TRANSPORT SCOTLAND
CÒMHDHAIL ALBA

transport.gov.scot

Consultation on the use of Narrow Trenching in Scotland's Roads

Consultation Analysis 2019

Contents

Executive summary

1. This report analyses and summarises responses that were received through a Scottish Government public consultation on the use of narrow trenching in Scotland's Roads.

2. The consultation, which was published on the Scottish Government's Citizen Space web portal and Transport Scotland's web site, ran for an eight week period between October 2018 and December 2018. The Roads Authority and Utility Committee (Scotland) and the office of the Scottish Road Works Commissioner were contacted prior to launch to make them aware of the upcoming consultation.

3. Nine questions were asked as part of the consultation. These were:

    - should there be a minimum width for narrow trenching, and if so what should that dimension be?

    - are the existing intervention limits in the current code are sufficient for narrow trenching?

    - what should the minimum depth of cover for narrow trenching be; should there be a specified material for all/some layers and; should the current industry guidance on depth be incorporated into the code?

    - if the code should specify Should the code specify where narrow trenching can be used

    - if trenchless methods should be the preferred method of installation over narrow trenching

    - if narrow trenching should be prohibited where certain ground conditions are encountered

    - if the current safety code is adequate for the activity of narrow trenching

    - encounters with rock – should there should be a requirement to cut a slot where rock is encountered; should the code require that apparatus be laid at a shallow depth when rock is encountered, subject to an appropriate notification method and; should there be a requirement to stop works and hold a joint site visit as soon as rock is encountered?

    - if there are any other issues or comments that The Scottish Government should be aware of

Profile of respondents

4. A total of 49 responses were received to the consultation from individuals and organisations. Respondents were categorised as follows:

- Roads Authorities (26 responses)
- Statutory Undertaker (8 responses)
- Contractor/Non Statutory Undertaker (7 responses)
- Private individual (4 responses)
- Operating Company (2 responses)
- Industry Group (2 responses)

5. The nine questions asked for a 'Yes/No' response and asked respondents to provide details to explain their views. Responses to the questions are summarised below. The responses to these questions will inform the content of an amendment to the Specification for the *Reinstatement of Openings in Roads 2015* ("SROR")

Analysis and reporting

Question 1
Should there be a minimum width for narrow trenching, and if so what should that dimension be?

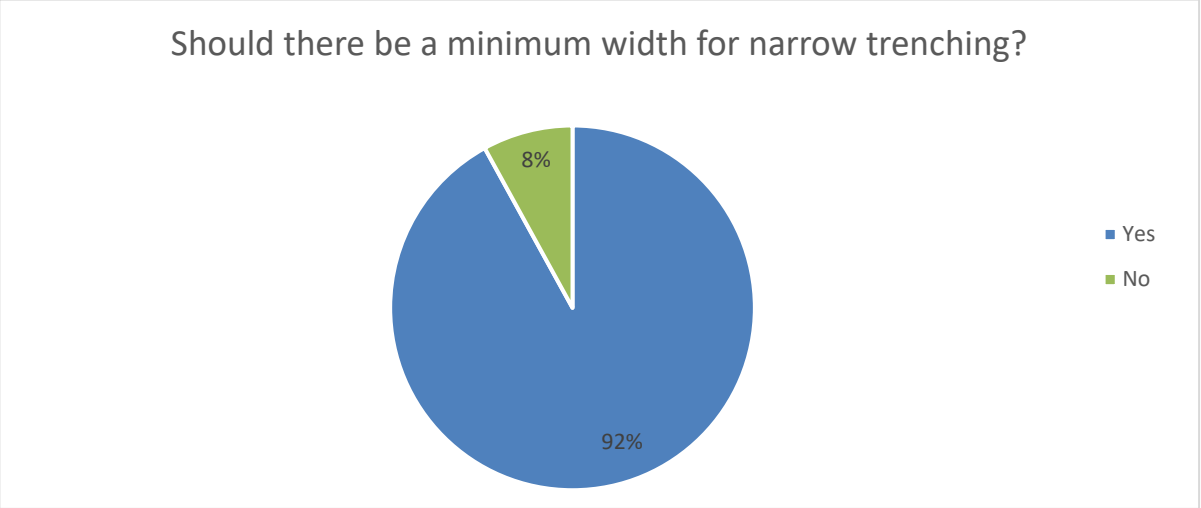

Chart 1: Question 1 – Responses by Answer

6. The majority of responses to the consultation were supportive of this proposal, with 92% of respondents agreeing that there should be a minimum width for narrow trenches.

