



# **Norwich Western Link**

## **Environmental Statement**

### **Chapter 4: Reasonable Alternatives Considered**

#### **Appendix 4.2: OAR Discounted Options and Main Reasoning**

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# 1 Discounted options and main reasoning at OAR

1.1.1 The table below presents the Options considered in the 2018 Options Assessment Report (OAR) and the main reasons for discounting them at the OAR stage.

**Table 1-1 2018 OAR Options and Main Reasons for discounting**

Option and Description	Main Reasoning
Option 1: A1067 Attlebridge to A47 west of Honingham; 2014 Purple (1A), single carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 3: A1067 Attlebridge to A47 west of Honingham; 2014 Purple (2A), single carriageway	Discounted on the basis that the dual carriageway variation will produce the most robust assessment in terms of potential land take, costing and environmental concerns. The single carriageway variation of shortlisted options may be reinstated during later appraisal stages, if necessary. (Single Carriageway and Dual carriageway options were subsequently modelled for the shortlisted routes and all but Option A (Option 75) were shown to require the additional capacity offered by dualling in the 2040 forecast year).

<b>Option and Description</b>	<b>Main Reasoning</b>
Option 4: A1067 Attlebridge to A47 west of Honingham; 2014 Purple (2A), dual carriageway	Discounted as it did not perform as well as the competing new highway link options. Compared with Option 2, Option 4 crosses the strategic gas main and intersects a County Wildlife Site on two separate occasions.
Option 5: A1067 Attlebridge to A47 west of Easton; 2014 Brown, single carriageway	Discounted on the basis that the dual carriageway variation will produce the most robust assessment in terms of potential land take, costing and environmental concerns. The single carriageway variation of shortlisted options may be reinstated during later appraisal stages, if necessary (Single Carriageway and Dual carriageway options were subsequently modelled for the shortlisted routes and all but Option A (Option 75) were shown to require the additional capacity offered by dualling in the 2040 forecast year).
Option 6: A1067 Attlebridge to A47 west of Easton; 2014 Brown, dual carriageway	Discounted as it did not perform as well as the competing new highway link options. This related to the alignment running adjacent to the extra high voltage pylons for the longest distance, which would impact upon feasibility and scheme cost and add risk with construction in close proximity to such infrastructure. Option 6 also has the biggest impact on County Wildlife Sites, severing a large County Wildlife Site in two.

<b>Option and Description</b>	<b>Main Reasoning</b>
<p>Option 7: A1067 (west of A1067 / A1270 junction) to A47 west of Easton; 2014 Red, single carriageway</p>	<p>Discounted on the basis that the dual carriageway variation will produce the most robust assessment in terms of potential land take, costing and environmental concerns. The single carriageway variation of shortlisted options may be reinstated during later appraisal stages, if necessary (Single Carriageway and Dual carriageway options were subsequently modelled for the shortlisted routes and all but Option A (Option 75) were shown to require the additional capacity offered by dualling in the 2040 forecast year).</p>
<p>Option 9: A1067 (east of A1067 / A1270 junction) to A47 west of Easton; 2014 Blue (1), single carriageway</p>	<p>Discounted on the basis that the dual carriageway variation will produce the most robust assessment in terms of potential land take, costing and environmental concerns. The single carriageway variation of shortlisted options may be reinstated during later appraisal stages, if necessary (Single Carriageway and Dual carriageway options were subsequently modelled for the shortlisted routes and all but Option A (Option 75) were shown to require the additional capacity offered by dualling in the 2040 forecast year).</p>

<b>Option and Description</b>	<b>Main Reasoning</b>
<p>Option 10: A1067 (east of A1067 / A1270 junction) to A47 west of Easton; 2014 Blue (1), dual carriageway</p>	<p>Discounted as it did not perform as well as the competing new highway link options. This was due to challenging levels resulting in high costs associated with the proposed River Wensum crossing. The alignment also runs adjacent to the River Wensum for a significant distance, increasing risk and the potential for pollution. Option 10 would also impact upon the Wensum Valley Hotel, Golf and Country Club resulting in a significant commercial impact.</p>
<p>Option 11: A1067 / A1270 junction to A47 west of Easton; 2014 Blue (2), single carriageway</p>	<p>Discounted on the basis that the dual carriageway variation will produce the most robust assessment in terms of potential land take, costing and environmental concerns. The single carriageway variation of shortlisted options may be reinstated during later appraisal stages, if necessary (Single Carriageway and Dual carriageway options were subsequently modelled for the shortlisted routes and all but Option A (Option 75) were shown to require the additional capacity offered by dualling in the 2040 forecast year).</p>

