

A12 Chelmsford to A120 widening scheme

TR010060

DEVELOPMENT CONSENT ORDER CHANGE APPLICATION CONSULTATION

B1023 Roundabout Technical Note

Rule 113 and 114
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1 Introduction

1.1 Background

- 1.1.1 An application seeking a development consent order (DCO) for the A12 Chelmsford to A120 widening scheme (the proposed scheme) was submitted by National Highways to the Secretary of State for Transport via the Planning Inspectorate on 15 August 2022 and accepted for Examination on 12 September 2022.
- 1.1.2 The Examination started on 12 January 2023 and is expected to finish on 12 July 2023.
- 1.1.3 Since the DCO application was made, National Highways has continued to engage and refine designs to identify opportunities to further improve the proposals. As a result of this, National Highways are consulting on changes to the proposed scheme during the Examination stage to address interested parties' suggestions and implement improvements to the proposed scheme.
- 1.1.4 This targeted DCO change application consultation reflects design changes to the DCO application that we are proposing. These changes are as a result of the continued design evolution, detailed design progressing in parallel with the application, and continued engagement with stakeholders, interested parties and our delivery partners.
- 1.1.5 Map books have been created to support the consultation which show the key DCO drawings which would be affected by the proposed change.
- 1.1.6 The DCO application can be found on the Planning Inspectorate's website at the following link
<https://infrastructure.planninginspectorate.gov.uk/projects/eastern/a12-chelmsford-to-a120-widening-scheme/>
- 1.1.7 References to the DCO application or subsequent documents submitted during the Examination will be made in this report, the document reference number will be written in square brackets and all documents with a reference number can be found in the Examination Library on the Planning Inspectorate's website.

1.2 Changes being made

- 1.2.1 National Highways is proposing the removal of the segregated left turn lane (SLTL) from the arrangement of the Inworth Road Roundabout that was presented in the DCO application.

1.3 Reason behind changes

- 1.3.1 This SLTL was proposed to alleviate the potential queuing of traffic wishing to turn left from the B1023 south of the roundabout, by removing the conflict of this movement with drivers wishing to turn right at the roundabout from the B1023 north of the roundabout.
- 1.3.2 Through design refinement in the parallel detailed design process and validation against the strategic traffic model presented as part of the DCO

Application, its inclusion is not required for the roundabout to perform acceptably in the proposed scheme's design year of 2042. Further to this, the proposed removal of the SLTL helps reinforce the local nature of the existing B1023 in this area, reduces the area of impermeable pavement and therefore the drainage burden in the immediate vicinity.



Plate 1.1 Inworth Road Roundabout with Segregated Left Turn Lane as submitted for DCO Application



Plate 1.2 Inworth Road Roundabout with Segregated Left Turn Lane removed

2 Summary of change

2.1 Design principles

2.1.1 The overarching design principle for this change was to ensure that the roundabout could operate safely and provide capacity for the forecasted traffic demand. An arrangement without the SLTL was drawn up and modelled in microsimulation software, the results are presented in section 3.3 below.

3 Impacts

3.1 Land take

- 3.1.1 While there may be a slight decrease in the final footprint of the road, when current limits of deviation are taken into account, together with adjacent drainage works there is no proposal at this stage to alter the proposed land acquisition in the area in question.

3.2 Drainage design

- 3.2.1 The reduction in paved area is likely to reduce the amount of drainage infrastructure. However, there will not be a change to the size of the associated drainage ponds submitted as part of the DCO application [APP-174], as this is also associated with changes to the drainage proposals further south along the B1023.

3.3 Traffic

- 3.3.1 Although traffic joining junction 24 on the approach from Inworth Village would have to use the Inworth Road roundabout itself to access junction 24 rather than a separate left-hand turn lane, this is not predicted to affect the performance of the junction. All arms of the roundabout are still predicted to operate with a Level of Service 'A' (i.e. the best level of operation), the same as was reported in Table 4.1 of the Transport Assessment submitted as part of the DCO application [APP-253].
- 3.3.2 The change is not predicted to make drivers change which routes they take in their journeys, so there would be no change in the amount of traffic on any roads.

3.4 Environment

- 3.4.1 The below sections describe the predicted environmental impacts of the new design of the junction 24 Inworth Road roundabout, with reference to the conclusions in the assessment chapters of the Environmental Statement submitted as part of the DCO application (chapters 6 to 16 of the Environmental Statement, DCO examination library reference [APP-073 to APP-083]).
- 3.4.2 Each section addresses the change in potential impacts, change in proposed mitigation measures, and changes to the assessment of likely significant effects as a result of the new design.

