

A47 Blofield to North Burlingham Dualling

Scheme Number: TR010040

Volume 6

6.1 Environmental Statement **Chapter 3 – Assessment of Alternatives**

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed
Forms and Procedure) Regulations 2009

July 2021

Deadline 1

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

A47 Blofield to North Burlingham Development Consent Order 202[x]

CHAPTER 3 ASSESSMENT OF ALTERNATIVES

Regulation Number:	Regulation 5(2)(a)
Planning Inspectorate Scheme Reference	TR010040
Application Document Reference	6.1
Author:	A47 Blofield to North Burlingham Dualling Project Team, Highways England

Version	Date	Status of Version
Rev 0	December 2020	Application Issue
Rev 1	July 2021	Deadline 1

Table of contents

3.	Assessment of alternatives	1
3.1.	Assessment methodology	1
3.2.	Reasonable alternatives studied	2
3.3.	Justification for chosen option	9

Figures

Figure 3-1: Option 1	3
Figure 3-2: Option 2	3
Figure 3-3: Option 3	3
Figure 3-4: Preferred route (Option 4)	4
Figure 3-5: Yarmouth Road junction arrangement, Option A	4
Figure 3-6: Yarmouth Road junction arrangement, Option B	5
Figure 3-7: Yarmouth Road junction arrangement, Option C	5
Figure 3-8: Yarmouth Road junction arrangement, Option D	6
Figure 3-9: Yarmouth Road junction arrangement, Option E	6
Figure 3-10: B1140 junction arrangement, Option A	7
Figure 3-11: B1140 junction arrangement, Option B	7
Figure 3-12: B1140 junction arrangement, Option C	8
Figure 3-13: B1140 junction arrangement, Option D	8
Figure 3-14: B1140 junction arrangement, Option E	9

Assessment of alternatives

Assessment methodology

- 3.1.1. The Proposed Scheme has been subject to a process of staged development and evolution. The main development stages were:
- identification of the need for the project
 - options identification
 - options selection
 - preferred route announcement (PRA)
 - post PRA design development for statutory consultation
 - continued design development post statutory consultation
- 3.1.2. In seeking to resolve the transport problem between Blofield and North Burlingham ((further detail on issues provided in chapter 2 The Proposed Scheme (**TR010040/APP/6.1**)), eight potential options were developed. These were assessed to identify their performance against safety, environmental, engineering, transportation and economic criteria so that they could be compared and contrasted. These options can be reviewed in the Scheme Assessment Report¹.
- 3.1.3. Four of the eight options were taken forward for more detailed assessment and non-statutory public consultation:
- Option 1: online dualling of the existing A47
 - Option 2: offline dualling to the north and to the south of the A47
 - Option 3: offline dualling to the south of the existing A47
 - Option 4: offline dualling to the south running near and predominantly parallel to the existing A47
- 3.1.1. The full details of scoring is reported in the Scheme Assessment Report (2017) and available on the Highways England website:
<https://highwaysengland.citizenspace.com/he/a47-blofield-to-north-burlingham-dualling/results/a47blofieldtonorthburlinghama47sarimps2-ame-bb-zz-do-i00061.pdf>

¹ <https://highwaysengland.citizenspace.com/he/a47-blofield-to-north-burlingham-dualling/results/a47blofieldtonorthburlinghama47sarimps2-ame-bb-zz-do-i00061.pdf>

3.1.2. Two junction locations were identified and designed in outline prior to the preferred route announcement:

- **Yarmouth Road Junction**

The design was to include the following provisions:

- Closing the gap in the central reserve to prevent right-turn movements, for road safety reasons
- Retaining access from Yarmouth Road to the A47 westbound
- Closing the existing access from the A47 toward High Noon Lane

- **B1140 Junction**

The junction with the B1140 is to replace the existing at-grade junction between the A47 and the B1140 South Walsham Road / White House Lane.

Reasonable alternatives studied

Route options

3.1.3. All four options resolved the transport problem; in that they would allow for a safer, swifter movement of traffic along the route corridor. Figures 3-1 to 3-4 are shown together overleaf to facilitate the reader comparing the options.

3.1.4. All options had two main junctions situated on the A47 and a new local access link road would be created to the north of the newly dualled A47.

3.1.5. For options 2 to 4, the existing A47 would become part of the local road network where it is not directly impacted by the new dual carriageway.

Option 1

3.1.6. This option, shown in Figure 0-1, proposed improving the existing single carriageway section by constructing a new section of online dual carriageway with junction improvements.

