A47 BLOFIELD TO NORTH BURLINGHAM DUALLING – SUMMARY

Representations on behalf of Burlingham Cottage Gardens Association

create
CONSULTING
ENGINEERS LTD

APPLICATION BY HIGHWAYS ENGLAND FOR AN ORDER GRANTING DEVELOPMENT CONSENT FOR THE A47 BLOFIELD TO NORTH BURLINGHAM DUALLING

Reference TR010040

Representations on behalf of Burlingham Cottage Gardens Association. Burlingham, Norfolk

Summary Proof

Client: Burlingham Cottage Gardens Association

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Report By: Jonathan Cage BEng Hons MSc CEng MICE MCIHT

Reference: JPC/CS/E21-067/02

Date: July 2021

A47 BLOFIELD TO NORTH BURLINGHAM DUALLING - SUMMARY
Representations on behalf of Burlingham Cottage Gardens Association

1.0 SUMMARY

1.1 I am Jonathan Paul Cage, a Chartered Civil Engineer with over 31 years of experience providing expert advice on highway design projects. I am Managing Director of Create Consulting Engineers Ltd who are an award winning multi-disciplinary civil, structural, and environmental engineering consultancy with offices in Norwich, London, Glasgow, Milton Keynes and Chelmsford. I have extensive experience in the preparation and design of Highway Schemes and Active Travel Corridors, throughout the UK. I am also a resident of South Walsham and currently travel the route the subject of the DCO Inquiry daily.

1.2 I have been instructed by Chris Gates of Burlingham Cottage Gardens Association (BCGA) to act as an expert witness in relation to their concerns in relation to the impact that the proposed A47 Blofield to North Burlingham Dualling Scheme will have on the life choices, sustainability and general health and wellbeing of the residents of all ages of North Burlingham and the surrounding villages. These representations are also supported by Burlingham and Lingwood Parish Council and Hemblington Parish Council.

1.3 BCGA are generally in support of the dualling of this section of the A47 which in most people's eyes is now well overdue being provided. Their main concern however is that the existing A47 has created a distinct barrier between the villages to the north and south of the route for several years, especially for residents wishing to travel between the villages on foot or on bike. The village is also not connected for pedestrian and cycling to the east to the main Market Town Acle. It is these two areas which these representations will focus on.

1.4 Many of the villages are cut off from services such as catchment schools, shops, leisure facilities, employment opportunities, local and regional travel such as bus and rail services due to the A47T. The introduction of the new A47 Dualling in this area mainly offline should provide an excellent opportunity to solve a number of these existing issues, however the scheme which has been presented to this Inquiry falls short especially in relation to north south pedestrian and cycling connections and links to the east towards Acle.

1.5 We believe that the introduction of an Active Travel Underbridge as well as an Active Travel Corridor extension to the east connecting Acle with Burlingham will make a major difference to the health and wellbeing of the residents within the Lingwood and Burlingham Parish.

1.6 We believe that these measures are deliverable and if integrated into the scheme design now, will provide a good return on investment. Not only in terms of facilitating the shared use of facilities between villages but providing a strategic cycling link which could then be interconnected into the National Cycle Network which would help connect the Norfolk Broads to the villages to the south of the A47 and further south of the River Yare.

1.7 These relatively small improvements we believe could be readily incorporated into the scheme, without detrimentally impacting on the proposed delivery programme of the overall project or the outcome of this DCO Inquiry process.

1.8 We have outlined what we believe could be a typical programme for developing the outline design further, along with an initial budget cost for the proposed changes.

1.9 The representation will show that the introduction of our proposed changes to the scheme will provide a range of opportunities for residents in the area to integrate socially, to share services, and facilities and generally improve social mobility.

1.10 With the above points in mind, I respectfully request that the Inspector takes on board the above points and requests that Highways England and its consultants rapidly review their design proposals and incorporate both the Underbridge and the Eastern Link to Acle.

