

EXPLANATORY MEMORANDUM TO
THE STREET WORKS (QUALIFICATIONS OF SUPERVISORS AND
OPERATIVES) (ENGLAND) REGULATIONS 2009

2009 No. 2257

1. This explanatory memorandum has been prepared by the Department for Transport ("DfT") and is laid before Parliament by Command of Her Majesty.

This memorandum contains information for the Joint Committee on Statutory Instruments.

2. **Purpose of the instrument**

2.1 These Regulations describe the qualifications needed by supervisors and trained operatives to undertake street works and introduce the requirement that supervisors and trained operatives must be reassessed every five years to confirm that they are still competent before they can re-register and continue to carry out street works. Two new signing, lighting and guarding qualifications have been added to the previous list of qualification types. The Regulations allow for the recognition of foreign professional qualifications as required by European Directive 2005/36/EC of 7th September 2005.

3. **Matters of special interest to the Joint Committee on Statutory Instruments.**

3.1 None

4. **Legislative Context**

4.1 The Regulations set out the qualifications operatives and supervisors need to fulfil the requirement that each set of street works must have a qualified operative on-site for the phase of works taking place and a supervisor who can be contacted. The qualifications were first introduced by the Street Works (Qualifications of Supervisors and Operatives) Regulation 1992 (SI 1992/1687) ('the 1992 Regulations') in relation to England and Wales.

4.2 These Regulations restate, with changes, the 1992 Regulations in relation to England, as since devolution the relevant powers in the New Roads and Street Works Act 1991 ('the 1991 Act') are exercised in Wales by the Welsh Assembly Government. Those parts of the 1992 Regulations that were concerned with the prescribed qualifications for supervisors and trained operatives (now regulations 4 and 5) and the approved bodies conferring qualifications (now regulations 7) have been lifted into these Regulations, subject to the changes being introduced. These Regulations recognise prescribed qualifications gained in the devolved administrations and it is expected that the devolved administrations will lay similar Regulations to maintain consistency across the UK.

4.3 These Regulations make three significant changes to the 1992 Regulations. Firstly, the introduction of a system of compulsory reassessment - qualified operatives

and supervisors must complete a reassessment before they can apply for re-registration on the Street Works Qualification Register (SWQR). This requirement is designed to ensure that the competency of street works operatives and supervisors is monitored and maintained.

4.4 Secondly, the Regulations introduce two new registerable qualifications, comprised only of Unit 2 (operatives) or only Unit 10 (supervisors). This will allow workers who currently hold a certificate for the laying out and maintaining of signing, lighting and guarding or the monitoring of signing, lighting and guarding to register those certificates with the SWQR.

4.5 Thirdly, the Regulations allow for the recognition of foreign professional qualifications as required by European Directive 2005/36/EC of 7th September 2005. Allowing workers from member states of the European Union (and Iceland, Liechtenstein, Norway and Switzerland) with equivalent guarantees of skill and competence will be treated as qualified operatives and supervisors. Additionally prescribed qualifications can also be gained through the successful completion of an adaption period or completion of an aptitude test. The provision of services on temporary basis is also provided for.

4.6 The qualifications set out in the Schedules focus on safety (site layout, signing and guarding) and quality of workmanship (correct excavation techniques for instance to avoid buried apparatus or correct methods of reinstatement).

5. Territorial Extent and Application

5.1 This instrument applies to England.

6. European Convention on Human Rights

6.1 As the instrument is subject to negative resolution procedure and does not amend primary legislation, no statement is required.

7. Policy background

7.1 Under the 1992 Regulations operatives and superiors are required to register the details of the units of competence that make up the relevant qualification with the SWQR. This registration lasts for five years and a worker then pays a fee to re-register to maintain recognition as a qualified operative or supervisor. However there is no requirement to demonstrate that knowledge or skills have been maintained or updated. Under these new Regulations qualified operatives and supervisors must complete a reassessment before re-registration on the SWQR can take place.

7.2 There was a growing concern that a substantial number of street works were not being carried out to the standards set by the prescribed codes and specifications despite using qualified operatives and supervisors. This was noted from incident and accident investigation reports, inspection sampling and national quality audit analysis.

7.3 Since the introduction of the 1992 Regulations, all the awarding units, associated codes and specifications had been reviewed and updated. Under the

current provisions there is no way for the SWQR to establish that operatives or supervisors are fully competent or aware of the latest rules or best practice. This could reduce confidence in the SWQR and the abilities of qualified workers and may result in unsafe street works sites and/or poor work techniques, especially those relating to reinstatement.

7.4 The introduction of reassessment as a prerequisite for re-registration is intended to ensure trained operatives and supervisors will maintain their skills to the required standards, and be made aware of changes implemented since they were last assessed and current best practice.

7.5 Under Regulation 4(2) of the 1992 Regulations, workers can hold a Unit 2 qualification in signing lighting and guarding. This is not recorded on the SWQR and the qualified person only holds a paper certificate showing they have passed the Unit 2 unit of competence. Unlike all other the other prescribed qualifications which are displayed on the small durable and practical size SWQR card. A new registerable qualification, comprised only of Unit 2, has been created for those who will only be laying out and maintaining signing, lighting and guarding; an equivalent supervisory qualification is also created (Unit 10).

7.6 These new Regulations will allow workers from member states of the European Union (and Iceland, Liechtenstein, Norway and Switzerland) with equivalent guarantees of skill and competence will be treated as qualified operatives and supervisors. Before starting work in England they must register with the SWQR.

7.7 Scotland¹ and Northern Ireland² currently have similar Regulations to England and Wales with the same units of competency, qualifications, approved bodies and single register. It is understood that the devolved administrations will lay new Regulation to bring their qualifications in line with the 2009 Regulations.

8. Consultation outcome

8.1 The Regulations were developed in conjunction with the HAUC (UK) Training and Accreditation Working Group ('TAWG'). TAWG comprises representatives of utility companies (from the gas, water, electricity and telecommunications sectors), highway authorities, awarding bodies and the DfT.

8.2 A 12 week public consultation was launched by the DfT running from 20th February 2008 to 15th May 2008. The DfT informed some 1000 individuals, representing approximately 700 stakeholders, of the consultation launch by post and email. These stakeholders included - awarding bodies (CABWI Awarding Body, City and Guilds of London Institute and the Scottish Qualifications Authority), training and assessment centres, undertakers and their contractors, highway authorities, transport and road users groups and representatives of small business amongst others.

¹ The Road Works (Qualifications of Supervisors and Operatives) (Scotland) Regulations 1992 (SI 1992/1675) (S. 162)

² Street Works (Qualifications of Supervisors and Operatives) Regulations (Northern Ireland) 1998 (SI 1998/20) (NI)

8.3 In total 62 responses were received, though not all respondents answered every question. The key question in the consultation was: *Do you agree with the principle of introducing reassessment to help maintain standards for safety standards and reinstatement?* The vast majority (60 out of 61 of respondents) agreed with the principle of introducing reassessment. One respondent (a training provider) chose not to answer the question.

8.4 Several questions detailed the changes to Unit 2 and 10 qualifications. Only four respondents disagreed with this proposal, with three local authorities stating that workers who hold the Unit 2 or Unit 10 qualification should be reassessed prior to the introduction of the qualification. However after consideration, it was felt that a grace period was required to allow those already holding the qualification to register on the SWQR.

8.5 There was some disagreement over the time window given to workers in which they could re-register. Having considered the responses, the time period for re-registration was reduced to 6 months before, and no later than 6 months after, the expiration of a worker's existing registration. A copy of the consultation and the DfT response can be found at:

<http://www.dft.gov.uk/consultations/archive/2008/streetworksqualifications/>

9. Guidance

9.1 The DfT will be issuing a guidance leaflet that explains the regulations, how to qualify and the changes that have been made in the 2009 Regulations. The leaflet will be available on the DfT website and in a paper copy.

10. Impact

10.1 The impact on business is quantified in the annexed Impact Assessment. Undertakers and their contractors will have to pay for staff to undergo reassessment every five years. Some staff may need extra training if they do not pass reassessment first time. There will be some lost output for staff removed from operations for the duration of retraining and reassessment. These costs are balanced by having to spend less on remedial works and equipment strikes; a reduction in congestion (from fewer remedial works); less disruption of services (from fewer equipment strikes); and savings from a reduction in accidents associated with street works.

10.2 The impact on the public sector is unchanged.

10.3 An Impact Assessment is attached to this memorandum

11. Regulating small business

11.1 The legislation applies to small business.

11.2 The impact on small business should be limited as the introduction of reassessment would predominately affect utilities (i.e. water, gas, electricity and telecommunication companies) and their contractors.

12. Monitoring & review

12.1 It is intended that the policy will be reviewed in 2016, five years after the new qualifications are available and mandatory reassessment has been introduced. This will allow all workers who qualified before 1st April 2011 to have been reassessed.

