tramway/railway, etc requires the service tunnel to be moved, the authority and undertaker will share the cost of the diversionary works in the proportion 92.5% and 7.5% respectively. Undertakers' apparatus would be diverted into the diverted service tunnel and the cost of the diversionary works would be shared in the same proportion. If the highway needs to be altered in any way to accommodate the installation of the tramway/railway infrastructure, this would be treated as major highway works. (See clause 2.6 of this guidance note).
- 6.5 Major highway works that require a service tunnel to be moved will involve sharing the cost of the diversionary works in the proportion 82% and 18%. Undertakers' apparatus contained within the service tunnel would be diverted into the diverted service tunnel and the cost of the diversionary works would be shared in the same proportion.

### **Tunnels**

- 6.6 A tunnel is the responsibility of the relevant Tunnel Authority, for example Transport for London in the case of the Thames Road Tunnels and the Merseyside Integrated Transport Authority in the case of the Mersey Tunnels. These and other Tunnel Authorities are members of the Road Tunnel Operators Association, details of which can be found on the internet.
- 6.7 A tunnel provides a unique concentration of assets and risks. Unless very old, it is unlikely that there will be any undertakers' apparatus in a tunnel. A tunnel authority may seek to prevent undertakers installing apparatus in its tunnel(s) to keep the risks to a minimum. If it contains a highway it is recommended that a tunnel be designated as a 'protected street'. It is also recommended that all highways over tunnels be designated as a 'street with special engineering difficulties'.
- 6.8 Some tunnel authorities may allow undertakers to place apparatus within their tunnels under easements or special licence agreements. These would place legal duties on the tunnel authority in the event of any major works to the structure of the tunnel or road within and undertakers who wish to carry out works on their apparatus.

- 6.9 A tunnel authority proposing to undertake major works to the structure of the tunnel is required to consult and serve notice on the highway authority and undertakers. This will enable risks to any roads passing over the tunnel to be considered along with requirements for temporary traffic diversions. If the tunnel is on a strategic route the availability for maintenance closures may be severely constrained, so any such works need to be planned and co-ordinated as early as possible. It should be noted that the tunnel authority is not entitled to cost sharing allowances under the Act where its works affect undertaker's apparatus.
- 6.10 In the case of an authority or undertaker undertaking street works, major highway works, major bridge works or diversionary works on a road over a tunnel, it must consult the tunnel authority as early as possible. This is because piling or drilling may affect the tunnel below or the works may place cut and cover sections and the tunnel portals at risk. Some tunnels have portals that are Grade 2 Listed.
- 6.11 Authorities and undertakers are required to serve notice on the tunnel authority unless the tunnel is at such a depth that there no reasonable possibility of the works affecting it.

### **Culverts**

- 6.12 A culvert is a structure that supports the highway embankment over a feature, such as a water course. Procedures would be as for major bridge works described above.

### **Retaining Walls**

- 6.13 Where a retaining wall exists, the authority's works and diversionary works need to be carefully planned and executed to ensure that the stability of the retaining wall is maintained.

## **7. "GREENFIELD" SITES**

- 7.1 Section 84 of the Act (S-143) provides the framework within which undertakers are obliged to move their apparatus *in a street* to facilitate major highway works, major transport works or major bridge works. The Code is intended to provide detailed advice for the understanding of this section only. However, there are other circumstances under which apparatus may need to be moved in land subject to a compulsory purchase order and/or where other legislation applies, eg the relevant Town & Country Planning Acts in England and Scotland.
- 7.2 Assuming that some work is carried out to modify the undertaker's infrastructure, or some right is extinguished, then any compensation that the undertaker may be entitled to will be calculated in accordance with the relevant legislation.
- 7.3 It should be noted that the formal notice procedures included within the legislation may not come into play until fairly late in the preparatory stages of the scheme. For instance The Town & Country Planning Act in England states that notice is served once the land has been acquired (S271). DWWG would stress the need for contact between the promoting authority and affected undertakers at the earliest opportunity to ensure that the diversionary measures required can be arranged to suit the programme for the works.

## **8. INFORMATION TRANSFER**

- 8.1 Diversionary works procedures involve the sending of a range of documents (eg formal notices, letters, drawings, estimates and invoices) from one party to another. The DWWG has agreed that, in order to minimise the time taken to pass information and to facilitate the handling of data, maximum (but non-mandatory) use should be made of electronic means of transfer, where practical. However, if this is not practical for either party, this should be made clear at the earliest opportunity and alternative methods agreed.

## **9. TRANSPARENCY, AUDIT AND PAYMENT**

- 9.1 The DWWG has agreed that arrangements should be made available for either party to verify that charges being made are allowable and reasonable. Parties should be prepared to meet all reasonable requests for providing supporting documentation by post, electronic means or at the owner's local premises.
- 9.2 In addition, reasonable access should be made available at relevant premises for occasional, more comprehensive, audits to be undertaken. An audit trail should be available at all stages of a scheme. It is noted that some undertakers do not carry out full audits of all contractors' claims as part of their standard business practices. Authorities should therefore make undertakers aware at an early stage if they intend to carry out a full audit so that the necessary arrangements can be made and the additional costs included in estimates.
- 9.3 Following completion of the diversionary works, the total allowable costs should be calculated and, to comply with Regulations, any final audit should be undertaken within 35 days of the final account being issued. This complements the regulatory requirement for payment within 35 days of the final account being issued. It is strongly recommended that the final account is agreed before being issued.
- 9.4 It is important that any final audits are completed within the stated timescales as disputes involving invoices that are not paid may lead to court action.
- 9.5 Once the works have been agreed, payment of interim invoices should normally be made within 30 days of presentation and payment of the final invoice shall be made within 35 days of the final account being issued. This is incorrectly quoted as 30 days in C9.7 "Settlement of Final Invoice" of the Code and should be disregarded.
- 9.6 If the payments by the authority exceed the relevant proportion of allowable costs the undertaker shall refund the authority the excess within 35 days of the final account being issued.
- 9.7 Occasionally undertakers have to enter private land to complete the necessary measures and the affected landowners may be eligible for compensation payments. The costs of such claims made against the undertaker are recoverable from the authority, but it could take several years for the claims to be settled, which is well beyond the timescales for submission of the Final Account and final audit. Undertakers should keep authorities fully informed and ensure that the costs of the claims are reasonable because the sums involved can be significant. Invoices should be submitted to the authority as each claim is settled, with due allowance for cost share where appropriate.

## **10. DISPUTE RESOLUTION**

- 10.1 The Code is intended to provide sufficiently detailed guidance to enable agreement on its operation and implementation to be reached at local level. Authorities and undertakers should always use their best endeavours to achieve a solution to disputes without having to refer them to more formal proceedings. This might be achieved by referring the issue to management for settlement.
- 10.2 If a dispute cannot be resolved at the outset by best endeavours, the Dispute Resolution procedure in Chapter 13 of the 'Code of Practice for the Co-ordination of Street Works and Works for Road Purposes and Related Matters' should be followed. This should be used as a replacement for Chapter 10 of the Code.
- 10.3 Ultimately, if agreement cannot be reached, section 84(3) of the Act (S-143(3)) makes provision for the dispute to be settled by arbitration unless the dispute involves compensation (see section 11 below).
- 10.4 In Scotland, disputes should be resolved in accordance with the Code of Practice for Dispute Resolution and Appeals issued by the Scottish Road Works Commissioner.

## **11. COMPENSATION**

- 11.1 Section 84 of the Act (S-143) states that either party shall be liable to compensation for any loss or damage caused by the failure to comply with the agreement between the parties. Neither the Act nor the Regulations state what form the compensation may take. Therefore the references to interest or reimbursement payments in C9.5 "Late Payment and Late Commencement" and C9.8 "Interest or Reimbursement Payments" in the Code should be disregarded.
- 11.2 Compensation claims cannot be determined by arbitration by virtue of section 96(3) of the Act (S-155(3)).