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Revision and Date	Amendment Details	Revision Prepared By	Revision Approved By

1.0 INTRODUCTION

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1.3 BCGA are generally in support of the dualling of this section of the A47 which, in most people's eyes, is now well overdue being provided. Their main concern however is that the existing A47 has created a distinct barrier between the villages to the north and south of the route for several years, especially for residents wishing to travel between the villages on foot or on bike. The village is also not connected for pedestrian and cycling to the east to the main Market Town Acle. It is these two areas which these representations will focus on.

1.4 The first section of the representations will focus on the current issues and explain how they have prevented the sustainable integration of the villages such as North Burlingham, Lingwood, Hemblington, South Walsham and Upton. Many of the villages are cut off from services such as catchment schools, shops, leisure facilities, employment opportunities, local and regional travel such as bus and rail services.

1.5 The introduction of the new A47 Dualling in this area mainly offline should provide an excellent opportunity to solve a number of these existing issues, however the scheme which has been presented to this Inquiry falls short especially in relation to north south pedestrian and cycling connections and links to the east towards Acle.

1.6 The representations will then outline some proposed changes which we believe should be incorporated into the scheme. We believe that these are deliverable and, if integrated into the scheme design now, will provide a good return on investment. Not only in terms of facilitating the shared use of facilities between villages but providing a strategic cycling link which could then be interconnected into the National Cycle Network which would help connect the Norfolk Broads to the villages to the south of the A47 and further south of the River Yare.

1.7 These relatively small improvements we believe could be readily incorporated into the scheme, without detrimentally impacting on the proposed delivery programme of the overall project or the outcome of this DCO Inquiry process. We have outlined what we believe could be a typical programme for developing the outline design further, along with an initial budget cost for the proposed changes.

1.8 The representation will show that the introduction of our proposed changes to the scheme will provide a range of opportunities for residents in the area to integrate socially, to share services and facilities and generally improve social mobility.

2.0 BARRIER TO SUSTAINABLE TRAVEL

2.1 The A47T runs east west through the county of Norfolk linking the port of Great Yarmouth on the eastern coast with Peterborough and the Midlands to the west. It is an important strategic highway route which is heavily used by Freight users, holiday traffic and general residents and businesses within the County of Norfolk.

2.2 The Blofield to Burlingham section of the A47T is a single carriageway section of the route, which is subject to a 50 mph speed limit mainly for safety reasons. This section of the A47T is often completely saturated and due to the funnelling effect of traffic having to merge from a dual carriageway into a single carriageway, there are often long queues at both the eastern and western approaches to the single carriageway section. As a result, in busy periods there is often a continuous stream of traffic flowing along this section of the A47T with very few breaks in the traffic, making it very difficult to either cross or gain access to the road.

2.3 There have been several fatalities along this section of the A47T and it has been recognised by Highways England (HE) and Norfolk County Council (NCC) that this section of the A47T has required upgrading for a number of years. Therefore, when HE announced funding commitments for three significant upgrades of the A47T in the Norwich Area including North Tuddenham to Dereham, Thickthorn Interchange and the Blofield to Burlingham Dualling, it was the Blofield to Burlingham Dualling which was given priority in terms of delivery. The scheme is intended to start in January- March 2022-23 and be completed by 2024-25 with an estimated budget of between £50m - £100million.

Vehicular Access

2.4 The A47T has physically split the parish of Burlingham and Lingwood for years. With the ever-increasing number of vehicles using the route it has become almost impossible to cross the road by vehicle, on foot or bike in busy periods, which causes significant issues with access to schooling and local services for the residents of Burlingham. The barrier effect however has a much wider impact than just on these two villages. Any vehicles wishing to cross the A47T in this area would have to negotiate at grade crossings; none of them having deceleration/ acceleration lanes and many requiring crossing of a central reservation.