13. Contact

13.1 Ellen Duffy at the Department for Transport, Traffic Management Division
Tel: 020 7944 8046 or e-mail: ellen.duffy@dft.gsi.gov.uk who can answer any queries regarding the instrument.

Summary: Intervention & Options

Department /Agency: Department for Transport	Title: Impact Assessment of the Street Works (Qualifications of Supervisors and Operatives) (England) Regulations 2009	
Stage: Final	Version: 1.0	Date: 24 July 2009
Related Publications:		

Available to view or download at:

<http://www.dft.gov.uk>

Contact for enquiries: Alistair Cormack

Telephone: 020 7944 8046

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

On a significant number of street works, signing, lighting and guarding is not being laid out correctly and reinstatements are substandard, despite being carried out by trained operatives and supervisors. This can cause work to correct this with an increase in disruption, as well as unsafe conditions for the public and workers.

Standards and Codes of Practice have been revised, yet there is no required reassessment to check that qualified workers are aware of changes. It has been suggested that these substandard works may be due to workers not being up to date with the latest information.

What are the policy objectives and the intended effects?

Policy Objective:

- to improve the safety & quality of street works.

Intended Effects:

- increase the quality of street works, reducing the need for remedial works, which will increase efficiency & reduce disruption

- reduce the level of accidents at street works to workers & the public, as well as reduce the amount of accidental damage to underground equipment

What policy options have been considered? Please justify any preferred option.

Option 1: Set a legislative requirement so that qualified workers must be reassessed every five years to confirm that they are still competent before they can re-register & continue to work at street works.

Option 2: Issue voluntary guidance for reassessment as a precondition of re-registration.

Option 1 is the Government's preferred option as it is the only one with strong enough incentives to improve safety standards and quality of work. It has been developed with, and agreed by the Highways Authorities and Utilities Committee (UK).

When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects? 2016 - this will allow all workers who were registered before 1 April 2011 to have been reassessed at least once.

Ministerial Sign-off For final proposal/implementation stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) the benefits justify the costs.

Signed by the responsible Minister: Sadiq Khan

Date: 18th August 2009

Summary: Analysis & Evidence

Policy Option: 1	Description: Set a legislative requirement that qualified workers must be reassessed every five years before they can re-register
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COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups' Undertakers & their contractors will have to pay for staff to undergo reassessment every 5 years. Some staff may need extra training if they do not pass reassessment first time. There will be some lost output for staff removed from operations for the duration of retraining and reassessment.
	One-off (Transition)	Yrs	
	£ 0		
	Average Annual Cost (excluding one-off)		
	£ 12.4m		
Total Cost (PV)			£ 92.5m
Other key non-monetised costs by 'main affected groups'			

BENEFITS	ANNUAL BENEFITS		Description and scale of key monetised benefits by 'main affected groups' Undertakers and authorities will benefit from having to spend less on remedial works & equipment strikes. Society will benefit from: reduction in congestion (from fewer remedial works); less disruption of services (from fewer equipment strikes); and savings from a reduction in accidents associated with street works.
	One-off	Yrs	
	£ 0		
	Average Annual Benefit (excluding one-off)		
	£ 25.5m		
Total Benefit (PV)			£ 191.1m
Other key non-monetised benefits by 'main affected groups'			

Key Assumptions/Sensitivities/Risks All assumptions are detailed in the evidence base. Net benefit has been calculated on the basis of a worst case and best case scenario, using different assumptions on reassessment pass rates & the level of improvements in reinstatement quality.

Price Base Year 2007	Time Period Years 10	Net Benefit Range (NPV) £ -12.8m — 229.5m	NET BENEFIT (NPV Best estimate) £ 98.5m
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What is the geographic coverage of the policy/option?				England	
On what date will the policy be implemented?				1 April 2010	
Which organisation(s) will enforce the policy?				see evidence base	
What is the total annual cost of enforcement for these organisations?				£ 0	
Does enforcement comply with Hampton principles?				Yes	
Will implementation go beyond minimum EU requirements?				No	
What is the value of the proposed offsetting measure per year?				£ 0	
What is the value of changes in greenhouse gas emissions?				£ minimal	
Will the proposal have a significant impact on competition?				No	
Annual cost (£-£) per organisation (excluding one-off)		Micro	Small	Medium	Large £57,500
Are any of these organisations exempt?		Yes/No	Yes/No	N/A	N/A

Impact on Admin Burdens Baseline (2005 Prices)				(Increase - Decrease)	
Increase of	£ 0	Decrease of	£ 0	Net Impact	£ 0

Kev:	Annual costs and benefits: Constant Prices	(Net) Present Value
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Evidence Base (for summary sheets)

Objectives

1. The main objective of the 2009 The Street Works (Qualifications of Supervisors and Operatives) (England) Regulations (or 'the 2009 Regulations') is to ensure that trained operatives and supervisors have maintained the required level of competency since their initial registration. This will be done by introducing reassessment as a prerequisite for re-registration of their qualifications.
2. These Regulations will replace those introduced in 1992 and also introduce two new qualifications (one for operatives and one for supervisors).

Background

3. The existing legislative framework for qualifications of operatives and supervisors is contained in section 67 of the New Roads and Street Works Act 1991 (NRSWA)³.
4. This Act requires an undertaker, executing street works except in certain cases, to have at least one qualified operative on site at all times during works, and a qualified supervisor appointed to the site who can oversee the works. The supervisor does not need to be on site at all times, but must be able to carry out the role adequately. A supervisor qualification does not replace, nor overrule, the operative qualification and one person cannot cover both roles at the same time.
5. Not all workers at a street works site need to be qualified, as long as the requirements of section 67 of NRSWA are met.

Assessment

6. The activities carried out in the street require certain skills in order to meet both safety and technical requirements. At present, the 1992 Regulations⁴ prescribed by NRSWA state that an operative or supervisor has a prescribed qualification for a particular type of work if an approved body has issued them with a certificate of competence showing assessment by an approved assessment centre in the relevant unit/s of competence. That certificate must also be registered in an approved register. This register, known as the Street Works Qualification Register (SWQR), is currently maintained by the Scottish Qualifications Authority.
7. The 1992 Regulations state that such a certificate shall cease to be registered five years after the registration date. Currently, it may be registered for successive five-year periods if an application for registration is received within a set period (3 months after expiry). Re-registration does not require operatives or supervisors to demonstrate knowledge of current requirements or best practice.

Qualifications

8. The 1992 Regulations describe a number of units of competency that must be completed by an operative or supervisor. The units of competency deal with specific aspects of street works and are detailed in Table 1.

³ NRSWA Section 67, Qualifications of supervisors and operatives - http://www.opsi.gov.uk/acts/acts1991/ukpga_19910022_en_6#pt3-pb5-11g67

⁴ *The Street Works (Qualifications of Supervisors and Operatives) Regulations 1992* SI 1992 No. 1687 - http://www.opsi.gov.uk/si/si1992/Uksi_19921687_en_1.htm

	Description	For:
Unit 1	Location and avoidance of underground apparatus.	Operatives and Supervisors
Unit 2	Signing, lighting and guarding.	Operatives
Unit 3	Excavation in the highway.	Operatives
Unit 4	Reinstatement and compaction of backfill materials.	Operatives
Unit 5	Reinstatement of sub-base and roadbase in non-bituminous materials.	Operatives
Unit 6	Reinstatement in cold-lay bituminous materials.	Operatives
Unit 7	Reinstatement in hot-lay bituminous materials.	Operatives
Unit 8	Reinstatement of concrete slabs.	Operatives
Unit 9	Reinstatement of modular surfaces and concrete footways.	Operatives
Unit 10	Monitoring signing, lighting and guarding.	Supervisors
Unit 11	Monitoring excavation in the highway.	Supervisors
Unit 12	Monitoring reinstatement and compaction of backfill materials.	Supervisors
Unit 13	Monitoring reinstatement of sub-base and roadbase in non-bituminous materials.	Supervisors
Unit 14	Monitoring reinstatement in bituminous materials.	Supervisors
Unit 15	Monitoring reinstatement of concrete slabs.	Supervisors
Unit 16	Monitoring reinstatement of modular surfaces and concrete footways.	Supervisors

9. At present, qualifications are made up of a combination of units (see table 2).

Qualification	Units required	For:
Excavation in the highway.	Units 1, 2 and 3.	Operatives
Excavation, backfilling and reinstatement of construction layers with a cold-lay bituminous surface.	Units 1, 2, 3, 4, 5 and 6.	Operatives
Reinstatement of construction layers in hot-lay and cold-lay bituminous materials.	Units 1, 2, 6 and 7.	Operatives
Reinstatement of concrete slabs.	Units 1, 2 and 8.	Operatives
Reinstatement of modular surfaces and concrete footways.	Units 1, 2 and 9.	Operatives
Monitoring excavation in the highway.	Units 1, 10 and 11.	Supervisors
Monitoring excavation, backfilling and reinstatement of construction layers with bituminous materials.	Units 1, 10, 11, 12, 13 and 14.	Supervisors
Monitoring reinstatement of construction layers in bituminous materials.	Units 1, 10 and 14.	Supervisors
Monitoring reinstatement of concrete slabs.	Units 1, 10 and 15.	Supervisors
Monitoring reinstatement of modular surfaces and concrete footways.	Units 1, 10 and 16.	Supervisors

10. Currently, a qualification for operatives or supervisors requires assessment passes in at least three units. A qualification only allows a worker to carry out the work that their qualification relates to. Most training and assessment centres offer training courses which combine a number of units listed in Table 1.