## **12. FAST-TRACK PROCEDURES**

- 12.1 The DWWG has agreed that existing guidance on this should be expanded, as follows.
- 12.2 For some works, following preliminary enquiries (C2), the draft (C3) and/or detailed scheme stage (C4) may be omitted, by agreement, and the process may commence with the submission of a final scheme to an undertaker by an authority. This could apply where the effect on undertakers' apparatus is believed to be minimal and/or little option for alternative diversionary works by the undertaker is foreseen. However if, following investigation, the undertaker determines that the effect of the works on his apparatus is not minimal and/or alternative diversionary works options do exist, then a statement to that effect should be made by the undertaker, and he may respond as if at the draft C3 stage and engage in discussions as outlined in section C3.
- 12.3 Both parties should note that, even if the C3 and/or the C4 stages have been omitted, it is still necessary to settle a specification of necessary measures and to determine and agree by whom, when, and in what order they are to be undertaken.

## **13. DISCUSSIONS FOLLOWING DRAFT SCHEME STAGE (C3)**

- 13.1 The DWWG has agreed that discussions shall take place between the authority and undertakers, either separately or jointly, following draft scheme stage (C3). The

purpose will be to consider the scheme and any modifications which might assist in facilitating the programming of the works and/or reducing the cost of diversionary works. These discussions should also help the authority and the undertaker to determine whether a C4 stage of the process is required. However, undertakers should not be expected to enter into endless discussion nor provide any number of reviews of alternative schemes and C3 estimates.

#### **14. ALTERNATIVE TO ADVANCE PAYMENT**

- 14.1 The arrangements for cost sharing set out in the Code and the Regulations are complex and have, on occasions, been misunderstood. In particular, because most authorities generally choose to take advantage of cost sharing by making a 75% payment in advance of preparation of design work and C4 estimates and diversionary works commencing, some undertakers have come to expect this in all cases. The DWWG would like to remind all parties that the making of the advance payment is entirely at the discretion of the authority. If it chooses not to do so, however, it forfeits the right to the cost share allowance.
- 14.2 Where advance payments are accepted it may be further agreed that the payments may be made in stages throughout the programme of diversionary works. It should be remembered that if a process of stage payments in advance is agreed the balance payments are due in equivalent stages as the works proceeds.

#### **15. PAYMENT FOR C4 ESTIMATES**

- 15.1 S85 of the Act (S-144) provides that the allowable costs of carrying out the measures identified in accordance with the procedures set out in s84 (S-143) are to be borne by the authority and the undertaker in prescribed proportions (ie as specified in the Regulations). The section also provides for the Regulations to define which costs are allowable.
- 15.2 It has long been established that the cost of carrying out a construction project includes the costs of planning and designing the works. Consequently the cost of preparing plans, estimates and specifications leading up to the diversionary works are allowable costs (if they were not, they could not be reclaimed by the undertaker). However, in accordance with the Regulations, the costs of preparing the initial set of plans and estimates are disallowed, and have consequently to be borne by the undertaker who prepares them.
- 15.3 Under normal circumstances, the cost of preparing C4 estimates should be considered to be the first of the allowable costs, and should be treated as an instalment as provided for in regulation 8(1)(b). It is strongly recommended that an authority intending to pay for works in advance to obtain the benefit of the cost sharing provisions, should also pay in advance for the preparation of the C4 estimate. The Regulations are not compromised where the undertaker fails to supply an estimate of the cost of preparing the C4 estimate, or does not intend to charge for it.
- 15.4 A proportion of schemes that reach the stage of making a request for and receiving a C4 estimate will be abandoned before diversionary works are undertaken. In these circumstances, authorities who have paid in advance their proportion of the (estimated) cost of preparing the estimate should pay the balance of the cost when the scheme is abandoned. Alternatively, authorities should consider whether it is more equitable to pay in advance 100% of the (estimated) cost of preparing the

estimate (in case the scheme should be abandoned) and recover the undertaker's contribution as the scheme proceeds. They will in any case be liable to pay 100% of the cost if they do not pay in advance.

15.5 It is not appropriate to absorb the cost of preparing C4 estimates in the undertaker's overheads, as the ratio of the cost of preparing the estimate to the total scheme costs will be different for each project.

## **16. DIVERSIONARY WORKS CARRIED OUT BY THE AUTHORITY'S CONTRACTOR**

16.1 Paragraph v of Appendix C4 of the Code points out the potential benefits of having the civil engineering elements of the undertaker's works carried out by the authority's contractor. It is, however, important to consider the implications of this approach and how it should best be managed. For example, there may be some difficulty in establishing the responsibility for any delays that might give rise to a compensation event under s84(4) (S-143(4)).

16.2 Where it is agreed that the authority's contractor will carry out some elements of diversionary works, the following alternative processes are suggested:

- Separate the undertaker's works from the authority's works, so that the contracts are distinct from each other, even if the contractor is the same in each case. This will ensure that the responsibilities of each party do not become interdependent. However, it does open up the possibility of cross-claims if one contract is held up by the other.
- Ensure that the contract between the authority and its contractor is made subject to the Contracts (Rights of Third Parties) Act 1999, with the undertakers expressly identified in the contract as having a right to enforce such of the terms as are relevant.
- Draw up an agreement between the authority and each of the undertakers that sets out the work to be carried out by the authority's contractor on behalf of the undertakers. This will need to specify the rights and responsibilities of each party, and how they are to be enforced. One of the disadvantages of this approach is that the authority will in effect become responsible for work which would otherwise be the responsibility of the undertaker.

## **17. COST SHARING ON PFI SCHEMES**

17.1 In a typical PFI contract, an authority will delegate responsibility for the management, maintenance and improvement of a road to a private company. Often major works will be required in the short to medium term. That company will provide the funds for whatever works are necessary and will be reimbursed by the authority over a long term period, typically 30 years. When a PFI company promotes major works which necessitate utility diversionary works, there has been uncertainty about whether or not cost sharing applies. The DWWG advises that it does apply, because the authority remains the owner of the road and ultimately bears the cost of the works.

## **18. DEVELOPERS, ETC WITH CONSENT OR AUTHORISATION TO CARRY OUT MAJOR WORKS IN THE HIGHWAY**

- 18.1 There have been instances where developers and other third parties executing works in the highway with consent, authorisation or agreement have failed to engage with undertakers. In some cases undertakers have discovered that their apparatus has been placed at risk and have been faced with recovering the unexpected cost of safeguarding it or diverting it.
- 18.2 Authorities should, as part of granting consent or authorisation, require that all third parties engage with undertakers, in accordance with the requirements on authorities in the Code, as early as possible to agree the cost and extent of any diversionary works or measures necessary to safeguard their apparatus. Authorities should also ensure that developers' and others' works in the highway are registered and appropriate notices are issued.
- 18.3 Anyone undertaking works in the road, whether as a highway authority, a statutory undertaker or a third party, has a duty of care to all others who may be affected by the works and will be generally liable for any loss arising from their negligence. Only if an authority has failed to exercise reasonable care in undertaking its statutory duties, or has been negligent in some other way, should an undertaker seek to recover its losses from the authority.
- 18.4 The general intention of the Regulations is to exclude the cost share provision in the case of major works that are carried out on behalf of someone who does not have the statutory powers to carry them out for themselves. In this event, the authority may pay the full cost of the works, and recover the costs from the third party. This will apply to, for example, the construction of a new roadway leading from an existing highway into a new supermarket or retail park where making the connection to the existing highway results in diversionary works being necessary.