Option 2

3.1.7. This option, shown in Figure 0-2, comprised an offline dualling to the north of Blofield and south of North Burlingham with junction improvements.

Option 3

3.1.8. This option, shown in Figure 0-3, comprised offline dualling to the south of the existing A47.

Option 4

3.1.9. This option, shown in Figure 0-4, comprised offline dualling to the south with the new section of offline dual carriageway closely follows the existing alignment, running parallel to the existing A47.

Figure 0-1:
Option 1

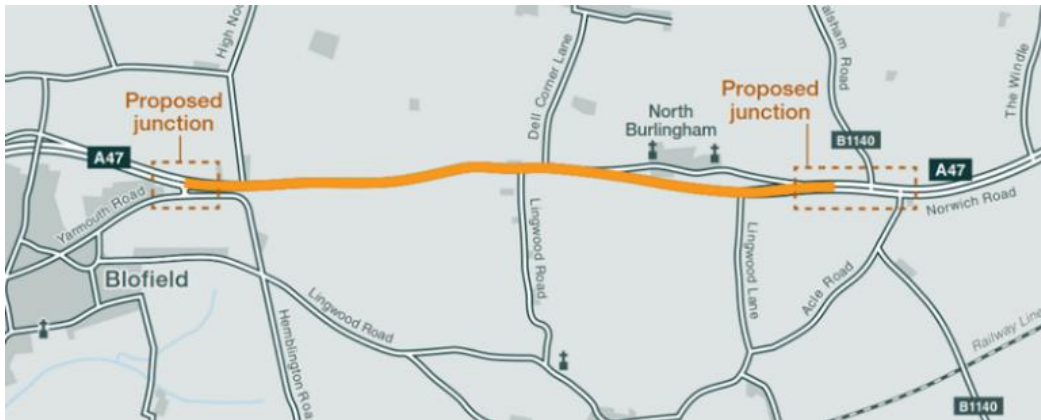


Figure 0-2:
Option 2

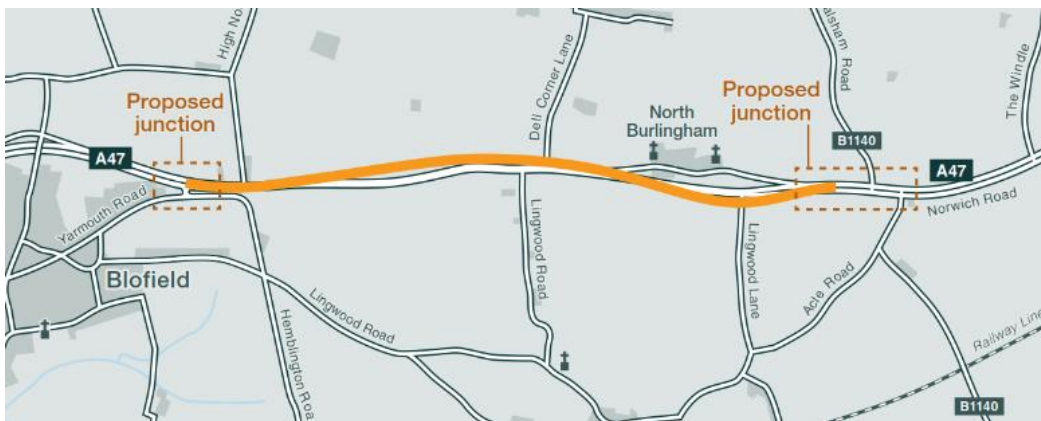


Figure 0-3:
Option 3

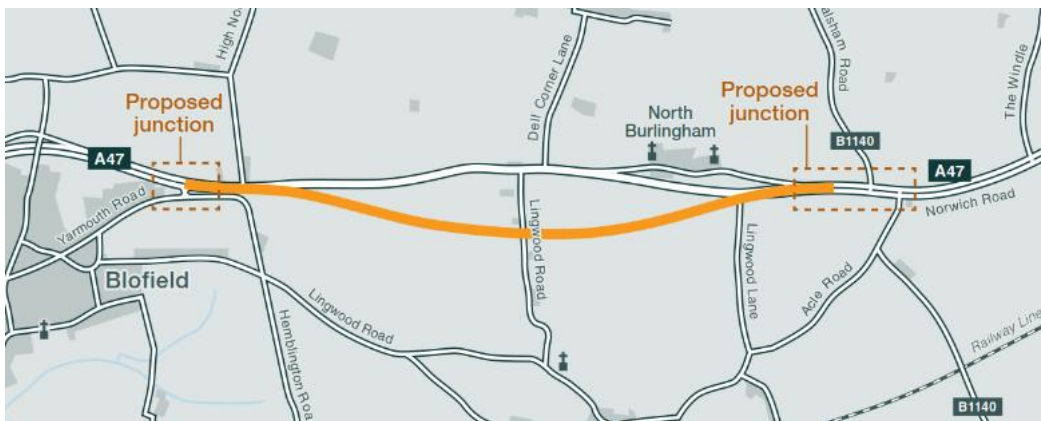
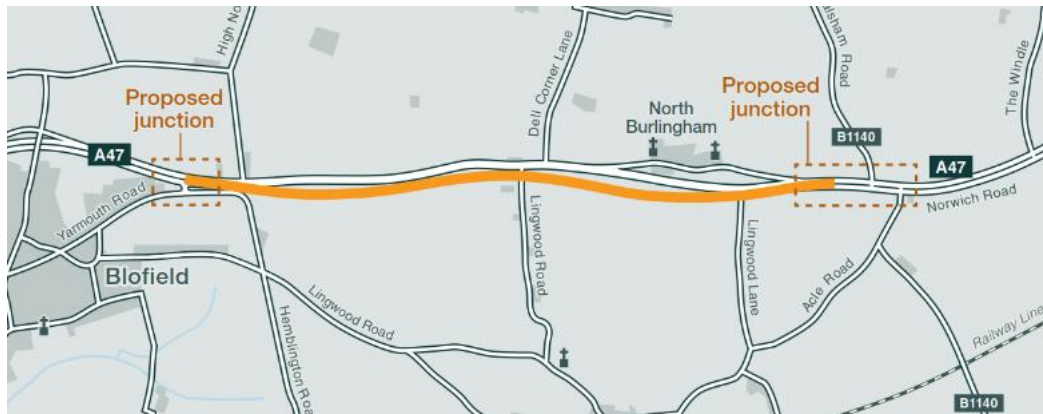


Figure 0-4:
Preferred
route
(Option 4)



Junction options

Yarmouth Road Junction

- 3.1.10. Five options (A to E) were considered as described in the Scheme Design Report (TR010040/APP/7.6).