Rationale for Government intervention

Reassessment

11. There are currently no requirements to demonstrate knowledge or skills before re-registration. It is a purely administrative process and only requires correct payment to ensure continued registration. This has the benefit of being low cost and easy to administer.
12. The need to consider reviewing the qualification holder's competence came from a growing concern that a substantial number of street works were not being carried out to the standards set by the prescribed codes and specification requirements despite using qualified operatives and supervisors. This was noted from incident and accident investigation reports, inspection sampling and national quality audit analysis.
13. Since the introduction of the 1992 Regulations, all the HAUC⁵ awarding units, associated codes and specifications have been reviewed and updated. In addition, there is no way of checking that operatives and supervisors who may have gained their qualifications any time since 1992 are fully competent or aware of the latest rules or best practice.
14. It is possible that, without regular checking of a person's understanding of the rules and best practice, their occupational competence may degrade. This could mean that they are not using the most up to date or appropriate materials or techniques when carrying out works. This may explain the number of sub-standard works which have been noted.
15. The SWQR has no way of confirming if someone who wants to re-register has a good level of understanding of the latest rules or best practice. This could lead to reduced confidence in the SWQR and the abilities of qualified workers.
16. This may lead to teams carrying out street works becoming unsure of the correct method of working, unsafe street works sites and/or poor work techniques, especially those relating to reinstatement. Poor reinstatement can lead to uneven surfaces or sinking which affects all road users including pedestrians.
17. By introducing reassessment as a prerequisite for re-registration, the intention is that trained operatives and supervisors will maintain their skills to the required standards, and be made aware of changes implemented since they were last assessed and current best practice. Those who wish to register for a further five years will have to provide a certificate, showing reassessment by an approved centre, to the SWQR.

Qualifications

18. Under Regulation 4(2) of the 1992 Regulations, holders of Unit 2 have a qualification in signing lighting and guarding. This qualification is not recorded on the SWQR if a person only holds Unit 2. Unlike all other qualifications which are displayed on the small durable and practical size SWQR card⁶, Unit 2 qualifications are typically shown on an A4 paper certificate showing that the person has successfully passed assessment for the Unit 2 competence. The HAUC(UK) Training and Accreditation Working Group (TAWG) concluded that a paper certificate is not durable, especially when it needs to be carried and produced to authorised persons seeking confirmation that the site had been laid out and maintained by suitably qualified person.
19. The inadequacy of such an arrangement compared with all other HAUC qualifications (ie displayed on the SWQR card) confirmed a need to review the present arrangements. In addition, a trained operative who only carries out signing, lighting and guarding of works sites will have to complete unnecessary units of competence should they wish obtain a registered qualification thereby incurring unnecessary expense.

⁵ The Highway Authorities and Utilities Committee (HAUC UK) was established in 1986 by the constituent bodies of the local Highway Authorities and the Utilities to assist the Secretary of State in arriving at proposals for new street works legislation.

⁶ An SWQR card is obtained once a prescribed qualification has been obtained and the paperwork sent to the registrar where it is verified before issuance of the photo card with unique identification number.

20. TAWG has recommended that a new registerable qualification, comprised of Unit 2, be created for those who will only be laying out a site and then the maintaining signing, lighting and guarding.
21. Currently, there is no requirement for works to lay out signing, lighting and guarding to be supervised if those works only involve minimal excavation. Since 1992, people have to come to believe that a supervisor for such works is required. Therefore, TAWG recommended to that the practice was formalised, so that such works are supervised by a qualified supervisor. As a result a new registerable qualification, comprised of Unit 10 will be created for supervisors; this will mirror the Unit 2 qualification for operatives.

General

22. Street works result in direct and indirect costs to a number of different groups. The group most affected are road users, while local highway authorities are less affected. Road users are affected as street works reduce the amount of road that can be used for traffic (including those in cars, cyclists and pedestrians amongst others). This, in many cases, causes congestion at peak times of the day. As a result journey times often take longer and become less predictable.
23. However, this cost is borne by road users, not those who are creating the problem. Without regulation there is little incentive for promoters to reduce the disruption caused. The 2009 Regulations complement changes to other Regulations to reduce the disruption caused by utility led works. The changes in the Regulations will affect the some 200 utility companies and other undertakers that have the statutory right to carry out works in the highway.
24. Legislation covering training and accreditation of undertakers is now matter for the Westminster Parliament and the devolved administrations (the Scottish Executive, the Welsh Assembly Government and the Northern Ireland Executive). There is a desire to ensure that the systems in place in each of the four administrations are compatible with each other to reduce the administrative burden on undertakers, whose areas of operation may cross national boundaries.
25. The 2009 Regulations were drawn up with the support of the HAUC(UK) Training and Accreditation Working Group, which comprises representatives of utility companies (from the gas, water, electricity and telecommunications sectors), highway authorities, awarding bodies and DfT. The member organisations of the working group are listed at Annex A.

Consultation

26. A public consultation was launched by the DfT on 20 February 2008; the deadline for comments was 15 May 2008. The department informed some 1000 individuals, representing approximately 700 stakeholders of the consultation launch by email and post. These stakeholders included - awarding bodies (CABWI Awarding Body, City and Guilds of London Institute and the Scottish Qualifications Authority), training and assessment centres, undertakers and their contractors, highway authorities, transport and road users groups and representatives of small business amongst others.
27. In total 62 responses were received, though not all respondees answered every question.
28. The key question in the consultation was question one: *Do you agree with the principle of introducing reassessment to help maintain standards for safety standards and reinstatement?* The vast majority (60 out of 61 of respondents) agreed with the principle of introducing reassessment. One respondee (a training provider) chose not to answer the question.
29. There was some disagreement over the time window given to workers in which they could re-register. Having considered the responses, the time period for re-registration was reduced to 6 months before, and no later than 6 months after, the expiry of a worker's existing registration.

30. A question detailed the changes to Unit 2 and 10 qualifications. Only four respondents disagreed with this proposal, with three local authorities stating that workers who hold the Unit 2 or Unit 10 qualification should be reassessed prior to the introduction of the qualification. However after consideration, it was felt that a grace period was required to allow those already holding the qualification to register on the SWQR.
31. Over 60% of the respondents (37/58) were content with the assumptions presented in the consultation stage Impact Assessment. Two contractors, 10 local authorities, both local authorities representative groups, 6 utility companies and 1 of their representative groups were not content, with some raising multiple arguments. The most common arguments against the Impact Assessment were:
- A failure to estimate the impact/cost of poor quality reinstatements on the need for local authorities to maintain their road network (8 responses);
 - Cost to local authorities when their staff need to be reassessed (5 responses)
 - Criticism of the fact that most data were estimates, or extrapolations, rather than actual numbers (7 responses); and
 - Claims that the suggested benefits would not be realised unless supervisors were on site to monitor the work more closely (2 responses)
32. The Department has recognised the limitations of the data sets used in the consultation stage Impact Assessment, and thus asked for more comprehensive data. However, the quality and paucity of information provided meant that, with one exception, it is not possible to aggregate the data to create a meaningful national picture on which to base policy decisions.
33. As the majority of respondents were content with the data and no other data sets are available, the calculations used in the consultation stage impact assessment are used in the final stage impact assessment.
34. In a second attempt to gather more accurate data, the Department commissioned its consultants, the Halcrow Group, to collect additional data. Unfortunately, they were unable to collect any data - mainly because the required data is not held by local authorities. Additionally much of the data held by utility companies is regarded as commercially sensitive, and the utility companies are unwilling to provide it to the Department or our representatives
35. A copy to the consultation and the government response can be found at: <http://www.dft.gov.uk/consultations/archive/2008/streetworksqualifications/>

Options

36. TAWG identified two options for dealing with the 1992 Regulations:
- Set a legislative requirement for reassessment as a precondition of re-registration and include additional qualifications in the Schedules to the Regulations.
 - Issue guidance for reassessment as a precondition of re-registration with the inclusion of additional qualifications.
37. The two policy options are detailed below. The chosen option (mandatory reassessment before re-registration) is the Department's preferred option. The economic implications of both options will be discussed later.
38. If neither were undertaken, the problems outlined above would continue unabated, resulting in poor standards for reinstatement and safety. The two options considered are assessed in comparison to this baseline scenario.