HGV Access\Sugar Beet

2.5 The main junction in the centre of this scheme is where the B1140 South Walsham Road crosses the A47T and is currently the primary route for sugar beet wagons from the farms to the north of the A47T and all round the Broads to gain access to the British Sugar Factory at Cantley. During campaigns there can be at times almost back-to-back sugar beet wagons passing through this junction trying to cross the A47T and the central reservation. Whilst the crossing is in a 50mph section, the size and weight of these vehicles make it impossible for

them to pull out at speed and therefore there is a real risk of serious accidents occurring in this location.

2.6 The area to the north of the A47T is predominantly agricultural and therefore the B1140 is often used by a wide range of large and slow-moving agricultural vehicles, whether it be farm machinery itself or 44 tonne sugar beet vehicles used to take the crops off to processing or market.

2.7 The nearest grade separated crossing points are the substandard junction arrangements at Blofield Heath or even further to the west at Cucumber Lane roundabout or to the east at Acle. This results in vehicles often taking a considerable detour just to be able to access the A47T safely, adding to increased vehicle mileage and congestion, along with traffic travelling through interconnecting villages such as South Walsham, Panxworth and the town centre of Acle.

Pedestrian and Cycleway Links

2.8 With respect to existing pedestrian and cycling crossing points there are no formal crossing points anywhere on the section between Blofield Heath and Acle, even though there are several footpaths which link up to the A47 including Burlingham FP1 and Burlingham FP3. See Appendix A for Existing Footway and Bridleway Routes in the area. There is no formal footpath/cycleway link between North Burlingham and its current catchment primary school in Lingwood, and no footpath cycleway link to the catchment secondary school in Acle.

2.9 In my view I do not believe that there are any safe pedestrian and cycling crossing facilities anywhere along this section of the trunk road.

Access to Public Transport

2.10 At present North Burlingham and Burlingham are not served by any public transport, even though the express bus service the X1 Yarmouth to Peterborough passes the village every half hour on the A47. It currently does not stop at the village as any detour currently would add too much time to the overall journey time, with the bus struggling to turn off the A47 into Burlingham travelling in a westerly direction and again to regain access when travelling in an easterly direction. To access this extremely useful service any resident of Burlingham and Lingwood would need to currently travel by car to Acle to pick up this bus.

2.11 The next nearest bus service is the 15A which connects Lingwood with Norwich, this is a very irregular service, providing poor interconnectivity with other areas. Again, there is no safe accessible way that any resident to the north of the A47T could reach this service.

Access to Local Rail Services

2.12 The nearest rail station to North Burlingham is located 1.8km to the south in Lingwood on the Norwich to Great Yarmouth line. Well within easy walking and cycling distance. This service has recently been upgraded as part of the Greater Anglia Franchise and now has this benefit of high-quality new trains which link into Norwich City Station and further afield using intercity links to London and Cambridge. Currently there is no safe accessible way that residents of North Burlingham can access this service due to the A47T.

2.13 The next nearest station is 3.5km to the east in Acle, again the only way residents of North Burlingham can access this service now is by car, as there is no safe footpath/cycleway link to the town and the railway station.

Bridleways

2.14 Both the areas to the north and south of the A47T have a number of large equestrian facilities and horse riders are regularly observed on the wide range of country lanes. At present there is no safe facility where a horse could currently cross the A47T, therefore significantly restricting access for this important road user in the area, limiting opportunities for this rural based industry.

Local Services

2.15 At present North Burlingham has no village shop, pub, restaurant or primary school. All these facilities are available within the parish albeit located to 1.6km south of the A47T within Lingwood. In addition, there is a full range of services available in Acle including supermarkets, post office, butchers, primary and secondary schools, doctors and healthcare, professional services, pubs, and restaurants. Unfortunately, the only way of accessing these at present is by car, and even that is difficult in peak hours. There are no footpath/cycleway links, even though Lingwood is in easy walking and cycling distance and Acle would be readily accessible by cycling and walking.