- 3.1.11. Junction Option A (Figure 0-5) proposed an amendment of the existing junction with Yarmouth Road to a left in, left out arrangement. In order to connect to Yarmouth Road north of the re-aligned A47, an overbridge or underbridge will be provided.

Figure 0-5: Yarmouth Road junction arrangement, Option A



- 3.1.12. Junction Option B (Figure 0-6) proposed a grade separated junction with an off-line connector road to Yarmouth Road. Connectivity to the existing A47 would be maintained.

Figure 0-6: Yarmouth Road junction arrangement, Option B



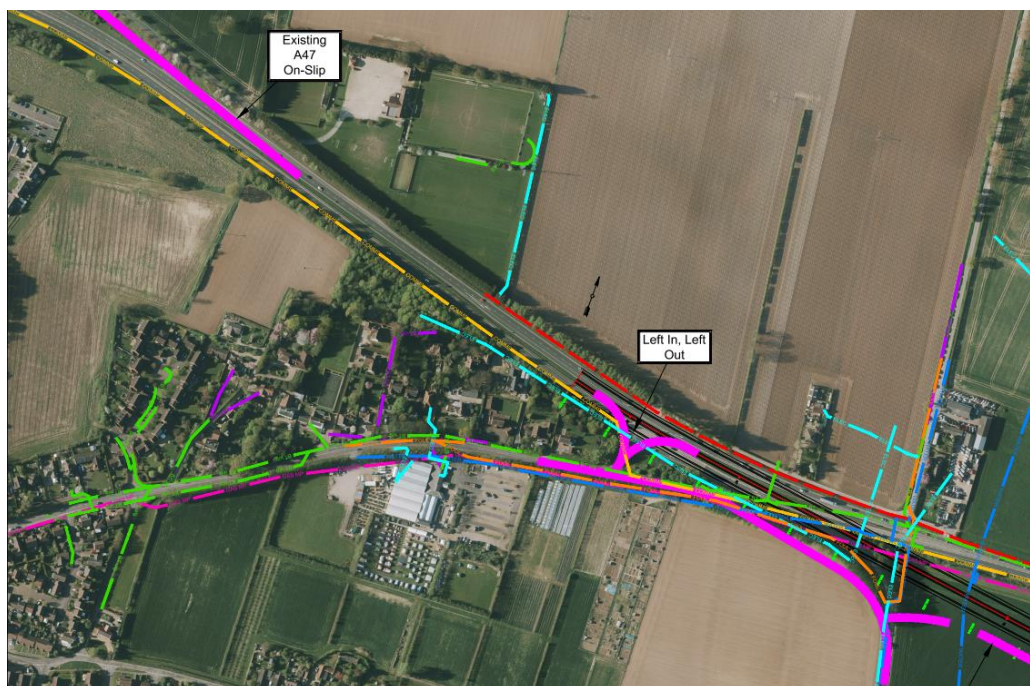
- 3.1.13. Junction Option C (Figure 0-7) proposed a compact grade separated junction, with left in, left out connections onto the proposed A47. The existing A47 will be re-aligned to connect into a northern roundabout, with Yarmouth Road realigned to connection into a southern roundabout.