Option 1: Set a legislative requirement for reassessment as a precondition of re-registration. Include additional qualifications in the Schedules to the Regulations.

39. Section 67(4)(b) of NRSWA provides that Regulations may include conditions on the circumstances in which a qualification may be awarded, thus providing a legislative basis by which reassessment may be required in new Regulations to replace those made in 1992. This is the Department's preferred option and the main differences between the 1992 and 2009 Regulations are:
- Reassessment would become a pre-requisite of re-registration.
 - Units 2 and 10 would become qualifications for operatives and supervisors respectively and recorded on the SWQR.
 - Updating Regulations to ensure compliance with European Directive 2005/36/EC covering the recognition of foreign professional qualifications⁷.

Reassessment

40. The Department proposes that registration for further periods of five years cannot be applied for until the appropriate reassessment has taken place. This was suggested as a result of debate and TAWG took the following into consideration:
- There is little evidence of voluntary HAUC update training taking place for operatives or supervisors after completing their initial HAUC units of competence assessment and registration;
 - A whole raft of new codes, specifications, materials, roads categories and procedures have been put in place since 1992, with more to come; and
 - The number of quality issues, and indicators coming from analysis of quality audits, inspections and core sampling results that needed to be addressed.
41. Operatives and supervisors will be able to re-register for a period of 5 years, 6 months before (and no later than 6 months after) the expiry of the previous registration on the basis of reassessment. This will become a mandatory requirement 12 months after the regulations come into force. Up to this point, the current method of re-registration is to be continued. This will allow for the changes to be planned for by the undertakers, the awarding bodies, assessment centres and the SWQR.
42. Undertakers, their agents and contractors will have to ensure that they have scheduled and budgeted for both operatives and supervisors to be given sufficient training to gain the appropriate reassessment certification for re-registration of their HAUC qualifications.
43. The setting of such a requirement in regulations would allow all those registered, or who have employees registered, to be clear about the requirements of re-registration and the need for qualified operatives and supervisors to maintain their knowledge levels for their own benefit and that of other workers, their organisations and all road users.
44. The three awarding bodies held a national reassessment trial between 2003 and 2004 to evaluate the approach for developing reassessment; this trial showed that a multiple choice reassessment test should be sufficient to measure an individual's knowledge level. It also revealed that some of those taking the test would like to have a refresher course (ie a period of retraining) prior to taking the test.
45. HAUC(UK) has agreed that reassessment should take the form of a multiple choice knowledge test. This will last approximately 20 minutes and the questions are designed to test the level of understanding about the requirements of the Specification for the Reinstatement of the Highway and about safe working practices at street works. This will help to ensure that operatives and supervisors have maintained their understanding of the Regulations and Codes of Practice and are aware of current best practice.

⁷ see <http://www.europeopen.org.uk> for further details of this Directive.

46. Individual reassessment will need to be undertaken at a registered assessment centre, ie an establishment approved by an approved body (City and Guilds of London Institute, CABWI and the SQA) for the purposes of reassessing units of competence.

Qualifications

47. In order to deal with the fact that the Unit 2 qualification is not registered on the SWQR, and that there is no equivalent Unit 10 qualification for supervisors, it is proposed that individuals who pass either unit become operatives or supervisors (depending on the unit taken). This qualification would be registered on the SWQR. As such, it would be displayed on the SWQR card, thus resolving the issues around the use of a paper certificate to show qualification in Unit 2.
48. The units of competence for reassessment will not differ from those listed in the 1992 Regulations.
49. The qualifications and the units of competency needed to obtain them will differ from those listed in Schedules 2 and 4 of the 1992 Regulations. These qualifications are set out in the 2009 Regulations are outlined in table 2.

Table 2: Qualifications for Operatives and Supervisors (2009 Regulations)		
Qualification	Units required	For:
*Signing, lighting and guarding.	Unit 2	Operatives
Excavation in the highway.	Units 1, 2 and 3.	Operatives
Excavation, backfilling and reinstatement of construction layers with a cold-lay bituminous surface.	Units 1, 2, 3, 4, 5 and 6.	Operatives
Reinstatement of construction layers in hot-lay and cold-lay bituminous materials.	Units 1, 2, 6 and 7.	Operatives
Reinstatement of concrete slabs.	Units 1, 2 and 8.	Operatives
Reinstatement of modular surfaces and concrete footways.	Units 1, 2 and 9.	Operatives
*Monitoring signing, lighting and guarding.	Unit 10	Supervisors
Monitoring excavation in the highway.	Units 1, 10 and 11.	Supervisors
Monitoring excavation, backfilling and reinstatement of construction layers with bituminous materials.	Units 1, 10, 11, 12, 13 and 14.	Supervisors
Monitoring reinstatement of construction layers in bituminous materials.	Units 1, 10 and 14.	Supervisors
Monitoring reinstatement of concrete slabs.	Units 1, 10 and 15.	Supervisors
Monitoring reinstatement of modular surfaces and concrete footways.	Units 1, 10 and 16.	Supervisors
* new qualifications		

Transitional Arrangements

50. 12 months after the Regulations come in to force on 1 April 2011 reassessment will become a prerequisite for re-registration. Until then, reassessment will be optional as the current method of re-registration will be continued. This delay will allow undertakers and their contractors to plan for the changes and for reassessment and retraining material to be developed by the assessment centres and checked by the awarding bodies.
51. Holders of the Unit 2 qualification in signing, lighting and guarding will be able to continue to act as qualified operatives without having to register that qualification with the SWQR until 1 April 2011 the same is true for the equivalent Unit 10 holders.

Other considerations

52. Both Scotland and England intend to issue guidance leaflets after each set of Regulations is made. These leaflets will help to inform undertakers and their contractors about the changes. Scotland is in the process of making equivalent regulations with similar provisions. As stated in paragraph 25 there is a desire to ensure that a common framework for the training and accreditation of operatives and supervisors at street works exists across the United Kingdom.

Option 2: Issue guidance for reassessment as a precondition of re-registration and the additional qualifications and make minor revisions to regulations.

53. The 1992 Regulations for street works qualifications would be replaced by a regulation which did not include reassessment but would include the following provisions:
- Units 2 and 10 would become qualifications for operatives and supervisors respectively and recorded on the SWQR.
 - Compliance with European Directive 2005/36/EC covering the recognition of foreign professional qualifications.

Reassessment

54. By keeping the current registration policy, operatives and supervisors could register their qualification for further five-year periods without the need to have their competence in relevant units of that qualification reassessed.
55. If option 2 were followed, the Government would issue voluntary guidance to operatives, supervisors, their employee companies and all other interested parties advising that they undertake reassessment prior to registering their qualifications for further five-year periods.
56. The guidance would highlight the potential for positive impact on safety and technical standards at street works sites from having operatives and supervisors complete reassessment to ensure they are aware of the latest requirements, associated legal and guidance documentation.
57. However, a two-tier approach between those who follow the guidance and those that do not may be created. This may have implications on the individuals who have the qualifications and wish to move between employers, ie their current employer does not encourage reassessment but the prospective employer requires it.
58. Also, there is a possibility that over time the SWQR will become devalued if it is unable to confirm that a registered person has the necessary level of current knowledge. For example, a supervisor who qualified in 1992 when the regulations came into force may not be aware of the changes in standards since that time.
59. There is a risk that if operatives, supervisors and their employer companies are only advised to complete regular reassessment, no one will follow the guidance, as they cannot justify the cost in terms of time and money. Thus there would be no improvement over the current situation and the potential for health and safety breaches and work that does not meet the required standards is more likely if operatives and supervisors are not reassessed at regular intervals.
60. As a result, there would be no reduction, and possibly an increase, in the amount of disruption, caused by street works, which is experienced by all road users.

Costs and Benefits (option 1)

Sectors and groups affected

61. The introduction of the 2009 Regulations will mainly impact on the statutory undertakers (mainly the gas, electric, telecommunications and water utility companies) and contractors who may work on their behalf. It may also impact on those carrying out street works under NRSWA section 50 licences.
62. There will be no direct impact on other businesses, voluntary organisations and charities or people in different social groups. The introduction of reassessment to minimise degradation of competence of qualified operatives and supervisors for street works will have indirect impacts on all individuals and organisations that use the road network.