## **19. ESTABLISHING THE POSITION OF UNDERTAKERS' APPARATUS**

- 19.1 Some undertakers provide details of their apparatus on the internet or periodically send updated information to authorities on CDs. The DWWG has agreed that this should not remove the need for the preliminary enquiries stage (C2) if the authority identifies that additional information is required. However, it offers undertakers the opportunity simply to direct authorities to this information, *where it is up to date*, rather than providing it again. If no additional information is requested by the authority, then the provision of the electronic record should suffice as the initial C2.

## **20. UNCHARTED APPARATUS**

- 20.1 A problem arises when an authority, in carrying out major works, discovers undertakers' apparatus in the highway of which it has not previously been notified. If this apparatus then needs to be diverted or protected in order to prevent damage, the cost will not have been allowed for by the authority. In these circumstances, the undertaker must provide as quickly as possible, and at no cost to the authority (because there will not have been a C3 estimate provided for this apparatus), a C4 Detailed Scheme and Detailed Estimate so that necessary measures and costs can be agreed with the authority.

20.2 It is recognised that significant improvements need to be made in the accurate recording of the position and nature of underground apparatus, and this is an issue which HAUC(UK) and other organisations are investigating. In the meantime, the Code clearly places an onus on undertakers to take any necessary steps to determine the general position and nature of their apparatus. Therefore, if an authority discovers uncharted apparatus, it is behoven on the undertaker to demonstrate that he has taken all reasonable measures to avoid such a situation. If he has, then additional costs of diversion or protection should be treated as allowable costs in the normal way. However, if he has not notified to the authority the existence of apparatus which could have reasonably been expected to have been identified, then he shall be liable for any additional costs.

## **21. CONDITION AND “NATURE” OF EXISTING APPARATUS**

21.1 The current Code clearly places an onus on undertakers to take any necessary steps to determine the general position and nature of their apparatus at the C3 (Draft Schemes and Budget Estimates) Stage. In the opinion of the DWWG, this includes general knowledge of length, size, material, age and condition of apparatus and, in the case of electricity cables, whether or not they are “live”. Such knowledge is fundamental to the decision on whether to divert, to strengthen, or to protect, and to compiling a budget estimate. At this stage, any surveys or inspections that might be required by the undertaker would be at their expense. Unless readily available, information about location and diameter of individual services and service pipes is not an expectation of this advice note.

21.2 At the C4 (Detailed Scheme and Detailed Estimates) Stage, further investigations might be required to prepare the detailed specification of the works and to enable accurate allowances to be made for deferment of renewal and recovery of materials. Such further investigations could be allowable costs if the undertaker can demonstrate that the information required could not reasonably have been gathered during routine surveys and inspections or investigations at C3 stage.

## **22. UNDERTAKERS’ APPARATUS FOUND AT SHALLOW DEPTH**

### **The Problem**

22.1 A problem arises when an authority, in carrying out major works, discovers undertakers’ apparatus in the highway at a depth that is shallower than expected. If this apparatus then needs to be diverted or protected in order to prevent damage, the cost will not have been allowed for by the authority.

### **What is Shallow Depth?**

22.2 The present Code states that “it is rarely acceptable to have the apparatus located within the footway or carriageway construction and preferably not within 75mm of it except in special circumstances” (5.2.1). This statement is too imprecise to easily establish where responsibility for apparatus at shallow depth might lie, and measurement from the underside of footway or carriageway construction is often impractical.

22.3 There are various possible sources of data on the guideline depths at which utility apparatus should be placed. To promote consistency, the DWWG strongly recommends that reference should only be made to the Specification for the Reinstatement of Openings in Highways code of practice which states that

apparatus greater than 20mm external diameter will not normally be permitted within road structures. Variances should be by written agreement with the highway authority.

- 22.4 For the avoidance of doubt, therefore, the DWWG recommends that any apparatus found within the bound layers should be considered to be “shallow”.
- 22.5 Depths will vary according to the reinstatement structure of the highway relating to the road category or whether footway or verge. Cycle tracks should match the road category or the type of footway. It is emphasised that the above is not definitive but simply an initial benchmark for establishing whether or not apparatus might be deemed to be “shallow”. It should be noted that this guidance applies to all methods of installation, including slot cutting.
- 22.6 It must also be recognised that there might have been reasons at the time of installation of the apparatus that necessitated its positioning at a depth less than the above. In these circumstances it is reasonable to expect some documentation or other evidence to exist to confirm this. Changes in surface levels as a result of previous highway works should also be considered.

#### **What to do if Apparatus is Discovered at Shallow Depth**

- 22.7 The undertaker must provide as quickly as possible, and at no cost to the authority (because there will not have been a C3 estimate provided for this apparatus), a C4 Detailed Scheme and Detailed Estimate so that necessary measures and costs can be agreed with the authority.
- 22.8 Both parties should also check their records in order to determine whether any agreement was made at the time of its installation to place the apparatus at shallow depth.

#### **Responsibility for Additional Costs**

- 22.9 If there is evidence that there was an agreement to place apparatus at shallow depth, then the undertaker shall not be liable for the extra costs of diversion or protection. These shall be treated as allowable costs in the normal way.
- 22.10 For apparatus installed before the date of this Advice Note, if no evidence of agreement can be found, it should not automatically be assumed that there was not a good reason for installation at shallow depth. In these circumstances, both parties should be prepared to investigate and discuss the matter further. However, if no agreement can be reached on whether there might have been good reason for installing the apparatus at shallow depth, then the DWWG strongly recommends that the extra costs of diversion or protection be shared between the two parties on an equal basis.
- 22.11 For all apparatus installed after the date of this Advice Note, it is vital that a record is kept by both parties of any agreement to install it at shallow depth, and that this is shared when needed, eg for C3 initial estimates. If no evidence of an agreement can be found, then the undertaker will be liable for the associated additional costs of diversion or protection.

### **23. TEMPORARY DIVERSION**

- 23.1 For most schemes, diversionary works simply involve the installation of new apparatus in a new permanent position. However, there can be circumstances

when the new permanent position is not available at the time when the apparatus needs to be moved from its original position. In these circumstances, the apparatus will need to be moved to a temporary position and then moved again at a later date to its new permanent position. Such “double handling”, if unavoidable, should be clearly identified by the undertaker in its C4 Detailed Scheme and Detailed Estimate and agreed with the authority as necessary measures and costs. Such costs are “allowable”.

- 23.2 There might be other circumstances when, even though a temporary diversion is not strictly necessary, an undertaker chooses to adopt this approach for his own operational purposes. In this case, the additional costs of this “double handling” must be borne solely by the undertaker. Alternatively, if the authority or its contractor requires a temporary diversion, this should be at no cost to the undertaker.

## **24. RE-DIVERSION OF APPARATUS**

- 24.1 There have been instances when, because of an authority’s major works, an undertaker has been obliged to divert his apparatus to what was believed to be a new permanent position, only to be required to move it again shortly afterwards because of further major works. This is different to the use of a temporary diversion where there is an initial expectation and a plan for “double handling”.
- 24.2 The regulations do not recognise this situation and so, strictly, since both diversions are the consequence of major works, the costs of both are “allowable” for cost sharing. However, the DWWG recommends that, in these circumstances, where the second major works could reasonably have been anticipated to have necessitated re-diversion of apparatus moved as a consequence of the first major works, then the authority should bear all of the costs of the re-diversion.