Figure 0-7: Yarmouth Road junction arrangement, Option C



- 3.1.14. Junction Option D (Figure 0-8) proposed upgrading the existing eastbound slip-road north of Blofield from Plantation Road. The existing left-in, left-out junction which connects Yarmouth Road to the existing A47 would also be upgraded to improve safety. No structure to connect Yarmouth Road to the existing A47 would be provided.

Figure 0-8: Yarmouth Road junction arrangement, Option D



3.1.15. Junction Option E (Figure 0-9) maintains the existing Yarmouth Road junction arrangement and provides new off-line connectivity from Yarmouth Road to Waterlow to take account of the new alignment of the proposed A47.

Figure 0-9: Yarmouth Road junction arrangement, Option E



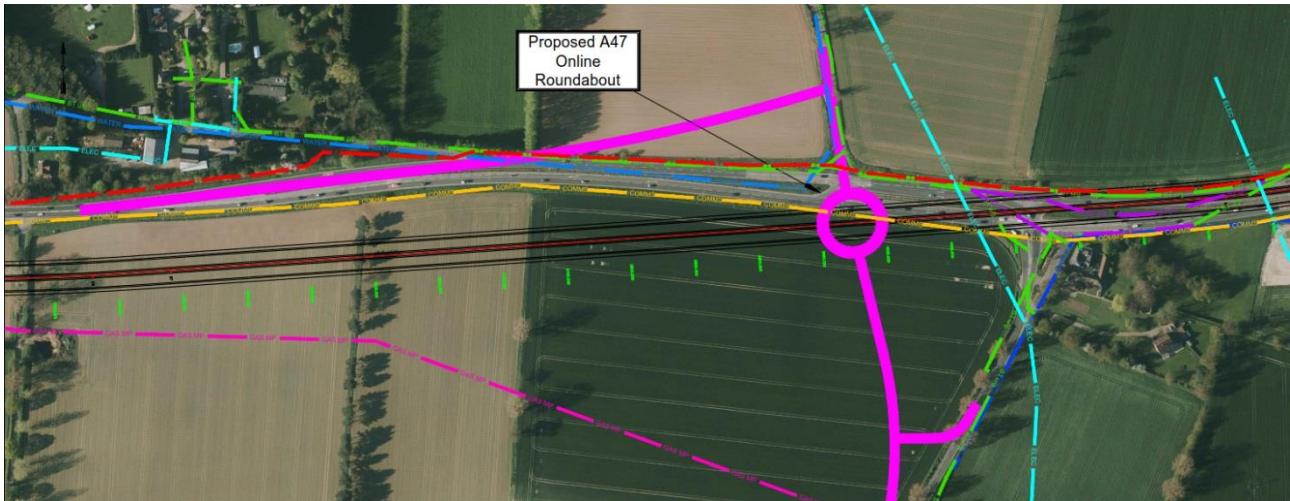
B1140 Junction

3.1.16. Five options (A to E) were considered as described in the Scheme Design Report (TR010040/APP/7.6).

3.1.17. Junction Option A (Figure 0-10) consists of an online roundabout with connectivity provided to the existing A47 via a major/minor priority T-Junction on