Type of respondent	Yes	No	Total
Individual	3	1	4
Statutory Undertaker	7	1	8
Contractor	5	2	7
Operating Company	2	0	2
Roads Authority	26	0	26
Industry Group	2	0	2
Total	**45**	**4**	**49**

Table 1: Question 1-Should there be a minimum width for narrow trenching, and if so what should that dimension be?– Responses by Type of Respondent

7. Every respondent gave an answer to this initial question. Having a minimum width was supported by all Operating Companies, Roads Authorities and Industry Groups. The single largest group to object to a minimum width were Contractors with two responses though the majority were in favour.

8. The most common reason given to support a minimum width was concern around compaction, with associated concerns over the kinds of materials used.

9. For those that supported a minimum width for narrow trenches, a range of values was provided in the context of different areas within the road. The smallest suggested width was 60mm, with the maximum up to 200mm

10. Of those that supported 75mm trench (14 responses) a concern over the ability to compact was noted, with 75mm being suggested as a minimum value contingent on compaction. Five responses specifically noted 75mm as being a minimum based on achieving other factors, with calls for a higher figure where compaction or laying temperature could not be achieved.

11. The maximum width of a narrow trench is currently set, by the *Specification for the Reinstatement of Openings in Roads 2015*, at 300mm.

12. Nine respondents either gave no response to the request for views on a value, outlined general concerns over compaction but provided no numerical value, or reiterated that there should be no minimum width. For all other responses where a range of widths was suggested, the minimum value was taken to be the response.

13. In five cases, leaving clearance for other activities was highlighted. Specifically this was requirement to allow 50mm clearance either side of apparatus, and to allow adequate width of bound layers for a standard 100mm core to be taken.