## **25. DECISION TO DIVERT OR NOT**

- 25.1 A question which sometimes arises is “Who is ultimately responsible for deciding whether to divert apparatus or not?”. There is a great deal of helpful advice in the Code, including a series of flow charts to assist in the making of the final decision. But, in the event of a disagreement between the authority (who is due to pay the major proportion of the costs of diversion or protection) and the undertaker (who owns the apparatus and is liable for continuity of service and its ongoing maintenance), the Code fails to establish whose view should prevail.
- 25.2 The Code is clear that “every effort should be made to leave the plant in situ and protected where necessary”. However, it also clearly recognises that there will be many circumstances in which diversion will be necessary. The factors to be taken into account can be both engineering related, such as a change in the depth of cover, and traffic related. It is therefore important for both parties to liaise closely in preparing all relevant information. In this way, there should be every chance of a joint agreement being reached. However, if this proves to be impossible then, in the opinion of the DWWG, the undertaker’s view should prevail because:
- he carries the risk for satisfactory operation of the apparatus;
  - there could be operational disbenefits to his network in terms of length and complexity;

- he will be paying a contribution to the costs of diversion or protection in most cases and will not want to incur such costs unless there is good reason; and
- he will be making due allowance for betterment and deferment of renewal, so will not be gaining any financial advantage from diversion.

## **26. FORMAL NOTICE OF AN AUTHORITY'S MAJOR WORKS**

- 26.1 Section 85 of the Act (S-144) refers to costs being disallowed if apparatus is placed in a street after an authority has given the undertaker the prescribed notice of its intention to carry out major works, provided that the period of notice is not more than 10 years in the case of major bridge works comprising bridge replacement and not more than 5 years in the case of any other major works. In the opinion of the DWWG, this period of notice commences on the date that the authority posts the notice on the Street Works Register and finishes on the date that the authority issues to the undertaker a C5 notice stating its intention to proceed with the works.
- 26.2 It is recognised that project dates can be delayed, and if an undertaker notifies the authority of its intention to install new apparatus within or outwith the 10 or 5 year notice period and the authority has since delayed the major works project, the authority should re-set the clock by issuing a further prescribed notice detailing the revised proposed commencement date and update the Street Works Register accordingly. None of this detracts from the requirement for all works promoters to share information at the earliest opportunity to enable major projects to be aligned with each other whenever possible.

## **27. TYPES OF UNDERTAKERS' APPARATUS (CODE APPENDIX A)**

- 27.1 The DWWG considers it appropriate to restate that this appendix in the Code is for guidance purposes only, offering indicative information and dimensions which are, by themselves, neither binding nor obligatory with every situation requiring engineering judgment and assessment. Every case should be treated on its merits taking into account factors such as location, traffic density, depth, pipe size, pipe material, service pressure, ancillaries and ground conditions, as well as any potential effect of construction traffic.
- 27.2 The following paragraphs provide updated text on **Sewers** which should be taken as replacing section A2.2 in the Code.

“Gravity sewers normally flow part-full but may surcharge up to ground level during storm conditions. Although generally laid with the fall of the ground, their depth can vary considerably as they must be laid at regular gradients that are adequate to maintain self cleansing velocities and so prevent silt deposition.

They require manholes at each change of direction or gradient and are generally much deeper than other services. Manholes are of brickwork or concrete construction and consist of a working chamber connected to the ground surface by an access shaft. Sewer junctions are made at manholes but most private sewers and drains generally take the shortest route and connect to the sewers between manholes.

It should be noted that some gravity sewers may be man entry and thus have few or no manholes at junctions and changes of gradient.

The sewerage industry in England and Wales does not own all the drainage apparatus in the street. In particular the whole of a drain or private sewer connection is currently the responsibility of the owner(s) of the property or properties that it serves, including any section that is under the highway. The government has indicated its intention to transfer these assets to water companies, although the timescale, scope and form of transfer have not yet been finalised.

However, a sewerage undertaker must ensure that private systems continue to work effectively when diverting a sewer that they connect to. Other drainage pipelines that are not the sewerage undertaker's responsibility include highway drainage systems, railway drainage and land drainage culverts.

Pumped sewers flow intermittently and under pressure, are similar to trunk water mains in that they have no connections, but have less ancillary apparatus.

Materials which have been or are used for gravity sewers are brickwork, clayware, asbestos cement, concrete, uPVC, GRP, HDPE, structural walled thermo plastics and pitch fibre, though pitch fibre pipe is no longer allowed for new sewers and structural walled thermo plastics have limitations. Some rehabilitated sewers may be lined with resin impregnated felts or fibre glass cured in place linings (CIPP), others have been slip lined with HDPE pipes or other proprietary systems. Drain connections are usually of clayware or uPVC. Pumped sewers may be of steel, cast iron, spun iron, ductile iron, asbestos cement or polyethylene.

As brick sewers rely structurally on full integrity of cross-section, any damage can result in extensive collapse and must be repaired at once.”

## **28. UNDERTAKERS' APPARATUS – FACTORS MATERIAL TO HIGHWAY WORKS (CODE APPENDIX B)**

28.1 The DWWG considers it appropriate to restate that this appendix in the Code is for guidance purposes only, offering indicative information and dimensions which are, by themselves, neither binding nor obligatory with every situation requiring engineering judgment and assessment. Every case should be treated on its merits taking into account factors such as location, traffic density, depth, pipe size, pipe material, service pressure, ancillaries and ground conditions as well as any potential effect of construction traffic.

28.2 The following advice is provided in respect of **Depth of Cover of Gravity Sewers** to supplement that given in section B2.2 (iv) of the Code.

“Wherever possible, any diversion of a sewer should be by gravity at adequate gradient to maintain self cleansing velocity to the satisfaction of the sewerage undertaker. Pumping stations should be used only as a last resort.”

N.B. - The future cost of operating, maintaining, repairing and replacing the pumping equipment should be taken into account in considering the available options and should be borne by the authority, e.g. by means of a commuted lump sum contribution.

28.3 The following advice is provided in respect of **Lateral Position of Trunk Mains** to supplement that given in section B2.3(i) of the Code.

For clarity, the DWWG considers that the first few words of section B2.3(i) should read “For the proposed depth of cover to be acceptable.....”.

- 28.4 The following advice is provided in respect of **Depth of Cover** and **Lateral Position of Distribution Mains and Service Pipes** to supplement that given in section B2.2(ii) and B2.3(ii) of the Code.

“The Fire Service will normally require any hydrants to be relocated, even where it is considered that a main need not be diverted, and the undertaker should consult them at an early stage to agree both lateral position and depth. Allowance for these additional response times may be necessary within the process.”

- 28.5 The following advice is provided in respect of **Lateral Position of Gravity and Pumped Sewers** to supplement that given in section B2.3(iii & iv) of the Code.

“Sewers not laid within public carriageway, footway or verge must be laid in conjunction with the necessary easement, e.g. a protected strip, to ensure future ease of access”

- 28.6 The following additional factor is relevant in respect of **Risk during Construction to Water Apparatus** to supplement that given in section B2.4 of the Code.

‘v. type of bedding to pipes.’

## 29. DEFERMENT OF RENEWAL (CODE APPENDIX E)

### The Bacon and Woodrow Formula

- 29.1 Deferment of renewal is recognition that undertakers derive a financial benefit when new apparatus, installed as diversionary works, replaces old apparatus made redundant by major works, or when a decision is made not to divert but to strengthen or refurbish in situ. The Code sets out (in Appendix E) the methodology that should be applied to calculate that benefit in order to offset it against the costs of diversionary works.
- 29.2 The methodology (the Bacon and Woodrow formula) relies on use of a “real” rate of interest, ie interest less inflation. In 1992, this rate was set at 6.0%, but the Code recognised that it might need to be reviewed in the future. In July 2007, HAUC(UK) agreed that the DWWG should undertake such a review.
- 29.3 The DWWG considered a number of different approaches to this, but agreed that the relevant rate of interest should be that promulgated in “The Green Book – Appraisal and Evaluation in Central Government”. This is a publication by HM Treasury which is updated periodically, most recently in January 2003. This sets the current “real” rate of interest at 3.5%, and the DWWG recommends that this rate should now be used until such time as it is revised in an update to The Green Book.
- 29.4 Table 2 of Appendix E of the Code is a ready reckoner which tabulates the factors to be used to calculate the financial benefit for different full and expired lives of apparatus using the 6.0% interest rate. The DWWG has agreed not to replace this table with an equivalent using the new 3.5% interest rate, but instead to provide an interactive facility on the HAUC(UK) website which will automatically calculate the appropriate cost deduction to be applied to total diversionary works costs. The link to this facility is: <http://www.hauc-uk.org.uk/category/11/pageid/80/>.

