

# A47 DUALLING – NORTH TUDDENHAM TO EASTON

Scheme no. TR010038

## FURTHER TRANSPORT SUBMISSIONS in response to Deadline 6 submissions

On behalf of A.C. MEYNELL of the [REDACTED]

IP reference 2002/8353



ACM 18

17 January 2022

The Infrastructure Planning  
(Examination Procedure) Rules 2010  
Regulation 10

The A47 North Tuddenham to Easton  
Development Consent Order 202[x]

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Further Transport Submissions in response to Deadline 6  
submissions

On behalf of A.C. MEYNELL of the [REDACTED]

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Application reference: TR 010038

Interested Party reference: 2002/8353

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## INTRODUCTION

1. This submission comments on behalf of Mr Anthony Meynell of [REDACTED] upon the following documents lodged with the Examining Authority at Deadline 6:

REP6-014	Applicant's revised Alternative Wood Lane Junctions Appraisal (track-changed version)
REP6-017	Applicant's response to Deadline 5 comments
REP6-018	Applicant's Responses to ExQ3 (Transport questions 14.3.1 and 14.3.2 and the Sections at Wood Lane Junction included at pdf pages 17/37 onwards)
REP6-023	Norfolk County Council response to ACM's Presentation of Alternatives
REP6-026	Bryan Robinson responses to ExQ3

2. Appendices A and B contain Technical Notes prepared respectively by Mr Joe Ellis of RPC (highway engineer) and Mr Malcolm Foster of Neptune Transport Consulting (transport consultant). These refer to each of the documents listed at para 1 above and are self-explanatory.
3. Appendix C contains extracts from a number of documents prepared by or for the Applicant (as National Highways or its predecessors Highways England and the Highways Agency) which have either been referred to by the Applicant, Mr Ellis or Mr Foster in current or earlier submissions but to date have not been presented to the Examining Authority, or are otherwise relevant to the shape and size of the Wood Lane Junction as proposed by the Applicant in the DCO application. These comprise:

GG101	Introduction to the Design Manual for Roads and Bridges (DMRB) and its subsidiary documents (version 0.1.0, Sept 2021)
CD122	Geometric design of grade separated junctions (version 1.1.0 published November 2021)
CD116	Geometric design of roundabouts (revision 2, April 2020)

TRL RR142	TRL, Roundabout Capacity: The UK empirical methodology (Informative reference 9.1 and 10.1 in CD122)
PPR 206	TRL's Published Project Report 206, International comparison of roundabout design guidelines by Janet Kennedy, prepared for the Highways Agency (April 2007)

4. **Appendix D** contains:

Three photographs of existing grade separated junctions constructed by the Applicant on trunk roads

Overlays on the Applicant's satellite view of the south dumbbell of the Wood Lane Junction (REP6-018 pdf page 17/37) illustrating the land taken by the suggested reduction of its inscribed Circle Diameter (ICD) to the 80m suggested by the Applicant at REP6-018 and to 70m as illustrations of the reductions which could have been considered following the suggestions on behalf of ACM by Mr Foster in his initial report with ACM's WRs (REP1-057, para 14.3).

## EXPLANATION FOR APPENDICES C AND D

5. ACM is mindful of the late stage in the Application but having seen for the first time at Deadline 6 the Applicant's sections (which he had requested through Savills in August 2021) with the overlay of the proposed south dumbbell roundabout of the Wood Lane Junction on a satellite view of his land at a large scale (REP6-018 pdf pages 17/37 onwards) and the Applicant's suggestion (in response to ExQ3 14.3.1) that the roundabout could be reduced to 80m ICD in a no-NWL situation, two points have become immediately apparent to him as a layman:

- (1) the sheer size of the roundabout (when compared with that of the container lorry visible on the satellite view at REP6-018 pdf p17/37 and shown illustratively in the sections) and
- (2) that a reduction to 80m ICD, even without moving its location otherwise, would bring the south side of the roundabout back off his open arable field to the margin of the north woodland belt and thus reduce its impact outside the line of that woodland.

6. Seeing these two factors now has prompted ACM to ask:

- (a) could the roundabout safely be reduced to an 80m ICD even with NWL and
- (b) whether, if it can safely be reduced that much, it could safely be reduced further (to say 70m) and / or also moved (say) 30 metres east so that all of the roundabout is located within the woodland belt at that location.