Benefits

Annual Costs of Delays Caused By Remedial Street Works

63. If the street works are not carried out to the required standards then they may be classed as defective. This then requires a further set of works called 'remedial works' (ie repair of any defective work). Remedial works cause further disruption to all road users; the cost to society of the increased disruption can also be estimated as well as direct costs to undertakers and highway authorities.
64. Two studies have been carried out to try to assess the level of disruption caused by works in the street. The consultancy firm, Halcrow produced a report in July 2004 for the Department estimating the annual costs of disruption caused by utility works in England in the year 2002/03 to be £4.3 billion (2002 values).

65. The National Joint Utilities Group (NJUG) commissioned Professor Phil Goodwin to review Halcrow's findings. This study adopted a different approach and provided a £1 billion estimate of the cost of congestion caused by street works. Although this is a large variation, it does confirm that the cost of this congestion has a significant impact on the operation of the road network and therefore society. As the road network is used more and more intensively, the impact of street works associated congestion may become higher.
66. The Department considers the Halcrow calculation to be more robust because it draws on a larger disaggregated database. It is based upon the estimated annual number of street works of 1.2 million. This figure was extrapolated from a sample of local authorities' notices and validated by the statutory undertakers. As such, this Impact Assessment bases its assessment of benefits on the Halcrow study.
67. Halcrow provided detailed estimates of the disruption caused by individual works, which can vary according to the duration of the work, the traffic flow on the specific road on which they are carried out, whether the roads are single or dual carriageway, the size of the works and whether works are carried out in rural or urban areas.
68. The Halcrow study modelled street works as constrictions which reduce the capacity of the carriageway, reducing traffic speeds and causing delays. A variety of street works, typical of the range experienced by highway authorities, were assessed. This information was contained in actual notices provided by 25 sample authorities. The impact of street works was derived from:
- The dimension of the works, as approximated by the length of the works.
 - The type of road, as approximated by the reinstatement category of the road.
69. The modelling techniques (QUADRO⁸, SATURN⁹ and micro-simulation models such as VISSIM™) used take into account the availability of diversionary routes to road users, which tend to be more restricted in the case of rural networks than congested urban networks. Further work was done to relate the area of reinstatement from the notices to the actual area occupied, as it was found that this affected the extent of the disruption.
70. Data from the traffic models were used to construct tables of daily delay cost rates for rural and urban roads (see table 4). The table contains delay cost rates for street works of different dimensions, and streets with different reinstatement categories. This helped to simplify the process of estimating the daily cost of delay for any works.
71. Information such as journey purpose, vehicle occupancy or vehicle type is usually used to calculate the value of time. This information was not available from the notices provided, so the value of time adopted by Halcrow for this report was the 'average vehicle' cost. Using the recommended government values for economic appraisals, this cost is £11.81/hr at 2002 values [Source: Values of Time and Operating Costs, DfT TAG Unit 3.5.6, April 2004¹⁰].

⁸ Queues And Delays at Roadworks

⁹ Simulation and Assignment of Traffic to Urban Road Networks

¹⁰ <http://www.webtag.org.uk/archive/jun04/pdf/jun04-356.pdf>

Table 4: Daily Cost of Street Works by Reinstatement Category and Length					
Rural Roads					
Reinstatement Category*	AADT**	10m	50m	100m	200m
0	<320,000	£2,500	£3,000	£3,300	£4,000
1	16,000	£7,850	£9,050	£10,250	£11,000
2	12,000	£1,610	£2,100	£2,600	£3,530
3	8,000	£780	£970	£1,200	£1,625
4	4,000	£335	£415	£515	£700
Urban Roads					
Reinstatement Category*	AADT**	10m	50m	100m	200m
0	40,000	£25,000	£25,000	£25,000	£25,000
1	24,000	£9,000	£12,000	£15,000	£17,000
2	16,000	£3,450	£5,150	£7,000	£8,800
3	10,000	£385	£535	£710	£1,025
4	6,000	£200	£280	£375	£550

* As defined in *Specification for the Reinstatement of Openings in Highways - Second Edition (2002)*. Reinstatement Category 0 roads are assumed to be dual carriageway roads, Reinstatement Category 1, 2, 3 and 4 roads are assumed to be single carriageways. Reinstatement Category is used as a proxy for how busy a road is.

** Annual Average Daily Traffic

72. Delay costs of street works vary according to a number of factors. For example, a set of works that is 50 metres long in an urban road with a daily traffic flow of 40,000 vehicles might cause £25,000 of disruptions a day. In contrast, a 10-metre long set of works on a rural road with a daily traffic flow of 4,000 vehicles may by comparison only cause £335 of disruption a day.

73. Application of the costs in table 4 from the 25 sample authorities to all 150 local authorities shows that the estimate of annual delay at street works in England for the financial year 2002/3 is £4.36 billion (2002 prices). Table 5 provides this information by sector.

Table 5: Delay Costs (£m) for All English Highway Authorities by Sector for Financial Year 2002/3 (2002 prices)				
Electricity	Gas	Telecoms	Water	All Sectors
1,241	1,202	535	1382	4,360

74. Uncertainties over the value of £4.36bn include the following:

- There is a lack of accurate definition of the area occupied by, and of the location of, the works in the carriageway
- The omission of minor works without excavation, some of which entail occupation of the carriageway.
- The uncertain relationship between traffic flow and reinstatement category.
- Where there is an absence of reliable gazetteer information (as is the case for 85% of all works), the lowest reinstatement category (4) has been assumed.
- The estimated level of disruption does not apply to pedestrians, cyclists, public transport users or other road users.

75. Using the GDP deflator tools available on the HM Treasury website¹¹ we can see that the annual cost of delays caused by street works is £4.70bn, in 2005 prices, or £4.96bn in 2007 prices
76. A report prepared by the Transport Research Laboratory (TRL) for the County Surveyors' Society in 2005¹² identified that approximately 8% of all reinstatements (and thus street works involving excavation) failed visual inspection. These data were collected by surveying 52 local authorities in England, Wales and Northern Ireland. For the purposes of this Impact Assessment, the Department has assumed that this picture is representative of England and that 8% of all reinstatements arising from street works fail and will need remedial work.
77. There are approximately 1.2m street works each year. Not all of these works involve excavation. While there are no exact figures for the number of excavatory street works, Halcrow have estimated approximately 15% of street works are non excavatory (information based over a 6 month period, within a sample of 25 local authorities). The Department has chosen to assume that this picture is representative of England as a whole. It is assumed that there are a total 1m excavatory street works, and therefore reinstatements each year.
78. This means that there are 82,310 remedial works in England each year.
79. The estimated cost of annual delay at street works in England is £4.96 billion (2007 prices). This figure is based on all street works (1.2m works per year) and not just remedial works. If this cost is then factored by the number of remedial works (82,310 works per year) that make up the total number of street works, it can be estimated that the annual delay at remedial works in England costs £340.5m.
80. It cannot be assumed that reassessment of operatives and supervisors will eliminate the need for remedial works. Following discussions with TAWG, the Department has estimated that there will be a 5% reduction in the number of remedial works. Assuming this reduction is the same in each reinstatement category, this will reduce disruption to society by approximately £17.0 million each year.
81. If the number of remedial works is reduced by a different amount, the annual benefit will be different. Table 6 sets out, in broad terms, the potential direct financial benefits to road users (including businesses, private drivers and public transport users) from reducing the number of remedial works.

Percentage Reduction	potential benefit (2007 prices)
3%	£10.2 million
5%	£17.0 million
7%	£23.8 million

82. If the 2009 Regulations achieve the suggested 5% reduction in remedial works, over ten years following implementation (2011-20), the total benefit will be £170.3m. Assuming a discount rate of 0.035, the total benefit (over 10 years) will be £127.7m in Present Value.
83. These figures may underestimate the true figure; the 2005 TRL report pointed out that if detailed physical measurements (eg coring) were taken the number of failed reinstatements would be higher. It was not possible to obtain accurate data based on detailed physical measurements as these are not recorded in England.

Annual Cost of Remedial Works to Undertakers

¹¹ http://www.hm-treasury.gov.uk/economic_data_and_tools/gdp_deflators/data_gdp_index.cfm

¹² *Compliance Testing of Street Works Reinstatements* 2005 (ref: ENG 01/05) - a version of this document is available at http://www.ukroadsliaisongroup.org/pdfs/060202_compliance_testing_of_reinstatements.pdf

84. In addition to the cost to society of remedial works, there are the direct costs to the undertakers. All reinstatements are subject to a guarantee period; if reinstatements fail within this period, the undertaker will be liable for the costs of the remedial works. Should the undertaker fail to carry out the remedial works, the local highway authority may carry out the works and recover the costs.
85. Information on costs incurred (eg labour and material) when performing remedial works were not available, therefore the Department modelled them. The 2005 TRL report stated that the combined surface area of reinstatement works in the carriageway and footway each year amounts to approximately 4.7 million m².
86. The Department has assumed that is 8% of reinstatements inspections, 8% of the total area reinstated will need be remedied. Thus an estimated 376,000 m² of carriageway and footway are reinstated as a result of the 82,310 remedial works each year.
87. The cost of reinstatement, and thus remedial works, depends on which of the five Reinstatement Categories (RC) the street has been classified into. RC 0 streets carry the highest levels of traffic, while RC 4 streets carry the least. As a result, the specification for the different RCs will vary in costs.
88. The Halcrow study on the impact of street works on congestion did estimate the proportion of works in each type of reinstatement category road (using the number of notices as a proxy). Assuming that reinstatements fail with the same frequency in each of the five RCs, and using data supplied by Halcrow on the costs of reinstating a square metre of highway, the total annual cost of remedial works to undertakers is estimated to be £25.6m. Table 7 gives a breakdown of costs by RC.