Chapter 6: Air quality

Potential impacts

- 3.4.3 The air quality assessment undertaken for the Environmental Statement is based on modelling impacts to a set of predefined human health, ecological and pollution climate mapping (PCM) receptors (see Environmental Statement Appendix 6.5: Air quality modelling results [APP-104]). The removal of the

segregated left turn has no material effect on the traffic forecast in the opening year 2027 and the subsequent impact on air quality at the nearest relevant receptors R122 and R124 (see Environmental Statement Figure 6.9 [APP-213]). As the operational traffic remains unchanged from what was assessed in the Environmental Statement, and the receptors are unaffected, then the potential impacts would remain as reported in Environmental Statement Chapter 6: Air quality, Section 6.9 [APP-073].

3.4.4 The construction traffic for the proposed scheme is constrained to the A12 corridor, as a result subsequent emissions from construction traffic would not impact sensitive receptors on Inworth Road.

3.4.5 Potential impacts from dust during construction would not change.

Design, mitigation and enhancement measures

3.4.6 No additional mitigation measures, beyond standard mitigation for dust management, have been proposed on the basis that there would be no likely significant air quality effects, in accordance with the Design Manual for Roads and Bridges (DMRB) LA 105 (see Environmental Statement Chapter 6: Air quality, paragraph 6.10.6 [APP-073]). The removal of the segregated left turn has no material effect on this outcome, and therefore no change to mitigation is required.

Assessment of likely significant effects

3.4.7 As the potential impacts would not change due to the removal of the segregated left turn, there would be no change to the significant effects for human health, ecological, or PCM receptors (see Chapter 6: Air quality, Section 6.11 [APP-073]).

Chapter 7: Cultural heritage

Potential impacts

3.4.8 The impacts on cultural heritage assets that would be caused by the proposed scheme at the junction 24 Inworth Road roundabout are considered within the assessment of effects presented in Environmental Statement Chapter 7: Cultural heritage [APP-074] and Appendix 7.9: Cultural heritage impact assessment summary tables [APP-117].

3.4.9 Impacts on cultural heritage assets from the new junction 24 Inworth Road roundabout design would be of a similar scale to those already assessed, so there would be no change to the potential impacts on cultural heritage to those described in the Environmental Statement.

Design, mitigation and enhancement measures

3.4.10 No change is required to the design, mitigation and enhancement measures as the effects on cultural heritage assets from construction and operation of the new junction 24 Inworth Road roundabout design would not differ from those previously assessed.

Assessment of likely significant effects

- 3.4.11 The changes from the new design would not be at a level that would generate any new or different likely significant effects to those already reported for the proposed scheme, and there is therefore no change to the reported residual significance of effects reported in Section 7.11 of Chapter 7: Cultural heritage [APP-074].

Chapter 8: Landscape and visual**Potential impacts**

- 3.4.12 The landscape effects that would be caused by the proposed scheme at junction 24 are considered within the assessment of effects on local landscape character area F1 Messing Wooded Farmland, presented within Environmental Statement Appendix 8.2: Landscape effects schedule [APP-120]. There would be no further landscape effects than assessed in the Environmental Statement as the changes would be localised, and the assessment of impacts on F1 Messing Wooded Farmland considers the full extent of the proposed scheme where it falls within F1 Messing Wooded Farmland, including proposals at junction 24 and along the A12 mainline, as well as the proposals along Inworth Road. As such, the overall conclusions on landscape impacts reported within Environmental Statement Chapter 8: Landscape and visual [APP-075] and Appendix 8.2: Landscape effects schedule [APP-120] would not change as a result of the new design.
- 3.4.13 Visual effects have been assessed through the application of representative viewpoints located at publicly accessible viewpoints, a proportionate approach which is supported by the Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3) and DMRB LA 107 Landscape and Visual Effects, Revision 2. Representative viewpoint 17 would be affected by the new design of the junction 24 Inworth Road roundabout. However, there would be no further visual effects than assessed, as the changes would be localised and would be set within the context of the wider proposals at Inworth roundabout and junction 24. Therefore, the visual impacts assessed within Chapter 8: Landscape and visual [APP-075] and Appendix 8.3 Visual effects schedule [APP-121] would not change as a result of the new design.

Design, mitigation and enhancement measures

- 3.4.14 The new design does not affect the planting presented on sheet 14 of the Environmental masterplan, part 3 [APP-088]. Minor adjustments will be required to provide grass to reflect the new highway layout, which does not materially affect the mitigation that would be delivered.