### Further Guidance

- 29.5 The following further items of guidance amend or expand upon Appendix E in the Code. References to the Code are given where appropriate.

- 29.6 An allowance for deferment of renewal is due only if apparatus is more than 7½ years old (ref E1(a)).
- 29.7 An allowance is due only where the individual lengths of original apparatus that are diverted exceed 100 metres. Aggregation of disconnected but adjacent lengths is not permissible. For optical fibre telecommunications cables, the lengths must be 500 metres or greater. For electricity cables the lengths have to be more than 500 metres for circuits of voltages of 33 kV and above, 250 metres for all auxiliary cables and circuits of voltages above 1000 volts but less than 33 kV, and 100 metres for 1000 volts or less (ref E1(b)).
- 29.8 Deferment of renewal should be calculated using the estimated cost of replacing the pre-diversion length of the existing apparatus, not the “total cost” of the works. It is appreciated, however, that it can be difficult to agree the estimated cost of replacement and it is therefore suggested that deferment is based on actual cost, excluding the cost of connections, etc, pro-rata to the length of the existing main (ref E1(e)).
- 29.9 Where apparatus is to be temporarily diverted, deferment should apply only to the cost of either the temporary or the permanent diversion, not both.
- 29.10 The full value of any recovered material (including scrap) should be deducted from the payment made by the relevant authority except where an undertaker can clearly demonstrate that it uses the full value of such material to offset diversionary works overheads (ref E1(f)).
- 29.11 The cost of alteration of private drains required as a result of diversion of sewers must be excluded from deferment calculations since such connections do not belong to the sewerage undertaker
- 29.12 Some water companies’ standard practice is to grout up or otherwise seal redundant pipes rather than remove them. Such grouting up is not required where pipelines are replaced in the normal course of events. Consequently, the cost of such abandonment should be excluded from the costs used to calculate the deferment allowance.

### **Life of Apparatus**

- 29.13 There remains significant debate about the issue of asset lives and expired life, particularly within the water industry. The debate has historically focused on water mains as there is widespread acceptance that sewers have such long lives that the value of deferment of renewal is negligible.
- 29.14 The water industry considers that the lives for water mains quoted in Appendix E3 of the Code have been shown to be much too low in terms of the reality of pipes in the ground. There are many small cast iron pipes in the ground which are fully serviceable after 100 years or more which water companies have no plans to replace and their regulator would not approve as part of their asset programme.
- 29.15 Therefore, the factor “L” in the Bacon & Woodrow formula for water mains and sewers as well as plastic ducting should be calculated by reference to the expected residual life of the apparatus. A residual life of 20 years should apply unless there are specific plans to replace sooner.
- 29.16 In addition, BT Openreach experience demonstrates that for cables, ducts (plastic), and indeed many of its underground structures, the life expectancy far

exceeds the 60 years agreed pre 1990 and wishes to raise the projected life expectancy of plastic ducts to 100 years.

### **30. BETTERMENT (CODE APPENDIX F)**

30.1 Where a diversion takes a longer route than the existing apparatus as a result of the authority's works, any betterment should be based on the additional cost of a length equal to the length of the diverted apparatus. Betterment will not include the costs of upsizing of the apparatus (e.g. to overcome transmission losses or pressure reduction) resulting from the extended diversionary route, but would include upsizing for any other purpose (e.g. to meet future demand).

### **31. GUIDANCE LETTERS AND FORMS**

31.1 The DWWG has reviewed the standard letters and forms promulgated in Advice Note 2008/02 and recommends the following changes:

- Inclusion of 7.5% alternative cost share for transport works on a separate line;
- Specific credit allowance where C4 costs are paid in arrears;
- Correction to the Net Allowable Cost Share formula;
- Inclusion of deduction for work not chargeable when apparatus is installed subsequent to a s85 (S-144) notice being issued; and
- Correction of the calculation of Advance Payments.

31.2 A complete set of letters and forms, including these amendments, is presented below. They are not mandatory, but the appropriate items specified in the Code for them are essential information. They are felt to be particularly helpful for the infrequent user of the Code.

## Authority Sample Letters & Forms

- C2 - Preliminary Enquiry
- C3 - Draft Schemes and Budget Estimates
- C4 - Detailed Scheme and Detailed Estimates
- C5 - Scheme Commencement Notification and Settle Specification
- C6 - Notification of Authority's Contractor and Main Order
- C7 - Pro forma for Agreed Variation/Record of Change

Dear Sir

**NEW ROADS AND STREET WORKS ACT 1991**  
**PRELIMINARY ENQUIRY**

**Appendix C2 of the Code of Practice**

‘Measures Necessary Where Apparatus Is Affected By Major Works (Diversionary Works)’

The Authority is considering a scheme involving major highway works \*/major bridge works \*/major transport works \* as detailed below:

Scheme Number:

Location of Works:

O.S. Grid Ref.:

Road No / Street Name:

    From:

    To:

Description of Works:

Expected Start Date:

Expected Completion Date:

A plan showing the proposals is enclosed.

In order that all reasonable precautions may be taken to avoid risk to health and safety through contact with any of your existing apparatus during execution of the proposed works, please describe your apparatus and indicate as accurately as possible its position and depth in the locality of the proposed works and return the plan to this office, or provide this information in some other format, or confirm that relevant information previously provided or available on the internet is up to date. In addition, you should highlight any special problems that could arise in connection with your apparatus as a result of the proposed works, and any limitations on the quality of any information provided. If you have no apparatus in the area of the proposed works, please send a nil return.

Under the Code of Practice, the requested information should be provided free of charge and normally within 10 working days. Please contact us as a matter of urgency if you are unable to provide this information within this time.

If you require any more information please do not hesitate to let me know. If telephoning please contact XXXXXXXX on XXX XXX XXX

Yours faithfully

\* delete as appropriate -

Please ensure that all correspondence clearly identifies the name and full contact details of the responsible officer

Dear Sir

**NEW ROADS AND STREET WORKS ACT 1991**  
**DRAFT SCHEMES AND BUDGET ESTIMATES**

**Appendix C3 of the Code of Practice**

‘Measures Necessary Where Apparatus Is Affected By Major Works (Diversionary Works)’

The Authority proposes to undertake major highway works \*/major bridge works \*/major transport works\* as detailed below:-

Scheme Number:

Location of Works:

O.S. Grid Ref.:

Road No / Street Name:

From:

To:

Description of Works:

Expected Start Date:

Expected Completion Date:

Please provide preliminary details of the effects on your apparatus including, on one copy of the enclosed plan, or an alternative plan of suitable scale and quality, your existing apparatus and the alterations proposed. Where you are not aware of the general position of the line and depth of your apparatus, you must take all necessary steps to determine this information (at your own expense). (See Appendix C section C1.4)

In addition, please identify any special requirements involved such as –

- a) items of equipment on long delivery and the need for advance ordering;
- b) interruption of supplies to consumers;
- c) disconnection of supplies to premises which are to be demolished;
- d) special wayleave agreements associated with the diversion of your apparatus;
- e) early access to sites for the construction of special structures such as sub-stations, pressure regulation stations, etc.;
- f) planning consents or special ministerial consents;
- g) any other high-risk critical items or issues.

Please also provide a C3 Budget Estimate based on current rates, including all direct costs and overheads likely to arise from the necessary measures in consequence of the proposed works. A non-mandatory proforma detailing the information required at this stage is attached to this letter for your completion.