7. Given the steepness in the fall of the land by Berry's Lane in the way of the proposed junction the pulling back of the south side of the roundabout (by 40m for a reduction to an ICD of 80m and by 60m for a reduction to an ICD of 70m, even if the mainline were to remain as proposed) and of the de-trunked A47 eastern spur by perhaps a similar amount, could mean that as well as
  - a. the roundabout retreating with the existing woodland,three other advantages might be gained:-
  - b. the amount of embankment over the Estate would reduce or even be eliminated in parts,
  - c. the Anglian Water main which crosses the site east west might not have to be moved, or could be diverted less than before, and
  - d. the cycle path might be able to be redirected so that instead of running across his field and removing the rural footpath, to use some of the closed sections of Dereham Road and Berry's Lane so as to pass on the north side of the estate to Berry's Lane.
8. Screenshots of the south dumbbell enlarged from REP6-018 pdf page 17/37 showing the effect of a reduction in ICD to 80m and 70m can be found at the end of **Appendix D**. Immediately before them are photographs of (a) a single roundabout two-bridge intersection, showing its size and two illustrations of existing dumbbells on the A14 and A14 or A1 taken from the OS satellite map service. The dumbbells shown in those photos, as will be seen from the scale, appear to be not much over 50m ICD.
9. It is also apparent to ACM that the south dumbbell could be a tear drop rather than a full roundabout ( as is the lower roundabout in the photo at TM 03387 260525 because the only traffic crossing the link road would be a U-turn.
10. As to what ACM's transport and highways consultants have described in all their submissions as the excessive size of the Wood Lane Junction dumbbell roundabouts, it will be relevant for the Examining Authority to have drawn to his attention specifically now that he has seen the sections at Deadline 6, the guidance and illustrations from the Applicant's manuals and reports which govern its design of the Wood Lane Junction, extracts from which are at **Appendix C**. These are explained in Appendix C but demonstrate that the Applicant's own requirements and guidance are clear that care should be taken not to create roundabouts of an excessively large ICD both for creating the optimal traffic circulation and for safety, and that an ICD of 100m is the very largest that is permitted to be contemplated.

11. Further, it is clear from the documents extracted in Appendix C that there are three critical parts of a junction for its safety and resilience, namely (1) entry width (2) approach width and (3) flare length. These are the three most important factors when determining a junction's form using the ARCADY software, while the remaining geometries (including ICD) have lesser effects (see App C, TRL RR142, para 4). The Applicant here is seeking to fix the ICD without having yet designed the three most important factors for all entries and exits to the junction (see the junction drawings which do not include these for the link road, the B1535 (Wood Lane), or the de-trunked A47), which it has confirmed to ACM will be done after the DCO is completed. In ACM's submission this places the cart before the horse and ACM invites the Examining Authority to require the Applicant to complete an indicative design which enables the roundabouts' size to be more robustly determined. It is also recommended in the manuals that the ICD size should take account of the landscape around it.

NOTE: Appendices A and B follow in this document; Appendices C and D are contained separately.

GHJ 17 January 2022

## APPENDIX A

Technical Note by Mr Joe Ellis of RPC  
14 January 2022

## SUPPLEMENTARY TECHNICAL NOTE

**Project Title:** NTP A47 Preliminary Highway Design

**Report Reference:** JNY11154-02A

**Date:** 14 January 2022

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### 1 INTRODUCTION

1.1 This Supplementary Technical Note should be read in conjunction with RPS Technical Note JNY11154-01A dated 9 November 2021 (appended to REP4-023). This Supplementary Technical Note reviews and comments on the following documents:

- REP6-016 Highways England (National Highways) Deadline 6 Submission – 9.15 Alternative Wood Lane Junction Options Appraisal (Tracked) Rev 1
- REP6-017 Highways England (National Highways) Deadline 6 Submission – 9.23 Applicant’s Responses to Deadline 5 Comments
- REP6-018 Highways England (National Highways) Deadline 6 Submission – 9.24 Applicant’s Responses to the Examining Authority’s Third Written Questions
- REP6-023 Norfolk County Council’s Deadline 6 Submission – which is a Response to Applicant’s “Additional Submission – 9.15 Alternative Wood Lane Junction Options Appraisal”

### 2 REP6-016

2.1 This document makes a number of ‘tracked changes’ (deletions and additions) to National Highways (NH) Alternative Wood Lane Junction Options Appraisal dated October 2021; revision dated December 2021. Most of these changes are minor but RPS makes the following comments which are in addition to, or reinforce JNY11154-01A.