Assessment of likely significant effects

- 3.4.15 Consistent with the explanation presented above that the new design would not affect the landscape and visual impacts reported within the Environmental Statement, the landscape and visual effects reported within Chapter 8: Landscape and visual [APP-075], Appendix 8.2: Landscape effects schedule [APP-120] and Appendix 8.3: Visual effects schedule [APP-121] would not change as a result of the new design.

Chapter 9: Biodiversity

Potential impacts

- 3.4.16 The new design of the junction 24 Inworth Road roundabout would not change the assessment of effects with respect to sensitive ecological receptors assessed within Environmental Statement Chapter 9: Biodiversity [APP-076] and Appendix 9.15: Assessment of air quality impacts on ecology receptors report [APP-139]. The removal of the segregated left turn has no material effect on the traffic forecast in the opening year 2027 and so there would be no changes to nitrogen deposition on designated sites, ancient woodland or veteran trees.

Design, mitigation and enhancement measures

- 3.4.17 No new effects on sensitive receptors have been identified from the new design of the junction 24 Inworth Road roundabout, and as such there are no changes to the mitigation proposed within Section 9.10 of Chapter 9: Biodiversity [APP-076].

Assessment of likely significant effects

- 3.4.18 Given the potential impact from the new design of the junction 24 Inworth Road roundabout would be the same as the design assessed in the Environmental Statement, the effects of construction and operation would remain consistent with the findings presented within Section 9.11 of Chapter 9: Biodiversity [APP-076].

Chapter 10: Geology and soils

Potential impacts

- 3.4.19 The new junction 24 Inworth Road roundabout design does not affect agricultural land take. While the junction is on agricultural land, the land take is unaffected by the new design.
- 3.4.20 There are no land quality constraints in the area of the junction 24 Inworth Road roundabout.
- 3.4.21 There are no geological receptors in this location.
- 3.4.22 The new design does not result in any changes to the potential impacts reported in Section 10.9 of Environmental Statement Chapter 10: Geology and soils [APP-077].

Design, mitigation and enhancement measures

- 3.4.23 The new junction 24 Inworth Road roundabout design does not necessitate any changes to be made to the design, mitigation and enhancement measures reported in Section 10.10 of Chapter 10: Geology and soils [APP-077]. No specific mitigation measures were identified for junction 24, beyond standard measures for managing soil during construction, and therefore no change to this is required with the new design.

Assessment of likely significant effects

- 3.4.24 There is no change to the likely significant effects reported in Section 10.11 of Chapter 10: Geology and soils [APP-077] as there are no changes to the potential impacts associated with the junction 24 Inworth Road roundabout.

Chapter 11: Material assets and waste**Potential impacts**

- 3.4.25 The new design does not result in any changes to the potential impacts reported in Section 11.9 of Environmental Statement Chapter 11: Material assets and waste [APP-078]. This aspect does not assess the impacts associated with specific design elements at a local level, and instead focuses on assessing the impacts of materials consumption, minerals sterilisation and waste disposal in absolute terms.

Design, mitigation and enhancement measures

- 3.4.26 The new design does not necessitate any changes to be made to the design, mitigation and enhancement measures reported in Section 11.10 of Chapter 11: Material assets and waste [APP-078]. No additional mitigation measures were identified for this aspect in relation to junction 24, and therefore no change to this is required with the new design.

Assessment of likely significant effects

- 3.4.27 While the new design is likely to result in negligible, yet indeterminate, changes to the total materials consumption, minerals sterilisation and waste disposal reported in Section 11.11 of Chapter 11: Material assets and waste [APP-078], any changes are considered insignificant in the context of the entire proposed scheme.
- 3.4.28 The changes from the new design would not be at a level that would generate any new or different likely significant effects to those already reported for the proposed scheme, and there is therefore no change to the reported residual significance of effects for the material assets or waste matters of this aspect.

Chapter 12: Noise and vibration**Potential impacts**

- 3.4.29 The closest construction receptor to the proposed works is R29, which is representative of receptors around the proposed new junction 24 (this is shown on sheet 3 of Environmental Statement Figure 12.3 [APP-230]). For the night-time works involving vegetation clearance around the area of the junction 24 Inworth Road roundabout, there were impacts predicted to be above the significant observed adverse effect level (SOAEL), indicating the potential for likely significant adverse effects if the temporal threshold is exceeded, as defined in paragraph 12.5.27 of Environmental Statement Chapter 12: Noise and vibration [APP-079]. The works for the revised layout would be no different in terms of noise impacts, and so the impacts above SOAEL for the vegetation clearance would remain for the new design.