Reinstatement Category	% of Notices	Size of Remedial Works (m²)	Cost of Reinstating 1 m²	Cost of Remedial Works
0	0.70%	2,632	£100	£263,000
1	6.00%	22,560	£100	£2,256,000
2	12.80%	48,128	£80	£3,850,000
3	13.70%	51,512	£80	£4,121,000
4	66.90%	251,544	£60	£15,093,000
Total				£25,583,000

89. If the suggested 5% reduction in the number of remedial works are realised, the annual saving to undertakers will be £1.28m each year. Over the ten years following implementation (2011-20), the total benefit will be £12.8m. Assuming a discount rate of 0.035, the total benefit (over 10 years) will be £9.6m in Present Value.
90. These values are likely to be an underestimate as:
- There is a lack of accurate definition of the area occupied by the works in the carriageway; and
 - Where there is an absence of reliable gazetteer information (as is the case for 85% of all works), the lowest reinstatement category (4) has been assumed.
91. As with the benefit to road users from reducing remedial work, the savings made by undertakers through the reduction in the number of remedial works depend on the actual reduction achieved.

Annual Cost of Remedial Works to Highway Authorities

92. Should reinstatements fail inspection outside the guarantee period, the highway authority is responsible for the remedial works. Highway authorities in England spend £700 million annually on routine road maintenance on category B, C and unclassified roads. The

proportion of this which is spent on remedial works is not known. It must be noted that road category does not directly relate to reinstatement category.

93. We intend to use this consultation to identify the extent of this problem.
94. Any improvement in standards resulting from the 2009 Regulations should reduce the number of reinstatements failing after the guarantee period, thus resulting in cost savings for the highway authorities.

Annual Cost of Accidents at Street Works

95. The statistics on accidents at street works sites are difficult to obtain due to the nature of such sites and the way in which accidents or incidents are reported.
96. Employers are required to report any injuries that occur at work. However, accidents at street works have, historically, been under reported. Incidents are recorded only against broad, imprecise categories, so whilst statistics for injuries to 'roadworkers' are available, this category includes workers carrying out new road construction, major renewal, street works and cyclical maintenance. Workers are often recorded as general construction workers as opposed to roadworkers. Thus, it is not possible to determine the exact number of workers injured while carrying out works in the highway on behalf of undertakers.
97. In addition, accidents at street works are not frequently recorded as 'accidents at work' and are often passed to the Police as a Road Traffic Accident. Contributing factors, such as 'inadequate training' or 'inadequate signing', may not be recoded
98. The Health and Safety Executive (HSE) hold some data on the number of accidents at roadworks: Between 2001-02 to 2004-05 there was an average of 5 fatalities per year where work being undertaken was road building or repair. There were a further 156 'Major' and 617 'Over 3 Day' injuries on average.
99. Of these 39% (2) of fatalities, 15% (23) of Major and 4% (25) of Over 3 Day were caused by workers being struck by vehicles. As there is no evidence of how many of these accidents take place at street works as opposed to general works in the highway (ie those carried out by the highway authorities themselves), it is assumed that half of these occur at/during street works.
100. These incidents have a cost to society and organisations. While the cost of injuries is not available, The Department does have data on the cost of fatalities, serious accidents and slight accidents on the road¹³. We have chosen to assume that serious accidents are equivalent to 'Major' injuries and that slight accidents equate to 'Over 3 Day' injuries. Thus the total cost of accidents at street works each year is estimated to be approximately £0.5m in the starting year (2011). Table 8 sets out how this figure was achieved

Table 8: Annual Cost of Accidents at Street Works in Starting Year (2007 prices)

Accident / Injury Severity	Number of Accidents / Injuries at Works in the Highway	Number Caused by Vehicles	Number Caused by Vehicles at Street Works	Cost per Accident / Injury	Total Cost of Accidents / injuries at Street Works Caused by Vehicles
Fatality	5	2	1	£1,964,204	£1,964,204
Serious / Major	156	23	12	£227,726	£2,732,713
Slight / Over 3 days	617	25	12	£23,374	£280,492
				total	£4,977,410

¹³ <http://www.dft.gov.uk/pgr/roadsafety/ea/pdfeconnote105> (table 3)

101. The cost per accident / injury includes lost output, medical and ambulance costs, the human costs, costs incurred by the police, insurance and administration costs, and damage to property.
102. Introduction of reassessment will increase awareness of safety standards at street works sites and reassessment of Units 2 and 10 regarding signing, lighting and guarding will have the most significant impact on safety.
103. Increased awareness of standards will result in fewer fatalities and injuries to workers resulting from vehicle strikes, as these standards are regularly updated to ensure maximum visibility and safety of sites.
104. Reassessment cannot guarantee that all standards will be followed 100% of the time, nor will it prevent all injuries (even if standards are followed). TAWG considers that it may be possible to reduce the number of accidents / injuries at street works caused by vehicles by 10%; the Department uses this figure to illustrate the potential benefit of the 2009 Regulations. A 10% reduction, across all accident / injury types would realise a benefit in the region of £498,000 in the starting year (2011).
105. Assuming that the 2009 Regulations achieve the suggested 10% reduction in accidents at street works, the total benefit will be £5.4m over the ten years following implementation (2011-20). Assuming a discount rate of 0.035, the total benefit (over 10 years) will be £4.1m in Present Value. These benefits will be shared by the undertakers and society as a whole.
106. The figures quoted only refer to accidents to workers who are involved in a vehicular accident while carrying out street works. They do not include the cost of other accidents to workers or other road users, including pedestrians at street works. As such, they should be regarded as an underestimate.

Annual Cost of inspections failing due to signing and guarding

107. Inspections of street works sites can, and do, check if safety standards are being adhered to. If signing, lighting and/or guarding failures are identified, the inspection is said to have failed. The undertaker is then required to put right any failure. If they fail to do so, the local highway authority can fix the problem and charge the undertaker for the cost of doing so. Additionally, the local highway authority may choose to prosecute the undertaker for their failings.
108. Data obtained from a sample of 4 local highway authorities (1 inner London Borough, 2 shire counties and 1 unitary authority) suggests that an average of 6.9% of inspections fail due to signing, lighting and guarding. Figures range from 2.6% to 16.9% and as not all works are inspected, nor do all inspections take place while works are ongoing, it is possible that a larger number of street works have poor signing lighting and guarding, putting workers and road users at risk.
109. Undoubtedly there will be costs associated with putting right signing lighting and guarding inadequacies, ranging from staff costs to court actions and associated fines. At this stage we have not been able to identify what the overall costs of these failings are. We intend to obtain this information in this consultation.
110. We envisage that introducing reassessment will increase awareness of safety standards at street works sites and reassessment of Units 2 and 10 regarding signing, lighting and guarding will have the most significant impact on safety. Improved standards should reduce the number of failed inspections, leading to cost savings.