2.2 At paragraphs 3.3.5 and 3.3.6 NH makes further assertions with respect to a hierarchical approach to appropriate junction types. To be clear, CD122 does not provide the hierarchy NH continues to incorrectly assert. A two bridge grade separated junction design is a common arrangement across the UK, providing greater traffic flow capacity and is less complex from a road user perspective than a dumbbell arrangement (CD122 Appendix A4).

2.3 At paragraph 3.4.1, NH continues to assert that DMRB is the most appropriate design standard for the ‘de-trunked’ A47 and side roads/local roads. DMRB is a document which in the main is focused on creating free flow conditions for motorised traffic. It’s use is incompatible with the design of local roads where the focus (in accordance with NPPF) should be on promoting and encouraging sustainable travel particularly by public transport, and cycling and walking. RPS continues to believe that MfS is the more appropriate design document for the local roads.

2.4 At Section 5, Safety Review, NH introduces its reviewer, but to be clear the ‘review’ is not an independent Road Safety Audit carried out by two experienced professionals in accordance with DMRB, but rather a technical audit carried out by one experienced professional. In particular the review does not consider how the NH scheme or the alternatives will perform from a road users

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perspective, including bus passengers, cyclists, horse riders or pedestrians; which are essential requirements of a Road Safety Audit.

- 2.5 Finally, as explained in REPS3-045 paragraph 11 (and REP4-023 paragraph 1.2), the alternatives allow for '*the north part of the existing Berry's Lane (closed to all vehicles except tractors) to be used for cycles and horses*'. NH's continual referral to the alternatives allowing all traffic to use the full length of Berry's Lane is incorrect.

### **3 REP6-017**

- 3.1 This is NH's response to Deadline 5 Comments dated December 2021, in particular RPS Technical Note JNY11154-01A dated 9 November 2021 (appended to REP4-023). NH refers to various additional difficulties in providing the Lady's Grove underbridge and the Wood Lane junction alternatives. These difficulties relate to drainage, flood risk and utilities.
- 3.2 With respect to the proposed Lady's Grove's underbridge NH states that the proposal would be contrary to CDM 2015 as it would require '*exceptionally deep pumped drainage*'. This response must be considered in the light of the applicant's proposal to construct a full grade separated junction at Wood Lane, which in itself will have significant construction safety risks but just like a pumped drainage system, can be safely managed by experienced construction personnel. To be clear there is nothing exceptional about constructing an underbridge (or underpass), they are commonly seen throughout the UK and by their very nature (i.e. topography) can be subject to surface water flooding requiring in some cases pumped drainage. However, as stated in REP4-023 paragraph 1.2, the Lady's Grove underbridge has been located where the ground is naturally at a lower level and can pass under the proposed A47 with drainage by gravity to a drainage basin in the south.
- 3.3 NH's comments on the drainage implications of the alternative Wood Lane junctions seem to be based on not providing a link road north of the new A47 and connecting to Wood Lane. To be clear that link road can still be provided (as a 'choice') in both alternatives. Notwithstanding, there is sufficient space to accommodate a drainage basin north of the existing A47 and south of the proposed A47, negating the need to provide such a basin within the [REDACTED].
- 3.4 On the matter of National Grid without further details NH's comments are non-sensical in that by retaining the existing A47 south of the new A47, they suggest a greater diversion. There is also no evidence to support NH's case that the alternatives would require additional land beyond the DCO boundary. Based on the evidence at worst, the alternatives perform as well as NH's design.
- 3.5 With respect to the Anglian Water pipeline, construction compounds, cyclists, all these points are noted, in particular that the alternatives perform as well as, or better than, NH's design.
- 3.6 Overall, NH's response raises no serious issues and certainly no show-stoppers with respect to the alternatives.

### **4 REP6-018**

- 4.1 To Q14.3.1 (page 8), NH responds that the two Wood Lane roundabouts which form the dumbbell could be reduced in size in the without NWL scenario, from the currently proposed 100m to 80m diameter, giving a land saving of circa. 0.2 hectares in each case. This equates to 0.4 hectares or 4000m<sup>2</sup>, an area of land NH considers minimal.
- 4.2 Appendix A plan diagram (showing section cutlines) gives a very good portrayal of the comparison between the existing and NH's proposals for the Wood Lane junction, showing the

substantial increase in the highway at this location and its intrusion into the [REDACTED]. Reducing the diameter of the roundabouts by 20m will clearly reduce the impact on [REDACTED] without detriment to other parties.