<b>Option and Description</b>	<b>Main Reasoning</b>
Option 12: A1067 / A1270 junction to A47 west of Easton; 2014 Blue (2), dual carriageway	Discounted as it did not perform as well as the competing new highway link options. This was due to challenging levels resulting in high costs associated with the proposed River Wensum crossing. The alignment also runs adjacent to the River Wensum for a significant distance, increasing risk and the potential for pollution. Option 12 would also impact upon the Wensum Valley Hotel, Golf and Country Club resulting in a significant commercial impact.
Option 13: A1067 (east of A1067 / A1270 junction) to A47 / A1074 Longwater interchange; 2014 Orange (1), single carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 14: A1067 (east of A1067 / A1270 junction) to A47 / A1074 Longwater interchange; 2014 Orange (1), dual carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 15: A1067 / A1270 junction to A47 / A1074 Longwater interchange; 2014 Orange (2), single carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.

<b>Option and Description</b>	<b>Main Reasoning</b>
<p>Option 16: A1067 / A1270 junction to A47 / A1074 Longwater interchange; 2014 Orange (2), dual carriageway</p>	<p>Discounted as it did not perform as well as the competing new highway link options. This was due to concerns related to the alignment running adjacent to the River Wensum for a significant distance, increasing risk and the potential for pollution. Potential significant commercial impact is also associated with route running through the Wensum Valley Hotel, Golf and Country Club and the impact upon Ancient Woodland. Option 16 also connects to the A47 at the Longwater Interchange, which may exacerbate existing issues.</p>
<p>Option 17: A1067 (east of A1067 / A1270 junction) to A47 / A1074 Longwater interchange; 2014 Orange (3), single carriageway</p>	<p>Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.</p>
<p>Option 18: A1067 (east of A1067 / A1270 junction) to A47 / A1074 Longwater interchange; 2014 Orange (3), dual carriageway</p>	<p>Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.</p>



<b>Option and Description</b>	<b>Main Reasoning</b>
Option 19: A1067 / A1270 junction to A47 / A1074 Longwater interchange; 2014 Orange (4), single carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 20: A1067 / A1270 junction to A47 / A1074 Longwater interchange; 2014 Orange (4), dual carriageway	Discounted as it did not perform as well as the competing new highway link options. This was due to concerns related to the alignment running adjacent to the River Wensum for a significant distance, increasing risk and the potential for pollution. Potential significant commercial impact is also associated with route running through the Wensum Valley Hotel, Golf and Country Club. Option 20 also connects to the A47 at the Longwater Interchange, which may exacerbate existing issues.
Option 21: A1067 (east of A1067 / A1270 junction) to A1074 east of Longwater; 2014 Orange (5), single carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 22: A1067 (east of A1067 / A1270 junction) to A1074 east of Longwater; 2014 Orange (5), dual carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.

<b>Option and Description</b>	<b>Main Reasoning</b>
Option 23: A1067 / A1270 junction to A1074 east of Longwater; 2014 Orange (6), single carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 24: A1067 / A1270 junction to A1074 east of Longwater; 2014 Orange (6), dual carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 25: A140 / A1270 junction to A1074 east of Longwater; 2014 Green, single carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 26: A140 / A1270 junction to A1074 east of Longwater; 2014 Green, dual carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 27: North Tuddenham via Attlebridge; 2018 Road Alignment (1), single carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.

<b>Option and Description</b>	<b>Main Reasoning</b>
Option 28: North Tuddenham via Attlebridge; 2018 Road Alignment (1), dual carriageway	Discounted as it did not perform as well as the competing new highway link options. This was due to the alignment length and intersection with the A47 west of Hockering, which does not align with the Highways England A47 RIS scheme. Compared with option alignments further east it would attract fewer trips, therefore Option 28 would be less likely to support the scheme objectives, gain public support and deliver an acceptable Benefit to Cost Ratio.
Option 29: A47 Honingham to Attlebridge (1); 2018 Road Alignment (2), single carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 30: A47 Honingham to Attlebridge (1); 2018 Road Alignment (2), dual carriageway	Discounted as it did not perform as well as the competing new highway link options. This was due to passing close to settlements and within proximity to many farm buildings, therefore affecting more properties. The alignment also runs directly underneath the extra high voltage pylons, which would impact upon feasibility and scheme cost and add risk with construction. The proximity to Wood Lane near the junction with The Broadway is also likely to result in severance of the road network and directly impact upon farms and the connectivity between dwellings and land.