Annual Cost of Equipment Strikes

111. When works carried out by one organisation damages underground apparatus owned by another, the effects may range from a loss of service or supply to injury or death to personnel and the public. Equipment strikes can be split into two main categories:
 - Damage to other utilities' underground assets

■ Damage to local authority underground assets (drainage and lighting networks)

112. Damage may also occur to others with underground assets, for example homeowners with basements or gas and oil wholesalers.
113. A study for UKWIR¹⁴ in 2005¹⁵ did collate and summarise existing data for the UK as a whole. While not exhaustive, it did model the costs for England. The 2005 UKWIR study reported that the cost of equipment strikes to BT equipment was approximately £17.5m per year and that the water industry experienced damage to its network costing £15.5m per year and had to pay £4.5m for damage that it had caused to other utilities' apparatus. No data was available on the costs of equipment strikes to the gas and electricity sectors.
114. The UKWIR study estimated that local authorities in the UK experience damage costing £10m a year to their buried lighting infrastructure, and £54m a year to their drainage networks as a result of equipment strikes. This was calculated by extrapolating data from Kirklees Metropolitan Borough Council.
115. Finally the UKWIR study went on to estimate the cost of equipment strikes to the UK as a whole, using the Netherlands as a comparator as there is more comprehensive data available on the extent of damage to the buried infrastructure there. Total damage due to utility excavations in the Netherlands was estimated to be about £49 million per year (2005 prices). The UK's combined gas, electricity, water and sewer network is about 3 times larger than that of the Netherlands. As there is a lack of information on some of the buried infrastructure in the UK. Also, there are some differences in working practices and compensation requirements.
116. The UKWIR study assumed that the situation is broadly comparable in the two countries and that costs increased in proportion to the size of the network and estimated that the cost of equipment strikes in the UK was about £150 million per year (2005 prices).
117. The Department has used this information and assumed that as the UK's buried infrastructure is concentrated by population, it is predicted that England, with 83.8% of the UK population, will experience most of the equipment strikes. This will cost society and undertakers a total of £125.7m (2005 prices) or £132.7m (2007 prices) each year.
118. Not all of these strikes will be due to street works, some may be due to road works. The Department has assumed that 50% of all equipment strikes are due to street works.
119. Poor training is only one factor in equipment strikes. Poor and often incompatible records are a major contributing factor. While reassessment will not eliminate equipment strikes, it should increase understanding of how to avoid underground apparatus when carrying out works in the highway. Reassessment of Unit 1 regarding locating and avoiding underground apparatus will have the most significant impact on this.
120. Increased awareness of the current standards and methods will result in fewer equipment strikes leading to less damage to the apparatus and fewer fatalities and injuries to workers. TAWG considers that the introduction of reassessment will reduce the number of equipment strikes arising from street works by approximately 10%. The Department uses this figure to illustrate the potential benefit of the 2009 Regulations; the suggested 10% reduction would realise annual savings of £6.6m.
121. Over the ten years following implementation (2011-20), the total benefit will be £66.3m. The total benefit (over 10 years) will be £49.8m in Present Value, assuming a discount rate of 0.035. These benefits will be shared by the undertakers, highway authorities and others with buried infrastructure

¹⁴ UK Water Industry Research

¹⁵ The Real Costs of Street Works to the Utility Industry and Society. UKWIR Report 05/WM/12/8 - section 4.1

Costs

Cost of reassessment

122. The cost of introducing a regulatory requirement for reassessment will affect undertakers and their contractors.
123. At present, there is a cost associated with re-registering operative and supervisor qualifications every 5 years of £16 if this registration is submitted within 3 months of the expiry date of the card and £20 if after this 3-month period.
124. Using figures obtained from the Street Works Qualification Register (SWQR), who administer registration of street works qualifications, there are forecast to be 17,151 candidates due for re-registration each year for the five years from 1 August 2006. Re-registering qualified operatives and supervisors each year costs the industry approximately £308,714, assuming that half re-register within 3 months of expiry and the other half after expiry. This will not change as a result of the 2009 Regulations.
125. It is likely that the assessment centres will offer a refresher course for those who feel the need for one or fail a reassessment test. A number of individuals who participated in the awarding bodies' national reassessment trial felt the need a refresher course. In order to model the costs, the Department has used the costs of training and assessment as a proxy. Training centres offer packages which cover a number of units. These training packages last for 5 days and cost between £550 and £824 which includes cost of training material and assessment fees.
126. From this, it is calculated that the training and assessment of a single unit costs on average £117 (excluding an additional £8 for the awarding body unit fee) and takes 6.9 hours. Based on information from the awarding body's national test, the Department assumes that a reassessment test takes a total of 35 minutes or 0.58 hours (covering the test and any briefing before and after the test). Thus, it is estimated that a reassessment test for a single unit will cost £9.87.
127. It is unreasonable to assume that all operatives and supervisors will pass reassessment first time. Those that do not pass first time will need a refresher course. It is assumed that a refresher course will cost the same as a training course (£125 per unit) and include a reassessment test.
128. Therefore, the cost will vary depending on the number of candidates that pass without the need for a refresher course. Table 9 shows the total cost of reassessment given a first time pass rate of 50%, 65% and 90%. It is assumed that any candidate that needs a refresher course will go on to pass reassessment.
129. There will be a cost to industry in terms of lost output as the time spent taking the test and refresher courses, if needed, is time that could have been spent working. The standard cost model¹⁶ assumes that salary can be used a proxy for output. We have chosen to assume that average hourly salary of a trained operative/supervisor is equivalent to that of a road construction operative (£11.09/hour in 2004 prices)¹⁷. Using the estimated growth in 'Value of Time' shown in the Transport Analysis Guidance¹⁸ and the GDP deflator tools available from HM Treasury, the average hourly salary of a trained operative/supervisor is calculated to be £12.87/hour in 2007 and £14.04/hour in the opening year (2007 prices).
130. The total cost of lost output will depend on the number of candidates who pass the reassessment test first time. Using the time estimates outlined in paragraph 122, it is estimated that a reassessment test will result in £8.20 worth of lost output and a refresher course would result in £96.88 worth of lost output in the starting year (2011).

¹⁶ <http://bre.berr.gov.uk/regulation/reform/simplifying/scm.asp>.

¹⁷ http://bre.berr.gov.uk/regulation/documents/scm/scm_annexes.pdf

¹⁸ http://www.webtag.org.uk/webdocuments/3_Expert/5_Economy_Objective/3.5.6.htm

131. The additional annual cost to industry of reassessment varies between £5.6m and £15.7m in the starting year (2007 prices) depending on the number of candidates who pass the reassessment test first time. Discussions with TAWG have lead the Department to estimate that a 65% first time pass rate, resulting in annual costs of £11.9m, is reasonable. This equates to an annual cost of approximately £59,560 to each utility and/or their contractors.

% of candidates passing reassessment	50%	65%	90%
number of candidates	17,151	17,151	17,151
units being reassessed	118,043	118,043	118,043
cost of reassessment	£1,164,619	£1,164,619	£1,164,619
actual number of units passed	59,021	76,728	106,239
awarding bodies fees for passed units (£8 per unit)	£472,171	£613,823	£849,908
number of refresher courses needed	59,021	41,315	11,804
refresher course cost (£117)	£6,905,504	£4,833,853	£1,381,101
awarding bodies fees for passed units following refresher course (£8 per unit)	£472,171	£330,520	£94,434
cost of 'lost output' for reassessment and refresher course	£6,684,758	£4,969,372	£2,110,394
total cost for reassessment (and retraining if needed)	£15,699,223	£11,912,186	£5,600,456
total reassessment cost per utility	£78,496	£59,560	£28,002

132. As the need for reassessment will be ongoing, in the ten years following implementation (2011-20), the total cost will be £123.7m, assuming a first time pass rate of 65%. Assuming a discount rate of 0.035, the total cost (over 10 years) will be £92.6m in Present Value.

133. This possibly overestimates the cost of reassessment; under the 2009 Regulations, unit 2 (and 10) will be a qualification by itself and thus a number of supervisors and operatives will only need to reassess/retrain in this single unit. In addition, refresher courses may well be shorter than the training course; they should only be providing updates rather than teaching the basics. Good organisations should already ensure that staff are continuously trained and conversant with the latest regulations and standards, thus staff may not need a refresher course.

134. The assessment centres will experience costs as a result of introducing and administering the new courses and reassessments. As these centres operate as profit making entities they will be able to recover their costs with additional revenue. The estimates for the cost of the reassessment test and refresher courses shown are based on data obtained from the assessment centres and thus include their profit margins.

Impact on Admin Burdens Baseline

135. As the 2009 Regulations replace the existing 1992 Regulations, the Department does not believe that there will be any increase in Admin Burdens. Undertakers and their contractors already pay for the cost of paying for training, assessment and registration. The 2009 Regulations will change the amount to be paid but not the cost of making these payments.

136. There will be administrative costs on

- The SWQR who will be responsible for maintaining the records of peoples' original assessments and reassessments
- The awarding bodies who will be responsible for ensuring that the retraining and reassessments are of suitable quality
- The training and assessment centres that will be providing the retraining and reassessment

137. In each case the Department thinks that the impact will be minimal as all of these organisations should already have appropriate systems in place to deal with this:

- The SWQR already updates peoples' records and handles certificates of competence
- The awarding bodies already have to ensure that new courses and assessment methods are suitable
- The training and assessment centres are already be able to create new courses as required.

138. Undertakers already have a statutory duty to ensure that their workers (or their contractor's workers) are suitably qualified and should have systems in place to do so. The 2009 Regulations do not change this statutory duty.