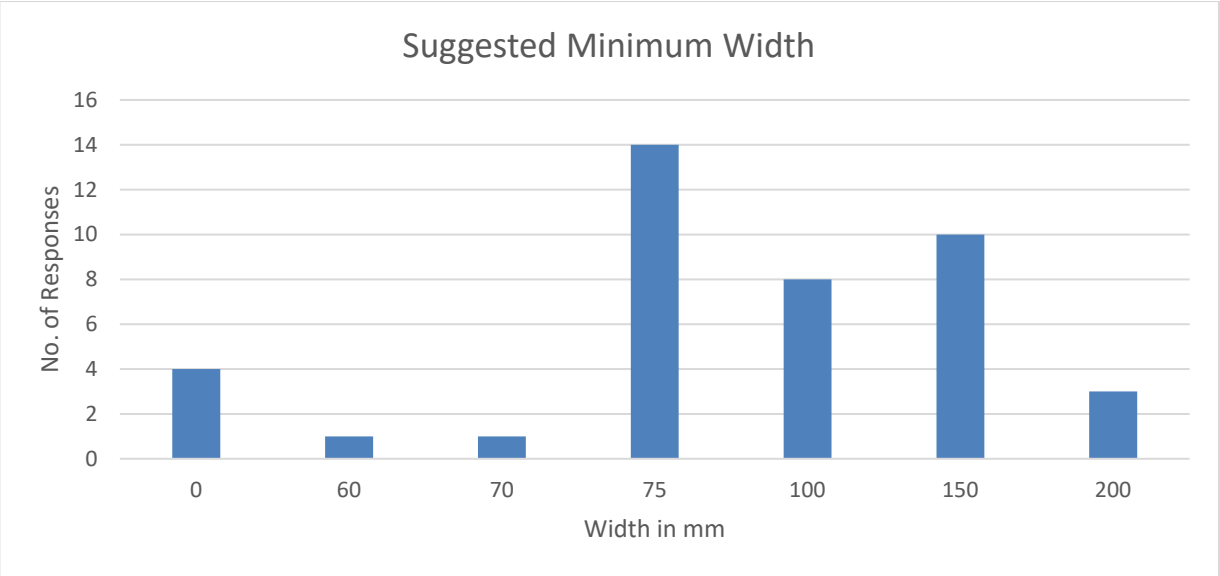

Chart 2: Question 1 – Responses by Answer

"At such narrow widths I would be concerned about the ability of contractors to compact unbound material successfully, thereby creating the possibility of reinstatement failures on large scale. Level of compaction need to be specified and by what type of equipment" – Roads Officer Response

"…believes a minimum width of 100mm should be set. Any narrower and it is not possible to see other buried services during excavation and damage could be caused. the narrower the trench, the more difficult it is to reinstate to specification, but 100mm would be sufficient" – Undertaker response

Question 2
Do you think that the existing intervention limits in the current code are sufficient for narrow trenching?

14. Responses to this question were divided evenly across the 49 responses received. Twenty-five respondents believe that the current limits are acceptable, with 24 believing that they are not.

15. Individuals, Operating Companies and Industry Groups showed no clear consensus. Contractors and Statutory Undertakers were generally supportive of the current code being sufficient.

16. Within the roads authority group, 69% of respondents believe the current code to be insufficient, with 31% supporting the view that current tolerances are acceptable.

Type of respondent	Yes	No	Total
Individual	1	3	4
Statutory Undertaker	7	1	8
Contractor	7	0	7
Operating Company	1	1	2
Roads Authority	8	18	26
Industry Group	1	1	2
Total	**25**	**24**	**49**

Table 2: Question 2 Do you think that the existing intervention limits in the current code are sufficient for narrow trenching – Responses by Type of Respondent

17. The main reasons given against using the current intervention limits relate to the application of the current maximum trip level of 10mm over a shorter distance, as well as a perception that narrower reinstatements pose an increased risk to pedestrians and cyclists. Several responses called for additional research on the subject.

18. Of those in favour of using existing limits, the most common reasons given were that deployment in other parts of the UK to the same intervention limits had not lead to wide scale failures, and difficulty in visually assessing crowing or depression of less than 10mm in practice.

19. Some responses clarified that if specific widths or materials were mandated then the existing tolerances would be acceptable. Two responses suggested that if foamed concrete were used as backfill, current tolerances would be acceptable/fewer failures would result. Another response outlined that a 50% reduction in current tolerances would be required for trenches of less than 200mm width.

Question 3

What should the minimum depth of cover for narrow trenching be?

20. Question 3 is arranged in three parts: the depth of cover of the apparatus in question (Q3a); the material that should be used to reinstate at the various construction layers (Q3b); and evidence keeping requirements related to depth of cover (Q3c).

21. Each of these sections allowed for a further open text response to be given to expand on the positions given.

22. The full text of each part of question three is as follows;

- *3(a) Part 1 Should the code specify a minimum depth of cover for narrow trenches?*

- *3(a) Part 2 Should the current informal guidance on depth of cover more generally be incorporated into the code?*
- *3(b) Part 1 (Should there be a) Preferred material for some layers?*
- *3(b) Part 2 (Should there be a) Preferred material for all layers?*
- *3(c) Should the code specify a means of keeping/providing evidence that the apparatus has been installed at the required depth of cover?*

Question 3, Parts A, B and C	Yes	No	Not Answered
3(a) Part 1 Should the code specify a minimum depth of cover for narrow trenches	44	5	0
3(a) Part 2 Should the current informal guidance on depth of cover more generally be incorporated into the code	39	10	0
3(b) Part 1 Preferred material for some layers	37	11	1
3(b) Part 2 Preferred material for all layers	29	16	4
3(c) Should the code specify a means of keeping/providing evidence that the apparatus has been installed at the required depth of cover?	41	8	0

Table 3: Question 3 – Responses by Type of Response

23. Both question 3(a) and 3(c) were answered by all respondents, with the majority answering 'yes' in both cases. Question 3(b) was answered by almost all respondents and again the majority answered 'yes'.