Gateway to the Broads

2.16 For a long time the B1140 South Walsham Road had been identified as one of the key access routes for holiday makers wanting to gain access to the Broads. Wroxham is signposted from the trunk road network in this location. During the holiday season these routes can be heavily used by a wide range of vehicles with the A47T being readily grid locked if there has been an accident further to the east on the Acle straight. During these times it becomes impossible to not only cross the A47T as a pedestrian or a cyclist, but also as a driver of a vehicle.

3.0 NEED TO TRAVEL

3.1 The 2011 census data confirms that the population of the Lingwood and Burlingham Parish was 2,643 residents, with average age of the residents being 43 which is generally of working age. See Appendix B for an extract of the Census Results. Out of the people who travelled to work rather than working at home who 85 % used their private car or were a passenger in a car and van. A very small percentage 4.5% walked and 1.7% cycled to work, 4% used rail and a mere 2% used the bus service.

3.2 51% of the trips to work were between 10km to 20km which probably indicated that they worked in or around the City of Norwich. There was however a reasonable percentage of 28% of people who travelled less than 10km to work and 17% less than 5km which would be readily cyclable and walkable especially. This however does not correlate with the number of people using these modes to travel to work which would suggest that people who could be encouraged to not use their private car are currently being deterred for some reason in this area. I believe that this is a direct result of the barrier to sustainable travel caused by the existing A47T and lack of safe walking and cycling facilities.

3.3 No existing walking or cycling survey has been undertaken by Highways England to inform the current scheme design and my client was informed when challenging this position that it was considered that there was no need due to what was perceived was a low demand. This is clearly incorrect and does not consider the fact that the existing A47T has formed a barrier to these modes for years, hence why very few people either cycle or walk between Burlingham to the north and Lingwood to the south.

3.4 The 2011 census shows us that there was a total of 152 children of primary school age and a total of 271 secondary/sixth form age living in the Parish. The catchment for the Lingwood primary school includes North Burlingham to the north of the A47T. It is not possible from the census data to be able to identify how many of the primary school age children in the parish live to the north of the A47T, however at the moment they are severely disadvantaged by being physically cut off from their school resulting in the only way of accessing it, being a car journey which in itself is not at all easy in the peak am period due to congestion and queuing. See Appendix C for Primary School Catchment.

3.5 With respect to secondary and sixth form age children the catchment school for the parish is Acle High School 3.5 km to the east. As previously stated, there is no footway or cycleway link between the parish and Acle and therefore the only way that children can get to school is by a special school bus or private car. See Appendix D for Secondary School Catchment.

3.6 BCGA have organised a petition of over 1036 signatures who have all requested that a safe pedestrian and cycling crossing facility be provided along this section of road, whether that be in the form of an overbridge or an underbridge.

3.7 The widespread introduction of electric bikes has now opened cycling for a lot wider range of users, enabling cyclists to now ride further than before and enabling the mode to be a real alternative to the private car. If Burlingham and Lingwood are going to enjoy this enhanced freedom, then the provision of the Active Travel Underbridge and Link to the east are essential.

4.0 HIGHWAYS ENGLAND SCHEME

4.1 The scheme that is the subject of this DCO application whilst greatly improving the safety of vehicle movements wishing to use the B1140 South Walsham Road to both access and egress the A47T, along with crossing the road to reach villages such as Lingwood and Cantley, does very little to improve footpath cycleway links between the villages. In my view this is huge opportunity which is missed.

4.2 The introduction of a dual carriageway along this section of the A47 and the removal of the vehicles crossing the central reservation is going to lead to the road speed limit being increased to 70mph. This will without a doubt increase the barrier effect of the A47 unless other measures are put in place to assist footway/cycleway/bridleway movements.

4.3 The proposed scheme now relies on the two new structures to the east and west of the scheme to provide safe footway/cycleway facilities. On the western end there will be a new 2.5m wide footway provided immediately adjacent to the carriageway on the new overbridge. The footway will then be extended to the east linking with the existing footway to the west of Dell Corner Lane, therefore providing a continuous link into North Burlingham. Although it is assumed that cycling movements will need to be undertaken on carriageway.