- 4.3 Although Appendix B (page 14) seeks to answer the question, 'Provide the evidence to demonstrate the size of the Wood Lane Junction required should the Norwich Link not be provided', the statement primarily focuses on why NH believes that the NWL will proceed.
- 4.4 The statement (page 15) makes the very strong assertions that the NWL is 'near certain', and 'therefore, the Wood Lane roundabout must be designed to accommodate these [NWL traffic] flows'. Although it's perfectly reasonable for NH to consider how the scheme would be affected by the NWL and design accordingly, NH's approach to guidance is unreasonable. It should be remembered that the NWL has no planning permission, will probably require compulsory purchase of land, and notwithstanding any contractor involvement, requires significant funding from central Government, the reason for the business case. There is no guarantee that the NWL will proceed or if it does, in its current form.
- 4.5 To assert, as NH does at page 15, that the NWL will be open to traffic within 12 months of the opening of the A47 scheme, is based on the NWL planning application being submitted early 2022 and positively determined, land acquired, and funding achieved for a 'start on site' date of 2023. This is highly ambitious, and pre-judges a planning application decision (e.g. RPS has been informed that Norwich City Council is objecting to the NWL), the success of a business case, and a smooth acquisition of land; it is wholly unrealistic.
- 4.6 NH's limited evidence (page 16) to dismiss the option of (at least) reducing the southern roundabout to 80m in the with and/or without NWL scenarios, appears to be related to impact on weaving lengths, HGV flows, and junction flares. However, NH provides no evidence to support these reasons.
- 4.7 Taking the above matters in consideration the need for 100m diameter roundabouts rather than an 80m versions seems unjustifiable 'future proofing'. At the very minimum the southern roundabout should be reduced to 80m, an amendment which will substantially reduce the impact on the [REDACTED] whilst not materially affecting NH's scheme design.

## **5 REP6-023**

- 5.1 This is a two page document drafted by Norfolk County Council (NCC). It would appear that there has been a misunderstanding in that NCC was expecting a revised submission from the [REDACTED] on its alternatives. This was never the intention, with REPS3-045 and REP4-023 remaining [REDACTED] main submissions with respect to its suggested alternatives.
- 5.2 Notwithstanding, NCC in its REP6-023 is of the view that the alternatives have a greater extent of local road which introduces an increased risk to road safety and maintenance liability. Although RPS agrees that there will be an increased maintenance liability this is negligible when one considers the extent of local roads within Norfolk. But more importantly there is no evidence that increasing the extent of the (local) road network leads to a reduction in road safety.

## **6 CONCLUSIONS**

- 6.1 RPS remains of the view that there are no showstoppers with the [REDACTED] Wood Lane alternative junction designs. Both alternatives will have significantly less detrimental impact on the [REDACTED], and are deliverable. As a very minimum the southern roundabout should be reduced in size from 100m to 80m diameter.

## APPENDIX B

Technical Note by Mr Malcolm Foster of Neptune Transport Planning  
17 January 2022

## TECHNICAL NOTE 3

TO	Client & Team	FROM	Malcolm Foster
DATE	14 January 2022	STATUS	Internal
SUBJECT	Technical Note 3 - A47 North Tuddenham to Easton Dualling: D7 Comments		

### COMMENTS ON RESPONSES TO THE EXA'S FURTHER WRITTEN QUESTIONS (Q14.3.1)

Discussions and responses to date do not give confidence that the alternatives options presented on behalf of Mr Meynell are being given genuine consideration. We would re-iterate the key conclusions, as stated in the Transport Written Representations submitted by Mr Meynell at Deadline 1 (REP1-057), which have not been addressed by responses to date:

- The Applicant's rationale for the proposed junction explained the need for a fully grade separated option 'to support our aim to create a more free-flowing, safe and serviceable, integrated network'. However, it did not detail or justify why the proposed online dumbbell roundabout option was preferred over an offset option or single roundabout two bridge option.
- It is considered that given the level of growth proposed and that the future design year is 2040, the approach to modelling junction performance sets a very high bar of essentially free flow traffic with no queueing, which would result in the over-design of this junction. It is essentially a predict and provide approach but with inbuilt spare capacity even in 2040.
- Unnecessary strict adherence to DMRB has prevented the proper consideration of other technical solutions. A focus on construction costs to the detriment of other environmental costs, such as heritage impact, and opportunity such as reducing utilities costs. Sustainability has not been fully taken into account in accordance with NPPF, in particular the potential to reuse the existing/old A47. This would also appear to be at odds with the Applicant's stated intention to use a hierarchical approach to carbon management.