Where apparatus is at substandard depth (i.e. within the bound layers of the road construction), we should jointly consider whether there is justification for you to make a greater contribution to

the cost of diversionary works. An increased contribution would not be expected where you have already accepted reduced depth as a result of previous highway improvement. (See Section 9.3.4 (a))

Detailed discussions between the authority and yourself and other undertakers, either separately or jointly, shall follow in order to consider any modifications to the scheme, which may assist in facilitating the programming of the works and/or reducing the cost of the diversionary works.

These discussions will also help us to decide whether a C4 stage of the process is required.

When replying, please provide an indication of the possibility of an allowance for 'Deferment of the Time for Renewal' based on the formula set out in Appendix E, and for 'Betterment' given in Appendix F of the Diversionary Works Code of Practice and 'Materials Recovered'.

Under the Code of Practice, the requested information should be provided free of charge and normally within 20 working days. Please contact us as a matter of urgency if you are unable to provide the information within this time.

Should the scheme proceed, formal orders and notice will be served in due course.

Yours faithfully,

\* delete as appropriate

Please ensure that all correspondence clearly identifies the name and full contact details of the responsible officer

NEW ROADS AND STREET WORKS ACT 1991

BUDGET ESTIMATE

Appendix C3 of the Code of Practice

'Measures Necessary Where Apparatus is Affected By Major Works (Diversionary Works)'

Authority Name and Address

Authority Ref No  
(to be quoted on all correspondence)

Undertaker Ref:  
(to be quoted on all correspondence)

Date of Estimate:

Undertaker:

Scheme:

Diversion Ref/Description:

Budget Estimate Summary: (Net of any discount(s))

Direct Costs (including Overheads @   %)	£	
Contract Costs (including Overheads @   %)	£	
Materials (including Overheads @   %)	£	
Budget Estimate Project Cost	£	Excluding VAT

Anticipated Duration:

Lead Times (refer to Code):

Possibility of: (Yes/No)

Deferment of Renewal

Betterment

Materials Recovered

Dear Sir

NEW ROADS AND STREET WORKS ACT 1991  
DETAILED SCHEME AND DETAILED ESTIMATES

Appendix C4 of the Code of Practice  
'Measures Necessary Where Apparatus Is Affected By Major Works (Diversionary Works)'

Further to our previous correspondence and joint discussions, the Authority is proposing a scheme involving major highway works \*/major bridge works \*/major transport works \* as detailed below:-

Scheme Number:

Location of Works:

O.S. Grid Ref.:

Road No / Street Name:

From:

To:

Description of Works:

Expected Start Date:

Expected Completion Date:

Two copies of the final scheme plans at a scale of 1:500 or larger are enclosed, together with outline details of our proposed programme as well as a copy of form F10 as sent to HSE.

In accordance with Appendix C4 of the Code of Practice, would you please provide the following:

- i. A description of any necessary measures, clearly stating the reason for diversion or protection and giving details of the existing apparatus affected, such as lengths and sizes of pipes/cables/ducts, depths of cover and ages. See section C1.4 on the possible need to confirm positions of apparatus.
- ii. A detailed specification of the works required, including as appropriate -
  - (a) details of all replacement apparatus, i.e. lengths, type, material, size and routes, drawing attention to those materials with long lead times on delivery
  - (b) details of all protection work
  - (c) advance or off-site works
  - (d) method of construction and sequence of operations where these have a significant effect on cost or programme
  - (e) arrangements for delivery of materials and storage requirements
  - (f) route and level requirements, trench dimensions, methods of excavation and assumed ground conditions
  - (g) reinstatement requirements, backfill specification, type of reinstatement (temporary, interim, permanent) and removal of surplus spoil
  - (h) details of temporary works
  - (i) any special requirements, e.g. provision of temporary accommodation for staff

- (j) details of the requirements for commissioning of apparatus, e.g. original apparatus having to remain commissioned until all services are transferred
- (k) method of dealing with apparatus made redundant by the scheme, e.g. recovered or abandoned in situ.

iii. A detailed estimate based on current rates with itemised direct costs also to include:

- (a) overheads (in accordance with the appropriate Recovery of Costs Regulations)
- (b) details of the likely allowance for deferment of renewal based on the formula set out in Appendix E and for betterment given in Appendix F
- (c) allowance for any materials recovered.

NOTE (if works are to be phased over a long period of time then, by mutual agreement, estimates for each phase may be appropriate)

A proforma detailing the information required at this stage is attached to this letter for your completion.

iv. Provisional programmes and timescales for works including as appropriate:

- (a) site works
- (b) off-site works
- (c) time for obtaining materials with a long lead-time on delivery
- (d) land purchase
- (e) wayleaves acquisition.

As per the Code of Practice, the requested information should normally be provided within 25 working days. Please contact us as a matter of urgency if you are unable to provide the information within this time.

EITHER

\*The Authority will accept the costs for the preparation of your C4 estimate.

OR

\*As a C3 estimate has not been requested for this scheme, this initial C4 estimate should be provided free of charge unless you advise that the effects on your apparatus cannot be considered to be minimal (see section C1.2).

It is anticipated that  $\underline{X}\%$ \* or  $\pounds X^*$  of the cost of these Major Works will be funded by the Authority from Highway Authority funds. This same percentage of the necessary diversionary works costs will therefore be subject to the Street Works (Sharing of Costs of Works) Regulations as provided by section 85 of NRSWA (s144 in Scotland).

If you require any more information, please do not hesitate to let me know. If telephoning please contact XXXXXXXXX on XXX XXX XXX

Yours faithfully,

\* Delete as appropriate

Please ensure that all correspondence clearly identifies the name and full contact details of the responsible officer



## NEW ROADS AND STREET WORKS ACT 1991 DETAILED ESTIMATE

Detailed Estimate Summary:

Direct Labour (including Overheads @    %)	£		
Contract Labour (including Overheads @    %)	£		
Plant (including Overheads @    %)	£		
Materials (including Overheads @    %)	£		
	Sub total	£	
Other Costs (including Overheads @    %) (please specify)	£		
	£		
	£		
	Sub total	£	
Estimated Project Costs:		£	
Less deductions for:			
Deferment of Renewal	£		
Betterment	£		
Materials Recovered	£		
Elements of work not chargeable as apparatus installed after Authority's notice of intent to carry out major works	£		
Total Deductions:		£	
Total Detailed Estimated Cost of Works (exclusive of measures undertaken by Authority)		£	
			(a)
Value of Work NOT allowable for cost sharing		£	
			(b)
Total Allowable Costs (a – b)		£	
			(c)
*7.5% of Total Allowable Costs (c)	£		(d)
*18 % of Total Allowable Costs (c)	£		(d)
*7.5 % of £..... for measures undertaken by the Authority	£		(e)
*18% of £.....for measures undertaken by the Authority	£		(e)
Total Allowable Cost Share (d + e)		£	
			(f)

Net Allowable Costs (c - f)	£	(g)
Net Detailed Estimate (excluding VAT) (a - f)	£	

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ADVANCE PAYMENTS

Value of Work NOT allowable for cost sharing (b) (note 5)	£	.....
75% of Net Allowable Costs (75% of (g)) (note 4)	£	.....
Total lump sum payment before diversionary works begin	£	.....
Or, for works taking over 3 months, instalments required each month during execution of the diversionary works	£	.....

\* delete as appropriate or insert relevant proportion of works cost if nature of works means that both %s apply

Notes:

1. The Estimate should be supplied with and relate to the Code of Practice Appendix C4 – Description of necessary measures, detailed specification, provisional programmes and timescales of the works.
2. Evidence to substantiate the Estimate should be retained by the Undertaker (see Appendix C1.1 of the Code of Practice).
3. Cost sharing percentages are in accordance with the Sharing of Costs of Works Regulations.
4. Cost sharing will only apply where the qualifying promoter chooses to pay 75% of the net allowable costs in advance of the works in whole or, if agreed, in stages.
5. Non-allowable costs (ie those not borne by an authority's highways budget) shall be paid in advance, either in whole or in stages depending on works duration and mutual agreement. This does not affect the right of an authority to choose to pay allowable costs in arrears, thereby foregoing any cost sharing arrangements.
6. Refer to the current Recovery of Costs Regulations for the definition of Overheads, etc.