- 3.4.30 For operation, the new design would not cause a change to the predicted traffic flow around the roundabout. In the area of the roundabout, there were predicted to be both increases and decreases in noise, with the decreases being minor and moderate and the increases being minor. These are described in paragraph 12.9.56 of Chapter 12: Noise and vibration [APP-079]. As the new design would not change the predicted traffic flow, these impacts would be the same with the removal of the segregated left turn at the roundabout.

Design, mitigation and enhancement measures

- 3.4.31 No specific construction mitigation measures beyond standard mitigation measures were identified for the works associated with the construction of the roundabout, and no change to this is required with the new design.
- 3.4.32 During operation, there were no mitigation measures identified in the Environmental Statement. There is no change to the potential impact with the new design, and therefore no change to operational mitigation is required.

Assessment of likely significant effects

- 3.4.33 During construction, the identified impacts above the SOAEL for vegetation clearance were not significant adverse effects since the temporal scope defined in paragraph 12.5.27 of Chapter 12: Noise and vibration [APP-079] was not met for the works. The removal of the segregated left turn would not change this and so there would be no significant adverse effects from the new design, and hence the conclusions of the Environmental Statement do not change.
- 3.4.34 The operational noise assessment identified likely significant adverse and beneficial effects in the area around the roundabout. These are described in paragraphs 12.11.43 and 12.11.44 of Chapter 12: Noise and vibration [APP-079] and shown on sheet 7 of Environmental Statement Figure 12.5 [APP-232]. These effects would not change with the new design of the roundabout, as traffic flows would not change, and so the conclusions of the Environmental Statement do not change.

Chapter 13: Population and human health

Potential impacts

- 3.4.35 The new junction 24 Inworth Road roundabout design does not affect agricultural land take. While the junction results in an overall land-take from Agricultural Landholding 23 (reported in Environmental Statement Appendix 13.3: Land Use and Accessibility Assessment Tables [APP-155]), the land take is unaffected by the new design.
- 3.4.36 No notable change in impact is identified from the new design on private property and housing, community land and assets or development land and business.
- 3.4.37 There would be no change in impacts predicted for walkers, cyclists and horse riders from the new design.
- 3.4.38 No change in impact on human health is anticipated from that assessed within the Environmental Statement on the basis that there is no change in health determinants impacted on from the new design.

Design, mitigation and enhancement measures

- 3.4.39 The new design would not affect the mitigation outlined in Environmental Statement Chapter 13: Population and human health [APP-080]. Overall, there would still be a loss of agricultural land and therefore the mitigation proposals set out in the Environmental Statement remain appropriate.
- 3.4.40 There would be no change in mitigation for other matters within Chapter 13: Population and human health [APP-080], as there would be no change to the potential impacts.

Assessment of likely significant effects

- 3.4.41 There would be no change in the conclusion on significance of effects set out in section 13.20 of Chapter 13: Population and human health [APP-080] as the new design introduces no notable change in impacts on land use, accessibility or human health determinants from that previously assessed in the Environmental Statement.

Chapter 14: Road drainage and the water environment**Potential impacts**

- 3.4.42 The new design would reduce the total catchment area discharging from the mainline drainage. However, it does not result in any changes to the potential impacts reported in Section 14.9 of Environmental Statement Chapter 14: Road drainage and the water environment [APP-081].
- 3.4.43 The proposed changes to the junction 24 slip road would not significantly change impacts to the water environment or associated receptors.

Design, mitigation and enhancement measures

- 3.4.44 There is no change to the proposed mitigation reported in Section 14.10 of Chapter 14: Road drainage and the water environment [APP-081].
- 3.4.45 The water environment mitigation measures presented in Environmental Statement Chapter 14: Road drainage and the water environment are considered to remain valid, and therefore no changes to the measures presented in the Environmental Statement for potential impacts to the water environment are required.

Assessment of likely significant effects

- 3.4.46 The changes proposed would not generate any new or different likely significant effects to those already reported for the proposed scheme, and there is therefore no change to the reported residual significance of effects for the water environment reported in Section 14.11 of Chapter 14: Road drainage and the water environment [APP-081].