<b>Option and Description</b>	<b>Main Reasoning</b>
Option 31: A47 to Attlebridge (2), 2018 Road Alignment (3), single carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 32: A47 to Attlebridge (2), 2018 Road Alignment (3), dual carriageway	Discounted as it did not perform as well as the competing new highway link options. Option 32 would also cross the strategic gas main at two separate locations significantly increasing risk and potential cost.
Option 33: A47 Easton to A1067 / A1270 junction; 2018 Road Alignment (4), single carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 34: A47 Easton to A1067 / A1270 junction; 2018 Road Alignment (4), dual carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 35: A47 Easton to A1067 / A1270 junction; 2018 Road Alignment (5), single carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 36: A47 Easton to A1067 / A1270 junction; 2018 Road Alignment (5), dual carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.

<b>Option and Description</b>	<b>Main Reasoning</b>
Option 37: Tolled routes / bridges	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 38: Improvements to existing routes	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 42: Speed limit changes	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 43: Directional traffic management schemes	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 45: New wider footpath	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 46: New cycling links to key facilities and services	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 47: Cycle parking facilities	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.

<b>Option and Description</b>	<b>Main Reasoning</b>
Option 48: New orbital bus route	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 51: Improved public transport information: real-time app	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 52: Improved public transport information: real-time information at stops	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 53: Update the digital road map	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 54: Develop local cycling and walking infrastructure plan	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 56: Develop green lung schemes	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 57: Bike-on-bus schemes	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.

<b>Option and Description</b>	<b>Main Reasoning</b>
Option 59: Light rail	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 60: Very light rail	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 61: Offline busway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 62: New orbital rail line	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 63: Inner ring road widening	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 64: Provision of sprint services: A47 / A1074	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 65: Provision of sprint services: A1067 corridor	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.



<b>Option and Description</b>	<b>Main Reasoning</b>
Option 66: Provision of a sustainable urban distribution centre	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 67: Provision of improved freight route intelligence	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 69: Purple line (2018 public consultation), single carriageway	Discounted on the basis that the dual carriageway variation will produce the most robust assessment in terms of potential land take, costing and environmental concerns. The single carriageway variation of shortlisted options may be reinstated during later appraisal stages, if necessary (Single Carriageway and Dual carriageway options were subsequently modelled for the shortlisted routes and all but Option A (Option 75) were shown to require the additional capacity offered by dualling in the 2040 forecast year).





<b>Option and Description</b>	<b>Main Reasoning</b>
Option 70: Purple line (2018 public consultation), dual carriageway	Discounted as it did not perform as well as the competing new highway link options. Alignment crosses the strategic gas main and the Orsted cable route at their intersection which would likely result in significant cost and risk. Option 70 is also reliant on an existing stretch of Taverham Road between residential properties and near listed buildings, which would have significant commercial implications.
Option 71: Blue line (2018 public consultation), single carriageway	Discounted on the basis that the dual carriageway variation will produce the most robust assessment in terms of potential land take, costing and environmental concerns. The single carriageway variation of shortlisted options may be reinstated during later appraisal stages, if necessary (Single Carriageway and Dual carriageway options were subsequently modelled for the shortlisted routes and all but Option A (Option 75) were shown to require the additional capacity offered by dualling in the 2040 forecast year).

<b>Option and Description</b>	<b>Main Reasoning</b>
Option 72: Blue line (2018 public consultation), dual carriageway	Discounted as it did not perform as well as the competing new highway link options. Compared with Option 8, Option 72 is longer in length (by approximately 600m) and runs adjacent to the Orsted cable route for a significant length, which would increase cost and risk. Option 72 also had a more significant topographical variation over its entire length which would again increase risk and cost.
Option 73: Relay Fakenham to Norwich rail line	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 76: Black line (2018 public consultation), existing route, dual carriageway	Discounted due to consideration of the consistency of the existing highway network.
Option 77: Outer ring road widening	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.

<b>Option and Description</b>	<b>Main Reasoning</b>
Option 79: Pink line (2018), single carriageway	Discounted on the basis that the dual carriageway variation will produce the most robust assessment in terms of potential land take, costing and environmental concerns. The single carriageway variation of shortlisted options may be reinstated during later appraisal stages, if necessary (Single Carriageway and Dual carriageway options were subsequently modelled for the shortlisted routes and all but Option A (Option 75) were shown to require the additional capacity offered by dualling in the 2040 forecast year).
Option 81: Yellow line (2018), single carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.
Option 82: Yellow line (2018), dual carriageway	Discounted based on the overall performance against the “Do Nothing” option, and therefore does not offer good value for money.