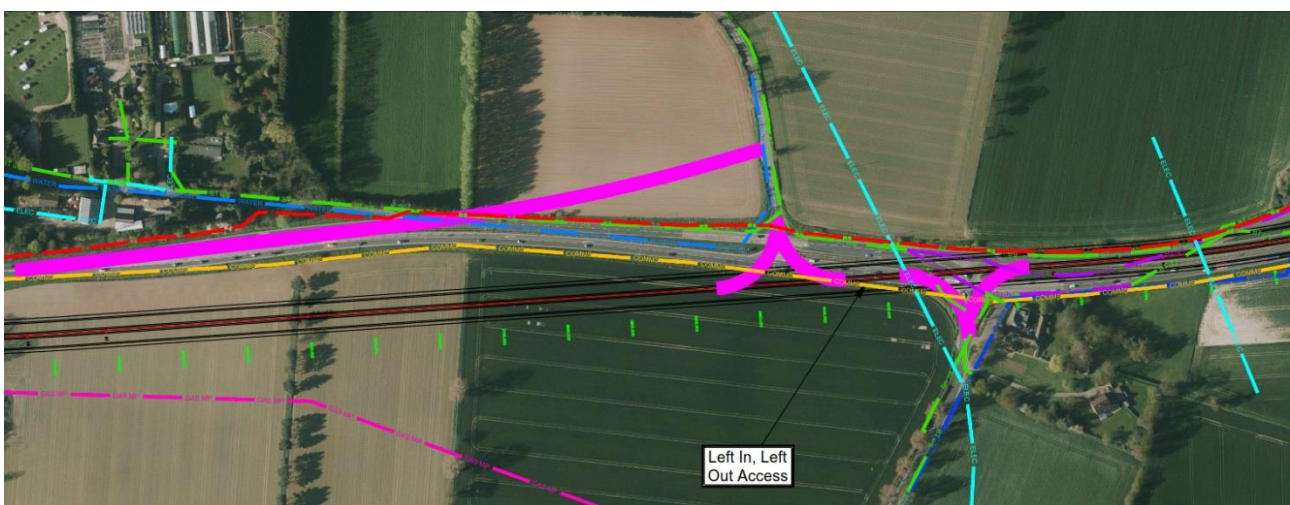
South Walsham Road (the B1140). Both a two lane and a three lane circulatory were considered for this option. White House Lane would be realigned to the west with a major/ minor priority junction added to provide local residential access.

Figure 0-10: B1140 junction arrangement, Option A



3.1.18. Junction Option B (Figure 0-11) involves an offline connection from the existing A47 to South Walsham Road. Left in, left out junctions are proposed both north and south of the realigned A47 to the existing South Walsham Road and White House Lane. This junction option would not allow north-south movement and would require a significant diversion of traffic utilising the local road network to access the A47 either at the proposed Yarmouth Road Junction or the existing White House Lane junction.

Figure 0-11: B1140 junction arrangement, Option B



3.1.19. Junction Option C (Figure 0-12) is a grade separated junction, which would be constructed at a later point after an at-grade roundabout is provided as part of the

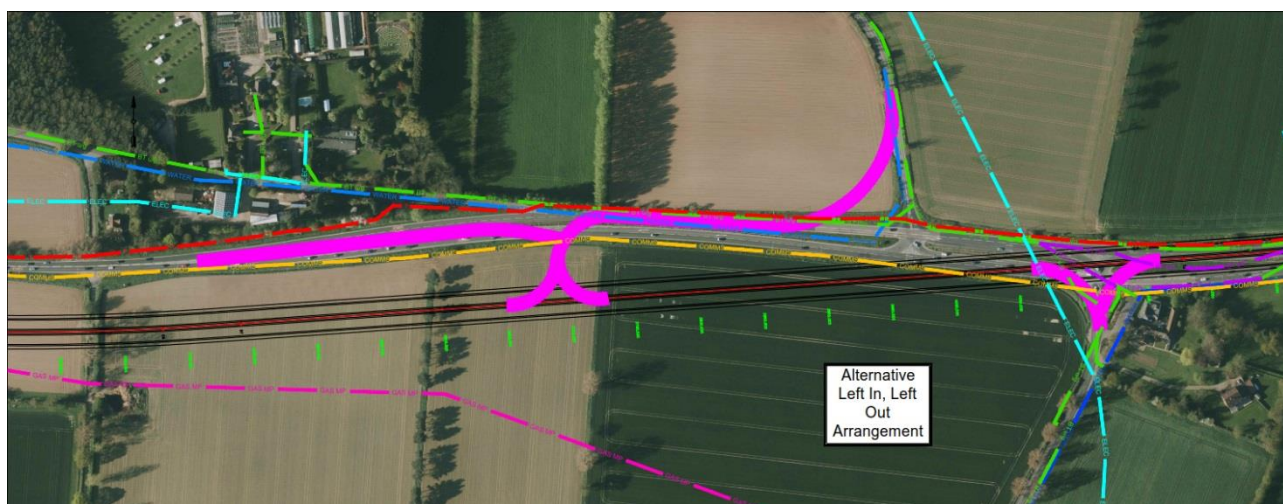
proposed scheme. The existing A47 would be linked to South Walsham Road via a major/minor priority junction. A new link would be provided south to connect to the B1140 (White House Lane) with a new major/minor priority junction to provide residential access to the remaining northern section of the existing White House Lane.