Chapter 15: Climate**Potential impacts**

- 3.4.47 The proposed changes to the junction 24 Inworth Road roundabout would not substantially influence the quantities of materials required to construct the proposed scheme, nor substantially affect traffic flows with the proposed

scheme in place. As such, the proposed changes would not have a material impact on the magnitude of estimated changes in greenhouse gas (GHG) emissions associated with the proposed scheme.

- 3.4.48 Furthermore, the proposed changes would not alter the vulnerability of the proposed scheme to future changes in climate.

Design, mitigation and enhancement measures

- 3.4.49 The mitigation measures presented in Environmental Statement Chapter 15: Climate [APP-082] are considered to remain valid, and therefore no changes to the measures presented in the Environmental Statement are required.

Assessment of likely significant effects

- 3.4.50 As neither emissions of GHGs nor the vulnerability of the proposed scheme to climate change are considered likely to be affected by the proposed changes, then the conclusions set out in Chapter 15: Climate [APP-082] remain unchanged.

Chapter 16: Cumulative effects assessment

Potential impacts

- 3.4.51 In accordance with Environmental Statement Chapter 16: Cumulative effects assessment [APP-083], material assets and waste and climate have been scoped out of the assessment of cumulative effects.
- 3.4.52 The remaining individual topic sections above have been reviewed in order to identify any changes to individual topic effects before then considering how any such changes may contribute to changes in cumulative effects. The findings of this review are shown in Table 3.1.

Cumulative effects

Topic	Potential for cumulative effects
Air quality	There would be no change to the air quality effects reported in Environmental Statement Chapter 6: Air quality [APP-073]. Therefore, there would be no change to the cumulative effects reported in Environmental Statement Chapter 16: Cumulative effects assessment [APP-083]
Cultural heritage	There would be no change to the cultural heritage effects reported in Environmental Statement Chapter 7: Cultural heritage [APP-074]. Therefore, there would be no change to the cumulative effects reported in Environmental Statement Chapter 16: Cumulative effects assessment [APP-083].
Landscape and visual	There would be no change to the significant effects reported in Environmental Statement Chapter 8: Landscape and visual [APP-075]. Therefore, there would be no change to the cumulative effects reported in Environmental Statement Chapter 16: Cumulative effects assessment [APP-083].
Biodiversity	There would be no change to the significant effects reported in Environmental Statement Chapter 9: Biodiversity [APP-076]. Therefore, there would be no change to the cumulative effects reported in Environmental Statement Chapter 16: Cumulative effects assessment [APP-083].

Topic	Potential for cumulative effects
Geology and soils	There would be no change to the significant effects reported in Environmental Statement Chapter 10: Geology and soils [APP-077]. Therefore, there would be no change to the cumulative effects reported in Environmental Statement Chapter 16: Cumulative effects assessment [APP-083].
Noise and vibration	There would be no change to the significant effects reported in Environmental Statement Chapter 12: Noise and vibration [APP-079]. Therefore, there would be no change to the cumulative effects reported in Environmental Statement Chapter 16: Cumulative effects assessment [APP-083].
Population and human health	There would be no change to the significant effects reported in Environmental Statement Chapter 13: Population and human health [APP-080]. Therefore, there would be no change to the cumulative effects reported in Environmental Statement Chapter 16: Cumulative effects assessment [APP-083].
Road drainage and the water environment	There would be no change to the likely significant effects reported in Environmental Statement Chapter 14: Road drainage and the water Environment [APP-081]. Therefore, there would be no change to the cumulative effects reported in Environmental Statement Chapter 16: Cumulative effects assessment [APP-083].

Design, mitigation and enhancement measures

3.4.53 No new or different cumulative effects are predicted from the new design, hence no design, mitigation and enhancement measures are required.

Assessment of likely significant effects

3.4.54 There is no change to the reported assessment of cumulative effects in Chapter 16: Cumulative effects assessment [APP-083] due to the new design.

Overall environment conclusion

3.4.55 The change in potential impacts from the removal of the junction 24 Inworth Road segregated left turn are considered negligible. The change in impacts would not be on a scale or magnitude to change the significant effects reported in the Environmental Statement. There are therefore no new or different likely significant effects arising from the new design.

4 Conclusion

- 4.1.1 The proposed removal of the segregated Left Turn Lane of the Inworth Road Roundabout originally proposed within the DCO has been assessed from an environmental perspective and the effects of construction and operation of the scheme would remain consistent with the findings presented within the relevant chapters of the Environmental Statement without materially affecting the ability of the roundabout to provide capacity for the forecasted traffic demand in the proposed scheme's design year of 2042.