Type of Respondent	Yes	No	Total
Individual	4	0	4
Statutory Undertaker	6	2	8
Contractor	4	3	7
Operating Company	2	0	2
Roads Authority	26	0	26
Industry Group	2	0	2
Total	**44**	**5**	**49**

Table 4: Question 3(a) Part 2 – Should current industry guidance on depth of cover be more generally incorporated into the code - Responses by Type of Respondent

24. There was strong support from all sectors for the implementation of a minimum depth of cover requirement.

25. Of those who supported a specific minimum depth of cover, 19 supported incorporating current industry guidance. A further six respondents cited the current depth guidance values without specifically citing the source document.

26. Industry guidance is currently produced by Streetworks UK (National Joint Utilities Group), NJUG Guidelines on the Positioning and Colour Coding of Underground Utilities Apparatus - Issue 8 2013. Volume 1

27. Of those who objected to a specified minimum depth of cover, two were Statutory Undertakers and three were Contractors.

Type of respondent	Yes	No	Not Answered	Total
Individual	3	0	1	4
Statutory Undertaker	4	4	0	8
Contractor	4	3	0	7
Operating Company	2	0	0	2
Roads Authority	22	4	0	26
Industry Group	2	0	0	2
Total	**37**	**11**	**1**	**49**

Table 5: Question 3(b) Part 1 Preferred Material in Some Layers– Responses by Type of Respondent

28. There was a preference for specifying preferred materials in some construction layers.

29. Not all respondents answered question 3(b). Of the 48 responses to question 3(b) Part 1, 77% supported specifying materials in some layers.

30. The 37 supporters of specifying materials in some layers were spread across all sectors, with only the Undertaker and Contractor groups showing no strong consensus toward 'yes' for this question.

"…materials should be compliant with the SROR. If not rigorous testing and trialling to ensure suitability and long term durability in order that such materials can be included in the SROR" – Roads Authority Response

"Foamed concrete should be used in many cases as it deals with the undermining and void issues that can be associated with this type of narrow excavation. Although it may not be appropriate in all circumstances especially in certain soil types and where the road structure is flexible in parts" – Undertaker Response

Type of respondent	Yes	No	Not Answered	Total
Individual	3	1	0	4
Statutory Undertaker	4	3	1	8
Contractor	1	6	0	7
Operating Company	1	0	1	2
Roads Authority	19	6	1	26
Industry Group	1	0	1	2
Total	**29**	**16**	**4**	**49**

Table 6: Question 3(b) Part 2 Preferred Material in All Layers– Responses by Type of Respondent

Out of the 49 respondents to this consultation, four gave no answer to this question. Of the 45 responses to question 3(b) Part 2, 65% supported specifying materials in all layers, with support evident across all sector groups

31. Of those who gave a response (59%, 45 respondents) support having a preferred material in all layers. Of those that do not support having a preferred material in all layers, there is no obvious sector preference toward that position.

32. Nine responses either did not answer the question or did not provide any examples of an acceptable material for some or all layers.

33. Six responses from the 'Yes' Category requested that the preferred materials be the same as the current allowable materials listed in the *Specification for the Reinstatement of Openings in Roads 2015*. A further 11 responses outlined that currently allowable materials under this code, or future ones determined by the existing trial process, would be acceptable. One response suggested that any trialled material be acceptable, without specific mention of this code.

34. Five responses spoke specifically about foamed concrete as being a preferred material, one of which specifically caveated it as being impractical for sloped areas. One response suggested that Hydraulically Bound Materials or Stabilised Materials for Reinstatement be used in preference to foamed concrete

35. One response outlined the requirement for a 50mm sand surround to the apparatus, stating that this would allow for traditional backfill materials to be used.