Figure 0-12: B1140 junction arrangement, Option C



3.1.20. Junction Option D (Figure 0-13) realigns the existing A47 to provide a new left in, left out junction, with additional realignment to tie into South Walsham Road (the B1140). The existing southern junction at the B1140 will be altered to only allow left in / left out movements.

Figure 0-13: B1140 junction arrangement, Option D



3.1.21. Junction Option E (Figure 0-14) provides a compact grade-separated junction. The existing A47 will be realigned north to tie into South Walsham Road (the B1140). White House Lane (the B1140) would also be realigned to tie into the alignment with a major / minor priority junction.

Figure 0-14: B1140 junction arrangement, Option E



Justification for chosen option

Preferred route option

- 3.1.22. From the options assessed and consulted upon as described in the Case for the Scheme (TR010040/APP/7.1) and the Scheme Design Report (TR010040/APP/7.6), a preferred route was selected. It is considered that the preferred option has the least impact on the environment and can be built with the least disruption to drivers during construction as the existing road can remain for local traffic.
- 3.1.23. This is also the shortest option, which has a positive correlation to operational emissions from vehicle users.

Junctions options

Yarmouth Road junction

- 3.1.24. Following consideration, Option A was adopted for the Yarmouth Road Junction. The proposed configuration provides the following benefits:
- improved diverge lane to make leaving the A47 safer for road users
 - additional merge taper and auxiliary lane to make joining the A47 safer for road users
 - elimination of a flat area of carriageway removing a drainage issue
 - safer access to fields and private properties via the retained A47 and the agricultural access track
 - smaller carbon footprint compared with larger junction options
 - mitigates existing east-west community severance
 - retains a westbound left in, left out junction
 - avoids permanent land take from residential property

- 3.1.25. Options B and C were discounted due to the additional cost of the grade separated options against an at-grade option against the very low use of the junction predicted by the strategic traffic model in the Transport Assessment (TR010040/APP/7.3) meaning the options presented poor value for money.
- 3.1.26. Option D was discounted due to the severance impacts for east-west travel between local communities. The provision of a structure connecting Yarmouth Road to the existing A47 was recognised as a key mitigation to this and provides a significant benefit relative to the existing situation.
- 3.1.27. Option E was discounted on safety grounds and due to the severance impacts for east-west travel between local communities. Despite retaining the existing junction arrangement, the increased volume of traffic generated by the Proposed Scheme and forecast due to underlying future growth would worsen the existing severance as well as the road safety risk of severe accidents due to traffic crossing the carriageway to turn right. As with Option D, the provision of a structure connecting Yarmouth Road to the existing A47 was recognised as a key mitigation to this and provides a significant benefit relative to the existing situation.

B1140 Junction

- 3.1.28. Following consideration, Option E was adopted for the B1140 Junction.
- 3.1.29. Option E has a reduced carbon footprint than larger full grade separated junction. Based on the traffic flows and existing constraints, it was decided to proceed with a compact grade separated junction arrangement as per Option E. This arrangement was chosen as it provides the grade separation for north-south traffic while still providing connectivity to the local road network from the proposed A47. This option is the lowest cost viable option which provides sufficient capacity whilst addressing the potential safety and severance impacts of other options.
- 3.1.30. Option A, was discounted due to being insufficient to accommodate the forecast traffic flow with two lanes. A three lane circulatory was trialled and found to have sufficient capacity but considered likely to be difficult for users, incur driver stress increasing the likelihood of accidents. Following consideration, this arrangement was deemed unsuitable and therefore removed from consideration.
- 3.1.31. Option C, which would make use of an at-grade roundabout which would then be upgraded to a grade-separated arrangement at a later date was dismissed. The at-grade roundabout would have similar difficulties to Option A, and the reliance on additional future funding would create difficulties in funding, governance and planning. This option was removed from consideration.

Options B and D were discounted as they create a significant severance issue for traffic, which would use the existing junction to travel north-south.