4.4 The crossing point to the east is to be formed by the new B1140 South Walsham Overbridge, with again only 2m footway shown immediately adjacent to the carriageway terminating just to the south of the eastbound access slip. Thus, providing no direct link to any other footway/cycleway network and effectively dropping cyclists and pedestrians onto what is a heavily used HGV route especially during Sugar Beet Campaign time and the holiday seasons. This footway provision does not even connect with the access track which is proposed along the southern side of the A47T which would at least enable a link to Lingwood Road and other footpath links to the south.

4.5 All cycling movements again would need to be on carriageway which again in this area around the B1140 South Walsham Junction is unlikely to be safe especially with the number of HGVs, especially over the new bridge.

4.6 There is also no continuation of a footway/cycleway to the east linking into Acle. Clearly it would be unsafe for cyclists to use the upgraded A47T in this area.

National Guidance

4.7 The recently published Local Transport Note 1/20 Published by the Department of Transport LTN 1/20 in July 2020, which is a nationally important guidance note which has been issued to all Local Authorities who will have to demonstrate that they have given due consideration to this guidance when designing new cycling schemes and when applying for Government funding that includes cycle infrastructure. This states in Paragraph 1.1.2 that:

Only schemes with a minimum score of 70% under the Cycling Level of Service CLoS, no critical fails under the Junction Assessment tools JAT no red scored turning movements will generally be considered for funding.

4.8 See Appendix E for extract of LTN 1/20.

4.9 The scheme currently being promoted by the HE completely fails to deal with cycling movements along this corridor and even more importantly how they would cross it. The B1140 South Walsham/A47T junction does not provide any cycling facilities at all, resulting in this arrangement clearly failing the JAT as outlined in LTN 1/20.

5.0 PROPOSED ACTIVE TRAVEL UNDERBRIDGE

5.1 To address the issues raised in Sections 2, 3 and 4 of this report, we believe that a new underbridge located close to where Main Road connects to the current A47T to the east of North Burlingham would provide a major benefit to the residents of North Burlingham and Lingwood as well as the wider area both north and south of the facility.

5.2 The underbridge with connecting footway/cycleway links from Dell Corner Lane and a crossing facility of the old A47T would provide a high-quality safe crossing point for pedestrians, cyclists and potentially horse riders to cross the new road alignment. The underpass would be designed to have a minimum headroom of 2.7m and would have between 1.5m to 2m depth of cover under the carriageway. The underpass will provide separated footpath/cycleway links with associated ramps either side meeting current accessibility standards. The underpass would enable horse riders to cross the A47T albeit it is expected that they would need to dismount to prevent conflict with pedestrians and cyclists.

5.3 The structure would be formed by reinforced concrete walls, covered by precast concrete beams, the underpass can be completely constructed offline at the same time as the main works are being constructed. See Drawing Number E21-067003-001 for a Proposed General Arrangement.

5.4 The underpass will cause minimal visual intrusion in the area and there will be no additional landscape impact.

5.5 There are no known ground conditions which would prevent the construction of this feature in this area. It is also proposed that the surface water that would possibly collect within the underpass will either be pumped up to the swale system running along the A47T or subject to availability of acceptable soakage rates at depth, drained to a new soakaway.

5.6 It is not intended that the underpass will be lit, as none of the connecting road and access routes are currently. Therefore, it has been assumed that users would use the same lighting arrangements that they do already when travelling on the rural lanes.

5.7 The underpass will link with the proposed access track which is proposed along the southern alignment of the A47T which will then able pedestrians and cyclist to use the remainder of Lingwood Road to connect into the villages to the south.

5.8 The benefit of this new crossing point is that it will provide a much-needed safer crossing point of the A47T which will be clear of the HGV route and the traffic on the B1140. There is a real possibility with the introduction of the grade separated arrangement at the B1140/A47T junction that traffic movements could significantly increase through this junction, especially HGV movement servicing the agricultural industries north and south of the A47T.