"Foamed concrete should be used in many cases as it deals with the undermining and void issues that can be associated with this type of narrow excavation. Although it may not be appropriate in all circumstances especially in certain soil types and where the road structure is flexible in parts" – Undertaker Response

Type of respondent	Yes	No	Total
Individual	4	0	4
Statutory Undertaker	4	4	8
Contractor	4	3	7
Operating Company	2	0	2
Roads Authority	25	1	26
Industry Group	2	0	2
Total	**41**	**8**	**49**

Table 7: Question 3(c) – Requirement to Provide/Keep Evidence - Responses by Type of Respondent

36. The majority of respondents (83%) supported there being a requirement to provide or keep evidence regarding depth of apparatus

37. The Undertaker and Contractor groups were generally divided on this issue. The Roads Authorities, Individuals, Industry Groups and Operating Companies demonstrated a general consensus towards supporting this as a requirement.

38. There was strong support for the use of the existing facilities within the Scottish Road Works Register. Of those who support the code specifying a method of keeping/providing evidence of depth of cover, a slight majority (23 responses) specifically suggested that photographs be taken, with many further specifying the Scottish Road Works Register as the appropriate facility to host them.

"Photos of a rule in the trench including the time, date and GPS location could be downloaded to the SRWR from a mobile device using an app. This might be developed from the current inspection app" – Roads Authority response.

39. Common reasons for not specifying a means of keeping or providing evidence included; the existing obligations on undertakers to keep plant records; the practical difficulties in achieving this in a cost effective way; and differences in how individual organisations may wish to create and provide this evidence. None of these responses discussed the Scottish Road Works Register as a potential method of overcoming these issues.

"Good practice in telecom infrastructure build, already evidences quality (includes depth of cover) through in progress photographic evidence" – Statutory Undertaker response

"The liability for failure to install to the correct depth would lie with the utility company. Whether records are kept of this should be as per the policy of the relevant company" – Roads Authority Response

Question 4
If the code should specify Should the code specify where narrow trenching can be used?

Type of respondent	Yes	No	Not Answered	Total
Individual	0	1	0	1
Statutory Undertaker	3	3	0	6
Contractor	1	3	0	4
Operating Company	1	0	0	1
Roads Authority	9	1	2	12
Industry Group	1	0	0	1
Total	**15**	**8**	**2**	**27**

Table 8: Question 4 – Responses by Type of Respondent

40. Due to an unforeseen IT issue with the electronic version of the consultation, some respondents saw a duplicate of question 3 (c) in place of question 4. There were 22 responses which fell into this category. These responses have been removed from analysis

41. Of the remaining 27 responses, eight did not support specifying where narrow trenching can be used; 15 supported having this specification in place. This demonstrates a slight preference toward prescription.

42. Of those that supported specifying where narrow trenching can be used, the most common restriction suggested was to areas of footway and verge only, which was mirrored in the free text responses to question six

43. Due to the technical issues with this question, it is not possible to draw a definitive conclusion.

Question 5
If trenchless methods should be the preferred method of installation over narrow trenching?

Type of respondent	Yes	No	Total
Individual	4	0	4
Statutory Undertaker	2	6	8
Contractor	0	7	7
Operating Company	1	1	2
Roads Authority	16	10	26
Industry Group	2	0	2
Total	**25**	**24**	**49**

Table 9: Question 5 – Responses by Type of Respondent

44. Answers to the question were split very evenly, with 51% of responses (25) supporting the use of trenchless methods over narrow trenching. The majority of

Roads Authorities support this, and Individuals and Industry Groups are unanimous in support also. Conversely, all Contractor responses do not support the use of trenchless methods over narrow trenching, as do the majority of Statutory Undertakers.

45. Respondents were asked to qualify their answer in open text

46. Of those who said that there **should** be a preference for trenchless methods, the most common reason given (13 responses) was the reduction in speed to deploy, with the associated reduced traffic management requirement and disruption to the road asset.

47. Of those who said that there **should not** be a preference for trenchless methods over narrow trenching, the most common comment was over concern that having a preferred methodology would immediately preclude certain techniques even if they were the most appropriate in a site specific situation.

48. A total of four responses from those that did not support there being a preference for narrow trenching spoke specifically of the difficulty in employing trenchless methods in areas where other services exist. A further 12 responses raised the need to have flexibility in choosing a method with regard to specific site conditions and operational requirements.