The current scheme includes a stub connection for the proposed Norwich Western Link (NWL) promoted by Norfolk County Council. National Highways states that the A47 Development Consent Order (DCO) has been drafted such that if the NWL scheme does not gain planning approval, the stub connection will not be delivered. If the NWL scheme does not go ahead, it is stated that a grade separated junction would still be required at this location due to traffic flows, and therefore this would not change the proposed junction location or layout. In our view, it is not clear or logical how it has been concluded that the proposed junction form and layout would not change whether the NWL proceeds or not. The HE's own traffic figures (Junction and Sideroad Strategy: Appendix C) suggest that with no NWL - inbound traffic flows to the junction would reduce by some 69 (in the Am peak) and 80 percent (in the PM peak). If the NWL scheme is not built – an alternative junction form and layout should be considered. At the very least an alternative grade separated scheme with smaller roundabouts should be considered.

To Q14.3.1, NH now responds that the two Wood Lane roundabouts which form the dumbbell could be reduced in size in the without NWL scenario, from the currently proposed 100m to 80m in diameter. Reducing the diameters of two roundabouts each by 20m, with a corresponding relocation further north, all within the scheme boundary will clearly reduce the impact on [REDACTED] without detriment to NH's scheme or other parties.

This response to the Ex A's question "What options has the Applicant looked at..." in which the Applicant suggests only now that the roundabout could be reduced in diameter, seems only to reinforce the validity of Mr Meynell's continuing complaint that no other options to the current option for which development consent is now sought were considered (as described in previous comments). It would appear that the Applicant is unable to address that central complaint, presumably because no other options were considered.

Furthermore, in suggesting that the alternative options will all take more land, NH have not taken into account that due to the northwards proposed movement of the new mainline the area of arable land and woodland between the existing and new A47s, east of the junction, is increased to a worthwhile size that would be able to be returned to the existing owner (who also owns the land on the north side of the new road in that location).

Finally, I fully support the points raised in the submission of Bryan Robinson which challenge NH's current position in relation to NWL. The NWL has no planning permission and may require compulsory purchase of land. There is absolutely no guarantee that the NWL will proceed, or if it does, will proceed in its current form. To re-iterate, in our view, it is not clear or logical how it has been concluded that the proposed junction form and layout would not change whether the NWL proceeds or not.

## **COMMENTS ON RESPONSES TO THE EXA'S FURTHER WRITTEN QUESTIONS (Q14.3.2)**

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To Q14.3.2, the NH response does not provide a satisfactory answer to the EXA question and does not address the key points previously raised by Mr Meynell, in particular, the impact of the scheme on local seasonal agricultural vehicle movements. The three alternative offset alignment and junction options identified previously would all allow greater retention of the current A47 and would allow a much improved and less convoluted access route for local traffic, pedestrians and cyclists between Hockering and Honingham, rather than the one currently proposed. For all 3 alternative options, the option 'b' variants would retain the existing A47 west of Hillcrest with an underpass built under the new dualled A47 at Lady's Grove. The added cost of this underpass would be offset by the benefits to local traffic and access by non-car modes. The retention of the existing A47 would also benefit from fewer utility diversions on the existing road network, improved construction methodology and better A47 traffic management during construction.

With regard to cycle provision, at ISH3 NH confirmed that if the NWL were to be built, the east west cycle connection across it, just north of the junction (Work 26a), would be closed so east west cyclists wanting to avoid the junction would have to go north to the next underpass under the NWL which is planned a considerable distance further north. In practice, it is more likely one that cyclists would revert to using the Wood Lane junction. The Lady's Grove underpass provides a much more convenient solution.

## **REFERENCES**

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- REP6-018 NH Replies to EXAQ3, specifically Qs 14.3.1, 14.3.2
- REP6-026 Bryan Robinson's representation