Costs to Central and Local Government

139. These regulations will not impose any costs on either Central Government or Local Government.

Balance of costs and benefits

140. On balance, the Government believes that the changes will be beneficial in that the introduction of mandatory reassessment will result in savings to undertakers and local authorities through reducing the number of

- Remedial works have to be carried out
- Inspections failing due to safety inadequacies
- Equipment strikes
- Number of fatalities and accidents at work

141. There will be a benefit to the wider community by reducing congestion associated with remedial works.

142. An annual investment of £11.9m in the starting year in training and reassessment will provide an expected minimum benefit of £25.4m. Table 10 provides a summary of all costs and benefits arising from the revised Regulations.

Benefits	Congestion	£17,025,790
	Remedial Works	£1,279,152
	Safety	£497,741
	Equipment Strikes	£6,632,864
Total Benefit		£25,425,547
Costs		£11,912,186

143. The net benefit of the new Regulations, over the ten years following implementation, will be £98.5m (ie Total Benefit of £191.1m less the Total cost of £92.5m (Present Value)). The net benefit will vary depending on the actual benefits achieved by, and costs resulting from, the introduction of the 2009 Regulations. Table 11 shows the net benefit using the Department's best estimates (developed after discussions with TAWG), under a 'Worst Case' scenario and under a 'Best Case' scenario.

144. The Worst Case scenario assumes that the regulations will achieve a 3% reduction in the number of remedial works, a 5% reduction in the number of equipment strikes, a 5% improvement in safety and a first time pass rate of 50%.

145. The Best Case scenario assumes that the regulations will achieve a 7% reduction in the number of remedial works, a 15% reduction in the number of equipment strikes, a 15% improvement in safety and a first time pass rate of 90%.

Table 11: Net Benefit in the Ten Years Following Introduction of Reassessment as a Precondition for Re-registration (Present Value)						
Benefits:	Worst Case		Best Estimate		Best Case	
Reduction in Congestion	3%	£76,627,307	5%	£127,712,178	7%	£178,797,050
Remedial Works	3%	£5,757,029	5%	£9,595,049	7%	£13,433,069
Improvement in Safety	5%	£2,027,423	10%	£4,054,846	15%	£6,082,270
Equipment Strikes	5%	£24,876,894	10%	£49,753,787	15%	£74,630,681
Costs: first time pass rate	50%	-£122,075,795	65%	-£92,561,736	90%	-£43,371,638
Net Benefit	-£12,787,141		£98,554,126		£229,571,432	

Benefits and Costs (options 2)

146. There are no direct costs or benefits associated with option 2 (voluntary reassessment), nor would there be an impact on the admin baseline. Some organisations would continue to ensure that their staff are well trained, but there would be no incentive for other organisations to do so.

147. As a result, the existing situation would continue meaning that remedial works would continue to cost the wider community £340.5m a year in congestion and undertakers (and others) would experience costs of at least £96.5m a year due to the need to carry out remedial works, accidents and equipment strikes.

148. These costs may rise over time as skill standards may degrade as time passes since an operatives or supervisors' original qualification.

149. Voluntary guidance may also cause problems in terms of employment, both for employers and their employees:

- Organisations which do not invest in their workers training, may 'poach' better trained workers from organisations who have chosen to invest. This would financially disadvantage the organisations who are willing to train their staff; and
- Workers may find it difficult to move between employers if their current employer does not encourage reassessment and their future employer requires it.

Enforcement, sanctions and monitoring

150. There are no changes in the existing enforcement powers. Currently, undertakers must make sure that there is an operative on site while works are on going and that, where necessary, these works are supervised. If these conditions are not met, they will be liable to

the enforcement in NRSWA section 67(3) ie summary conviction to fine not exceeding level 5 on the standard scale (currently £5000).

151. Therefore, if an undertaker does not ensure its supervisors and trained operatives have registered (or reregistered), but uses them as such, the undertaker is not meeting its duties and may be subject to a fine.

152. The introduction of reassessment as a prerequisite of re-registration will therefore be enforced by the same section of NRSWA.

Compensatory simplification (offsetting)

153. The 2009 Regulations will replace the existing 1992 Regulations.

Policy review:

154. It is intended that policy will be reviewed in 2016, five years after the new qualifications are available and mandatory reassessment has been introduced. This will allow all workers who qualified before 1 April 2011 to have been reassessed.

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

Type of testing undertaken	<i>Results in Evidence Base?</i>	<i>Results annexed?</i>
Competition Assessment	No	Yes
Small Firms Impact Test	No	Yes
Legal Aid	No	Yes
Sustainable Development	No	Yes
Carbon Assessment	No	Yes
Other Environment	No	Yes
Health Impact Assessment	No	Yes
Race Equality	No	Yes
Disability Equality	No	Yes
Gender Equality	No	Yes
Human Rights	No	Yes
Rural Proofing	No	Yes

Annexes

ANNEX A - Members of the HAUC(UK) Training and Accreditation Working Group

Accenture
Ashington Associates (on behalf of the Water industry)
CABWI Awarding Body
Ceredigion County Council
City & Guilds
City of London Corporation
Department for Transport
DRDNI
EDF Energy
Energy and Utility Skills
Luton Borough Council
National Grid
NSWHG
Virgin Media
RAUC Scotland
SQA
SQA/SWQR
Surrey County Council
Thus Plc
Tiscali
Walsall MBC
York City Council

Annex B - Specific Impact Tests

Competition Assessment

1. A competition filter test on the likely effect of the regulations was completed.
2. The regulations would apply equally to all the utility companies managing of the infrastructure of services ie electricity, gas, telecommunications and water companies.
3. Water and electricity companies (such as Thames Water and Eastern Electricity respectively) operate on a regional basis, rather than in direct competition to each other. In the water sector, companies operate local and regional monopolies. In the electricity sector, the distribution businesses operate on a regional basis, rather than in direct competition with each other. The gas sector has regional distribution networks that operate as regional monopolies, similar to the electricity companies. Given that, we do not believe that the regulations would have a significant effect on competition in any of the three sectors.
4. The telecommunications sector has been deregulated since the privatisation of British Telecom (BT) in 1984 and different companies are in direct competition with each other in relevant areas such as residential and business access. Ofcom has found that BT has Significant Market Power in these areas, with around 80% of the UK market.
5. We do not believe that there would be implications for competition in establishing reassessment of qualifications, as all qualified operatives and supervisors, and therefore the organisations that require them, will be required to complete reassessment at the prescribed intervals. Some businesses may incur greater costs in setting up new systems to manage the process of ensuring operatives and supervisors are reassessed. However, it is unlikely that such costs will be sufficient to have implications for competition.

Small Firms Impact Test

6. It is thought that the impact on small business should be limited as the introduction of reassessment would predominately affect utilities (i.e. water, gas, electricity and telecommunication companies) and their contractors.

Legal Aid Impact Test

7. The 2009 Regulations will not introduce new criminal sanctions or civil penalties.

Sustainable Development

8. The Department feels that the 2009 Regulations comply with Sustainable Development principles.

Carbon Assessment

9. The impact of the 2009 Regulations on greenhouse gas emissions will be very indirect and thus hard to model.
10. Vehicular Carbon Dioxide, and other greenhouse gas, emissions are linked to the speed of travel and congestion affects this. However, the level of congestion caused by street works varies according to local factors, such as existing levels of road traffic, street design, type of vehicle, engine efficiency, time of journey and speed of travel. Thus while reducing the number of remedial works will reduce congestion and have an affect greenhouse gas emissions, it is hard

produce a robust and defensible estimate of exactly how much carbon will be saved.

Other Environment

11. The introduction of reassessment is intended to maintain standards of street works. Maintaining these standards will mean that there are less remedial works due to defects, which will therefore reduce disruption. It is not possible to quantify the exact environmental impact at present, but it is anticipated that by reducing congestion there will be an associated improvement in the levels of air quality, as vehicle emissions, caused by stationary vehicles, will be reduced. There will also be a reduction in the overall level of noise pollution.

Health

12. The 2009 Regulations will not have a direct impact on health. By improving air quality, through the reduction in congestion, there may be indirect health benefits.

Race Equality

13. There will be no impact on Race Equality.

Disability Equality

14. Under the Disability Discrimination Act 2005, public authorities may not discriminate against disabled people when carrying out their functions. Section 65 of NRSWA requires undertakers to take the needs of disabled people into account.
15. By creating qualifications for operatives and supervisors in signing, lighting and guarding and introducing reassessment, The Department intends that workers at street works keep the up to date with the latest requirements. This will improve the environment for all those affected by street works, including those with disabilities, particularly in regards to the signing, lighting and guarding of street works sites covered by these regulations.

Gender Equality

16. There will be no impact on Gender Equality.

Human Rights

17. There will be no impact on Human Rights.

Rural Proofing

18. The 2009 Regulations should not impact on rural communities unfairly. While the positive effects will predominately be felt in urban areas, all parts of England will benefit from a reduction in the number of remedial street works.