Dear Sir

## NEW ROADS AND STREET WORKS ACT 1991

### NOTIFICATION OF SCHEME COMMENCEMENT

#### Appendix C5 of the Code of Practice

'Measures Necessary Where Apparatus Is Affected By Major Works (Diversionary Works)'

Further to our previous correspondence and joint discussions, the Authority gives you notice that it will be commencing major highway works\*/major bridge works\*/major transport works\* as detailed below:-

Scheme Number:

Location of Works:

O.S. Grid Ref.:

Road No / Street Name:

From:

To:

Description of Works:

Expected Start Date:

Expected Completion Date:

EITHER

\*An Official Works Order in accordance with the Code of Practice will be issued in due course.

OR

\*An Official Works Order Ref..... in accordance with the Code of Practice is attached to enable you to proceed with advance ordering of those materials which have long delivery periods.

OR

\*An Official Works Order in accordance with the Code of Practice is attached to enable you to proceed with advance ordering of those materials that have long delivery periods and to undertake those works specified in the Works Order in advance of the main works.

Please acknowledge receipt of this Notice and respond with a detailed specification, itemised estimate and programme, if not already submitted.

Yours faithfully,

\* delete as appropriate

Please ensure that all correspondence clearly identifies the name and full contact details of the responsible officer

Dear Sir

**NEW ROADS AND STREET WORKS ACT 1991**  
**NOTIFICATION OF AUTHORITY'S CONTRACTOR & MAIN ORDER**

**Appendix C6 of the Code of Practice**

‘Measures Necessary Where Apparatus Is Affected By Major Works (Diversionary Works)’

Scheme Number:

Order Reference No.

Location of Works:

O.S. Grid Ref.:

Road No / Street Name:

From:

To:

Description of Works:

Expected Start Date:

Expected Completion Date:

Please find enclosed our Official Works Order Ref.....

EITHER

The Authority wishes to take advantage of the provisions of NRSWA 1991 enabling the sharing of the cost of diversionary works. To enable the appropriate advance payment to be made in accordance with Appendix C9.1 of the Code of Practice, please submit a standard invoice to the following address:

OR

The Authority does not wish to take advantage of the provisions of NRSWA 1991 enabling the sharing of the cost of diversionary works. Therefore, payment will be made upon receipt of an invoice once the works are completed. Alternatively, if agreed in advance, stage payments will be made upon receipt of invoices following completion of agreed work stages. Invoices should be sent to the following address:

Enclosed with this letter are standard proforma detailing the information required should any variations or changes occur to the planned diversionary works, and for submission of your final account.

The contact details in respect of the above-mentioned scheme are as follows:-

Agent – (Name / Address / Tel Nos / Mobile / Email)

Agent's Representative – (Name / Address / Tel Nos / Mobile / Email)

Principal Contractor – (Name / Address / Tel Nos / Mobile / Email)

Contractor 1 – (Name / Address / Tel Nos / Mobile / Email)

Contractor 2 – (Name / Address / Tel Nos / Mobile / Email)

Please provide corresponding utility contact details at your earliest convenience.

Yours faithfully –

Please ensure that all correspondence clearly identifies the name and full contact details of the responsible officer

# NEW ROADS AND STREET WORKS ACT 1991

## OFFICIAL WORKS ORDER

Appendix C6 to the Code of Practice (CoP)

“Measures Necessary Where Apparatus Is Affected By Major Works (Diversionary Works)”

Scheme:

Order Ref:

Authority Ref. No. (To be quoted on all invoices and correspondence)

Estimate Reference & Date:

To:

Invoices to be sent to:

Diversion	Authority Ref	Undertaker Ref

Description of work to be carried out	Estimated Value

Acknowledgement of this order is / is not required\* -  
\*delete as appropriate

Net total – (ex VAT)

Ordered on behalf of the [Insert name of Authority]

Signature

Name and Address

Position

Date

Telephone Number

**AGREED VARIATION/RECORD OF CHANGE  
NEW ROADS AND STREET WORKS ACT 1991**

**Undertaker  
V.O.Req.No.**

Appendix C7 to the Code of Practice (CoP)

“ Measure Necessary Where Apparatus Is Affected By Major Works (Diversionary Works)”

Date:		Variation / Change No:	
Scheme:			
Authority Ref No. <small>(To be quoted on all correspondence)</small>			
<b>Official Works Order Reference</b>		<b>Diversion Reference &amp; Date</b>	
Authority Ref		Authority Ref	
Undertaker Ref		Undertaker Ref	
Undertaker		Contractor	

Reason for Issue	
	# Insert code as appropriate P = Authority Liability U = Undertaker Liability O = Other
Variation Code #	

Description of Varied Works	Estimated Value <sup>†</sup>									
	<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">Add</td> <td style="width: 10%;">£</td> <td style="width: 80%;"></td> </tr> <tr> <td>Omit</td> <td>£</td> <td style="border-bottom: 1px solid black;"></td> </tr> <tr> <td>Total</td> <td>£</td> <td></td> </tr> </table>	Add	£		Omit	£		Total	£	
Add	£									
Omit	£									
Total	£									

Acknowledgement of this variation is / is not\* required \* delete as appropriate

Signature Date Position		Authority Agent	
Signature Date Position		Undertaker	

<sup>†</sup> The Authority Agent should attempt to secure the estimated value of all Agreed Variations from the Undertaker at the time of agreement.

## Statutory Undertakers' Sample Letters and Forms\*

\* Note – forms are not duplicated in this section

- C3 - Draft Schemes and Budget Estimates
- C4 - Detailed Scheme and Detailed Estimates
- C5 - Scheme Commencement Notification and Settle Specification
- C6 - Notification of Authority's Contractor and Main Order
- C7 - Variation Order Request Form
- C9 - Final Invoice

Dear Sir

**NEW ROADS AND STREET WORKS ACT 1991**  
**DRAFT SCHEME AND BUDGET ESTIMATES**

**Appendix C3 of the Code of Practice**

‘Measures Necessary Where Apparatus Is Affected By Major Works (Diversionary Works)’

Scheme Number:

Location of Works:

O.S. Grid Ref.:

Road No / Street Name:

From:

To:

Description of Works:

Expected Start Date:

Expected Completion Date:

Thank you for your draft scheme plans dated \_\_\_\_\_.

It would appear from your proposals that alterations to our existing apparatus may be necessary. I am returning a copy of \*your drawing/our records marked up showing approximate positions of apparatus and our preliminary assessment of diversionary works necessary as a consequence of the scheme.

As requested a budget estimate of the possible cost of protecting/diverting our apparatus is attached. It includes all direct costs and overheads likely to arise. It is stressed that this is a budgetary figure and only intended as a guide, the actual amount could be significantly different. (See form 3)

In accordance with section C3 of the Code of Practice we wish to bring the following special requirements to your attention

1. \_\_\_\_\_
2. \_\_\_\_\_

(e.g. “None of the materials required has a lead time of more than three months and therefore advance ordering should not be required”, “The following material items have a long delivery time and will require advance ordering”, etc.)

We will be able to expand on these points during our detailed discussions.