"Whilst in certain cases where possible mole ploughing or directional drilling may be the most suitable method to use. It is also a possibility that either the use of a trenching machine or in fact a traditional method may still be the correct method to use in certain circumstances. it is not possible to presume that you can use any particular method in every case as ground conditions and location can widely vary" – Contractor response

Question 6
Should narrow trenching be Prohibited where certain ground conditions are encountered?

Type of Respondent	Yes	No	Not Specified	Total
Individual	2	0	2	4
Statutory Undertaker	2	6	0	8
Contractor	1	5	1	7
Operating Company	2	0	0	2
Roads Authority	20	5	1	26
Industry Group	2	0	0	2
Total	**29**	**16**	**4**	**49**

Table 10: Question 6 – Responses by Type of Respondent

49. Respondents were asked to qualify their answer in open text.

50. Of those who answered 'Yes - narrow trenching should be prohibited where certain ground conditions are encountered', the most common reasons given were:

- References to the current code specifications, particularly the provisions for challenging ground conditions found in S2.5.2 of the code
- Issues with peat and rock
- That they be restricted to footway and verge rather than set ground conditions
- That they are specifically applicable to rural roads

51. Of those who answered 'No – narrow trenching should not be prohibited where certain ground conditions are encountered' the most common reasons given were:

- That the code should allow for the most appropriate method to be selected on the basis of site conditions, environmental impact and safety rather than hard prescription
- Too many restrictions on when narrow trenching can be deployed will lead to misinterpretation and confusion

52. Some text responses specifically supported having 'prohibited areas' despite answering that 'No - narrow trenching should not be prohibited where certain ground conditions are encountered'

53. Four respondents either gave no answer to this question, or answered with a list of potential positive and negative points for both positions.

Question 7
Is the current safety code adequate for narrow trenching?

Type of Respondent	Yes	No	Not Answered	Total
Individual	1	3	0	4
Statutory Undertaker	5	3	0	8
Contractor	3	3	1	7
Operating Company	2	0	0	2
Roads Authority	25	1	0	26
Industry Group	2	0	0	2
Total	**38**	**10**	**1**	**49**

Table 11: Question 7 – Responses by Type of Respondent

54. This question returned a total of 48 responses.

55. Responses to this question showed strong support for the current safety code being adequate for narrow trenching, with 79% of responses supportive of this position.

56. Of those who supported the current safety code being sufficient (38 responses) the most common reasons given were:

- the potential confusion by road users of separate standards
- the requirement to have one consistent code
- and observations that operationally the traffic management required is not different for narrow trenching compared to 'normal works activities' and that the code already covers this range of activities

"The current code covers works of all durations adequately, from mobile and short duration works to major works. Any variation in the requirements would be more likely to cause uncertainty than to assist" – Roads Authority Response

57. Of those who said that the current safety code is not adequate for narrow trenching (ten responses) the most common reason given was the perceived preference for large static trenches in the current code, *Safety at Street Works and Roads a Code of Practice 2013.*

58. Of the ten responses which do not support the current code as being adequate, nine expanded on that stance in open text.

59. Four of the responses suggested specific changes which could be made to specific equipment and practices. This included suggestions such as the use of rolling closures for works, alternatives to securing walkboards over 'driveways' and the use of clipped barriers.

60. Three responses suggested that narrow trenching could fall within the category of mobile works while still supporting the stance that the current safety code is inadequate. Mobile working is covered under the current safety code under 'Mobile and Short Duration works'.

61. There was a single call for specific Roads Authority approval, and one response that proposed that the current code is already unsuitable for traditional methods and therefore also narrow trenching.

"…….some requirements, such as having to secure walk boards at every driveway, slow work and could potentially compromise safety due to the extended time of securing and releasing walk boards.

Specific requirements should be outlined for narrow trenching which more adequately reflect the nature of the work while ensuring the safety of the public and site workers" - Undertaker Response

"Roadworks are very frustration, anything that can reduce the time spent waiting at red lights is better. Mobile traffic control, as used for verge cutting, may be sufficient" – Individual Response

""current code of practice on site safety is designed for large open trenches that would endanger traffic and pedestrians, if left unguarded. Such an approach results in static works sites that are not adapted to fast moving machinery that has a capability to cover over 300 m a day.

A risk assessment based approach should be adopted for more mobile working practices. For instance, there is no need for a road closure when hedge cutting, so a similar approach could be beneficial when operating machinery that can cut 300 m plus a day of trench, where the cuts is less than 30 mm and does not pose a threat to traffic….." - Contractor Response

Question 8

Encounters with rock – should here should be a requirement to cut a slot where rock is encountered; should the code require that apparatus be laid at a shallow depth when rock is encountered, subject to an appropriate notification method and; should there be a requirement to stop works and hold a joint site visit as soon as rock is encountered?

62. Question eight is arranged in three associated parts, as listed above. All respondents provided an answer for each part. An opportunity was provided to give further information as free text.

Type of Respondent	Yes	No	Total
Individual	4	0	4
Statutory Undertaker	6	2	8
Contractor	2	5	7
Operating Company	2	0	2
Roads Authority	24	2	26
Industry Group	1	1	2
Total	**39**	**10**	**49**

Table 12: Question 8 Should here should be a requirement to cut a slot where rock is encountered? – Responses by Type of Respondent

63. The majority of responses (79%) supported the requirement for a standard slot cutting method when rock is encountered, across all respondent types.

64. The single largest group to object to this methodology was the Contractor group, with five responses stating that this **should not** be a requirement.

"Rockwheels are capable of cutting through some types of rock to produce a narrow trench. However cutting full depth in rock may damage the structure of the existing road so it should be possible to agree a process for an area rather than having to agree each small section of rock found" – Contractor Response

"The correct depth would need to be consistent regardless of the ground conditions, however if the depth could not be made then a joint meeting would be required. we have had situations where the depth has not been able to be reached and an agreement has been made to use concrete as cover for protection broadband fibre has been laid. This is a possible alternative method in the specification if ground conditions deem it" – Roads Authority Response

Type of Respondent	Yes	No	Total
Individual	1	3	4
Statutory Undertaker	3	5	8
Contractor	3	4	7
Operating Company	1	1	2
Roads Authority	15	11	26
Industry Group	1	1	2
Total	**24**	**25**	**49**

Table 13: Question 8 Should the code require that apparatus be laid at a shallow depth when rock is encountered, subject to an appropriate notification method? – Responses by Type of Respondent

65. Responses to this section of the question were equally split, with 49% of respondents agreeing that there should be a requirement to lay apparatus shallow when rock is encountered, and 51% supporting that this should not be a requirement of the code

66. This split was also broadly mirrored when looking at the types of respondent, with the exception of individual responses.

Type of Respondent	Yes	No	Not Answered	Total
Individual	3	0	1	4
Statutory Undertaker	3	5	0	8
Contractor	0	7	0	7
Operating Company	2	0	0	2
Roads Authority	22	4	0	26
Industry Group	2	0	0	2
Total	**32**	**16**	**1**	**49**

Table 14: Question 8 Should there be a requirement to stop works and hold a joint site visit as soon as rock is encountered? – Responses by Type of Respondent

67. Out of 49 responses received, 48 respondents answered this question.

68. The majority of responses to this question supported the requirement for a joint site visit to be arranged as soon as rock is encountered. Two thirds (67%) of responses across all but one of the respondent groups support having this requirement.

69. The majority of Roads Authorities supported this requirement, as did all Operating Companies, Individuals and Industry Groups (2).

70. Mixed support for this proposal was seen from the Undertaker group, the only group not to show a strong preference for either position.

71. All of the Contractor group (7) objected to this requirement.

Question 9
Do you have any other comments about any of the issues raised in this consultation?

72. Question nine allowed respondents to enter any other comments or questions raised by the consultation as free text. There were 21 responses across all respondent types

Type of Respondent	Yes	No	Total
Individual	1	3	4
Statutory Undertaker	5	3	8
Contractor	3	4	7
Operating Company	1	1	2
Roads Authority	10	16	26
Industry Group	1	1	2
Total	**21**	**28**	**49**

Table 13: Question 9 – Responses by Type of Respondent

73. A number of clarifications, suggestions and general points were received in response to question 9 from all respondent types.