Following these discussions no further action will be taken on this enquiry until instructed or we receive the appropriate notification of the Detailed Scheme from the promoting authority in accordance with Appendix C4 of the Code of Practice. The cost of providing a C4 Estimate is an allowable cost. If you wish to take advantage of the cost sharing regulatory provisions you are required to provide an initial payment of £X or order (if acceptable) for the scheme prior to or included with any further budget estimate or C4 request. If you are not the promoting authority but will be acting as his Agent and deal with notices etc., then confirmation of this will be required, in writing, from the promoting authority.

Please provide a copy of the form F10 as sent to the HSE if you will be proceeding to C4 stage.

Yours faithfully

\* delete as appropriate

Dear Sir

**NEW ROADS AND STREET WORKS ACT 1991**  
**DETAILED SCHEME AND DETAILED ESTIMATES**

**Appendix C4 of the Code of Practice**

‘Measures Necessary Where Apparatus Is Affected By Major Works (Diversionary Works)’

Scheme Number:

Location of Works:

O.S. Grid Ref.:

Road No / Street Name:

    From:

    To:

Description of Works:

Expected Start Date:

Expected Completion Date:

Thank you for your Detailed Scheme proposals dated \_\_\_\_\_ and copies of Drawing Nos. \_\_\_\_\_.

Attached to this letter is a detailed description of the necessary measures, detailed specification and cost estimate of the works required, and an allowable costs invoice for the production of the C4 estimate (if applicable) together with details of our proposed programme in accordance with Appendix C4 of the Code of Practice.

Before our work, or any work affecting our apparatus, can commence on site, we require your formal agreement to the attached specification of works and proposed programme. (NRSWA section 84(1)(b) (Scotland – s143(1)(b)))

If you wish to discuss your proposals further, or would like to arrange a meeting please do not hesitate in contacting me.

Yours faithfully

Dear Sir

**NEW ROADS AND STREET WORKS ACT 1991**  
**SCHEME COMMENCEMENT NOTIFICATION AND SETTLE SPECIFICATION**

**Appendix C5 of the Code of Practice**  
**'Measures Necessary Where Apparatus Is Affected By Major Works (Diversionary Works)'**

Scheme Number:

Advance Order Reference No:

Location of Works:

O.S. Grid Ref.:

Road No / Street Name:

    From:

    To:

Description of Works:

Expected Start Date:

Expected Completion Date:

I hereby acknowledge receipt of your notification of commencement and advance order for the above scheme.

(The undertaker must respond with a detailed specification, itemised estimate and programme if not already submitted. The authority and undertaker must at this stage, if they have not already done so, settle the specification of necessary measures and determine by whom they are to be taken.)

Yours faithfully

Dear Sir

**NEW ROADS AND STREET WORKS ACT 1991**  
**NOTIFICATION OF AUTHORITY'S CONTRACTOR AND MAIN ORDER**

**Appendix C6 of the Code of Practice**

‘Measures Necessary Where Apparatus Is Affected By Major Works (Diversiory Works)’

Scheme Number:

Main Order Reference No:

Location of Works:

O.S. Grid Ref.:

Road No / Street Name:

From:

To:

Description of Works:

Expected Start Date:

Expected Completion Date:

Thank you for the above order and the information about the appointment of your contractor.

The contact details for our representative will be:

\_\_\_\_\_ (Name / Address / Telephone / E-mail)

Yours faithfully

## NEW ROADS AND STREET WORKS ACT 1991

### VARIATION ORDER REQUEST FORM

### Appendix C7 of the Code of Practice

‘Measures Necessary Where Apparatus Is Affected By Major Works (Diversiory Works)’

Scheme Number:

Order Reference No:

Location of Works:

O.S. Grid Ref.:

Road No:

Description of Diversiory Works:

Name of Authority Project Manager / Responsible Officer Contact Details Tel Nos. - Address –		
Name of Utility Company Project Manager / Responsible Officer Contact Details Tel Nos. – Address –		
Description of Change:		
Reasons for Change:		
Design Implications:		
Details of Change to Estimated Cost :		
Milestones & Programming Implications:		
Signed:	Print Name:	Date:

Dear Sir

NEW ROADS AND STREET WORKS ACT 1991  
FINAL INVOICE

Appendix C9 of the Code of Practice  
'Measures Necessary Where Apparatus Is Affected By Major Works (Diversionary Works)'

Scheme Number:

Main Order Reference No:

Location of Works:

O.S. Grid Ref.:

Road No / Street Name:

From:

To:

Description of Works:

Actual Start Date:

Actual Completion Date:

In accordance with Appendix C9 of the Code of Practice the agreed work to protect or divert our apparatus is now complete and the final account is enclosed. (See form 9)

Yours faithfully

## NEW ROADS AND STREET WORKS ACT 1991 FINAL ACCOUNT

Appendix C9 to the Code of Practice (CoP)

“Measures Necessary Where Apparatus Is Affected By Major Works (Diversionary Works)”

Authority Name and Address:

Authority Ref No. \_\_\_\_\_

(to be quoted on all correspondence)

Undertaker Ref: \_\_\_\_\_

(to be quoted on all correspondence)

Date of Final Account: \_\_\_\_\_

Undertaker:

Scheme:

Diversion Ref / Description:

Actual Duration:

**Cost Summary:**

Preparation cost of C4 estimate	£	
Direct Labour (including Overheads @ ..... %)	£	
Contract Labour (including Overheads @ .....%)	£	
Plant Costs (including Overheads @ ..... %)	£	
Material Costs (including Overheads @ ..... %)	£	
		Sub Total £
Other Costs (including Overheads @ ..... %) (please specify)	£	
	£	
	£	
		Sub Total £
Actual Project Costs (carried forward):		£

## NEW ROADS AND STREET WORKS ACT 1991 FINAL ACCOUNT

	HA Ref No.		
Actual Project Costs (brought forward):		£	
Less deductions for:			
Deferment of Renewal	£		
Betterment	£		
Materials Recovered	£		
Elements of work not chargeable as apparatus installed after Authority's notice of intent to carry out major works	£		
<b>Total Deductions</b>		<b>£</b>	
<b>Total Net Cost of Project - (exclusive of measures undertaken by the Authority)</b>		<b>£</b>	<b>(a)</b>
In the case of works covered by the cost sharing principle			
*7.5% Total Actual Cost of Works (a)	£		(b)
*18% Total Actual Cost of Works (a)	£		(b)
*7.5% of £.....for measures undertaken by the Authority	£		(c)
*18% of £.....for measures undertaken by the Authority	£		(c)
<b>Allowable Cost Share (b + c)</b>	<b>£</b>		<b>(d)</b>
*7.5% credit allowance where C4 estimate paid for in arrears (See Note 5)	£		(e)
*18% credit allowance where C4 estimate paid for in arrears (See Note 5)	£		(e)
*7.5% of the proportion of total cost funded by third parties (As defined by the Regulations)	£		(f)
*18% of the proportion of total cost funded by third parties (As defined by the Regulations)	£		(f)
<b>Net Allowable Cost Share (d - e - f)</b>		<b>£</b>	<b>(g)</b>
<b>Total Allowable Cost (excluding VAT) (a - g)</b>		<b>£</b>	<b>(h)</b>
Total payments made prior to final account		£	(i)
Any other adjustments		£	(j)
Payment/Refund now due (excluding VAT) (h – i ± j)		£	
Value Added Tax at the current rate (%)		£	
Payment / Refund now due (including VAT)		£	

\* delete as appropriate or insert relevant proportion of item if nature of works means that both %s apply

Notes:

1. *Evidence to support the Final Account should be retained by the Undertaker.*
2. *The age and estimated full life of the apparatus should be made available to enable deferment of renewal calculations to be verified.*
3. *The details of the calculation of any betterment should be made available to enable verification.*
4. *Cost sharing percentages are in accordance with the Sharing of Costs of Works Regulations.*
5. *The cost of C4 estimates is not eligible for cost share if paid in arrears.*
6. *Refer to the current Recovery of Costs Regulations for the definition of Overheads, etc.*