74. Some responses spoke about the benefits of the related technique of 'slot cutting' while others specifically advised against bringing in this method

75. The need for good early planning and co-operation was also identified.

"Narrow trenching has been used elsewhere in the UK but has not become the method of choice because of poor planning and execution by providers" – Industry Group Response

76. There were some responses which spoke specifically about the need to investigate duct sharing, and the burden placed on the road to contain this apparatus.

"….. Under the terms of the Electronic Communications Code 2017 which states that the sharing of existing apparatus is recommended. The sharing of apparatus or ducts or existing Dark Fibre, should be encouraged, especially in respect of laying new telecommunication cables. Superfast Broadband roll out throughout the country by a number of Statutory Undertakers could result in several narrow trenches along a footway. This will have an adverse effect on the integrity of the surface courses of the Road Authority asset.

Space in the footways is at a premium and the use of existing ducting etc has to be encouraged…." – Roads Authority Response

77. There were a number of responses which specifically requested longer guarantee periods for works completed using this methodology.

"Narrow trenching may offer some benefits in terms of speed of works and reducing disruption to road users. However, this is only short term but the long term damage of any trenching operation is much greater in my view. It is not clear that there are suitable fill and compaction techniques which ensure the long-term integrity of the road when using narrow trenching. Possibly one way to drive innovation may be to allow narrow trenching subject to longer guarantee periods than for traditional trenching" - Roads Officer Response

78. How narrow trenching should be noticed was discussed by one respondent, given the speed and duration of potential deployment, which may fall within the minor works category of works under the current ruleset of the *Code of Practice for the Co-ordination of Works in Roads 2013.* This was discussed as being insufficient and that longer notice periods/advance sight of works would be beneficial.

"….if the speed of works results in the majority being completed under the Minor Works schedule - a lot of notices get raised for Thursdays, with works being planned and carried out over the weekends resulting in 5 working days meterage (we) feel there may be an initial requirement to give a more advanced timeline notice to allow utilities and road works authorities time to inspect/coordinate/meet prior to works starting. One option would be for the scheme of works to be published as a Major Works or a requirement for the utility to announce at the Area RAUC's prior to works" – Undertaker Response

79. A number of responses detailed specific engineering concerns, such as when geotextile grids are encountered, the use of overbanding, the use of flowable materials, differential settlement and issues with water and freeze/thaw

"*1. How will narrow trenching be dealt with on corners if following a footway when cables will have tolerances for how far they can be curved?*
2. Materials adjacent to the reinstatement will experience differential movement due to freeze/thaw
3. Possibility of settlement - how will this be addressed?
4. Reinstatement may become a water barrier.
5. Preferred reinstatement would be a flowable concrete however this will slow up works when narrow trenching has been proposed for speed.
6. What is the accepted maximum surface depression?
7. Currently the binder course mix may be replaced by the surface course mix given in the specification, providing the same mixture is used as the surface course - will this be acceptable in narrow trenching?" *– Operating Company Response*

"If geotextiles or reinforcement grids are encountered then the trench would possible need to be made wider so that they can be replaced like for like" - Roads Authority Response

80. One response contained a detailed project overview of use of a similar technology within Scotland. This response highlighted heavy HGV movements, road crossings and liability as areas of specific concern.

81. There were general comments on the length of ground that could be opened up at any one time causing disruption to the public, and that the method is not suitable for all works

"This method can be quick and efficient in certain areas but is not a one size fits all option" – Undertaker Response

TRANSPORT
SCOTLAND
CÒMHDHAIL ALBA

Transport Scotland
Buchanan House
58 Port Dundas Road
Glasgow
G4 0HF

0141 272 7100

info@transport.gov.scot

ISBN: 978-1-911582-70-0

Further copies of this document are available, on request, in audio and visual formats and in community languages. Any enquiries regarding this document / publication should be sent to us at **info@transport.gov.scot**

This document is also available on the Transport Scotland website: **www.transport.gov.scot**
Published by Transport Scotland, March 2019

Follow us:
transcotland @transcotland
transport.gov.scot

Scottish Government
Riaghaltas na h-Alba