6.0 PROPOSED ACTIVE TRAVEL CORRIDOR LINK TO ACLE

6.1 The other aspect which we strongly believe needs to be added to the scheme and will be a real opportunity lost if not included, is the provision of dedicated footway/cycleway from North Burlingham through to the Windle allowing a link to be provided all the way into Acle. As outlined in Section 3 of this report Lingwood and North Burlingham are in the Secondary School catchment for Acle High. A footway/cycleway link which connects to the underpass outlined in Section 5 above would provide a high-quality link between Burlingham North and Acle, as well as enabling villages to the south also to use this route. There is sufficient space to provide some form of physical separation to the new road alignment, with appropriate fencing at key locations should provide an attractive and important link. See Drawing Number E21-067-03-002 showing proposals for Active Travel Link to Acle.

6.2 Whilst we believe that the best solution would be for this to be constructed with asphalt or some other form of sealed surface, if budgets did not allow, a more rural solution would be acceptable using a bound gravel. Again, we do not expect this to be lit and drainage would be simply to run off and soak to adjoining verges. It may be possible to recycle some of the former carriageway which is now becoming redundant in the construction of this facility, keeping down waste and reducing any additional costs.

6.3 The construction of this facility would cause minimal disruption to the overall construction process, and we strongly recommend that this link is included.

7.0 BUDGET COSTS AND PROGRAMME

7.1 Both the Active Travel Underbridge and the Active Travel Corridor to Acle have been designed to enable the works to be completed within the current red lines shown on the Order Plans. This should hopefully cut down any need for re-consultation etc if these schemes were going to be included within the scheme.

7.2 With respect to the completion of the design we believe that this could easily be completed within around two months which should enable more detailed plans to be submitted as part of this Inquiry, if the Inspector considered that there was real merit in their inclusion in the scheme.

7.3 An initial estimate for the provision of the underbridge is £660,000, which does not include land costs. If however this was not included at this stage any potential retrofitting of a crossing once the road was open, is likely to cost at least 4 times this cost.

7.4 The estimate for the construction of the Active Travel Corridor Link to Acle is £389,000. Again, as mentioned this could be significantly reduced by using recycled materials for subbase and surfacing. The cost of potentially retrofitting a footway/cycleway link along this route is likely to be considerably more than the above.

8.0 OPPORTUNITY TO EXTEND NATIONAL CYCLEWAY NETWORK

8.1 One of the major benefits that the above Active Travel Underbridge and Active Travel Corridor Link can provide the opportunity to strategically extend the National Cycleway Network to connect the Broads National Park. At the moment the National Cycleway Network does not connect to the Broads with Cycle Route No 1 connecting Norwich with areas to the south and north. Cycle Route No 31 goes as far as Reedham where it terminates. It clearly looks like the intention was with Route No 31 that it would extend north using Reedham ferry and connect to the Broads. See Appendix F for a plan showing the National Cycleway Network.

8.2 With the construction of the Active Travel Underbridge, there is a real opportunity to extend Cycle Route No 31 north from Reedham through Lingwood across the A47 using the new underbridge then using Dell Corner Lane, up into South Walsham then onto Woodbastwick, Salhouse and Wroxham all on relatively quiet rural roads. To the east the new link to Acle would enable a route to be extended to Filby and Ormesby connecting up with Route 517 which runs along the coast, all using lightly trafficked rural lanes. This would enable a large area of the Broads to be readily opened up to cyclists from the south, helping improve tourism and generally accessibility to this important National Park. See Appendix G for a plan showing how it could be extended.

9.0 CONCLUSIONS

9.1 In principle BCGA supports the proposed A47 Blofield to North Burlingham Dualling Scheme, our concern relates to the lack of consideration to footpath and cycling crossing points. This has also been picked up by Norfolk County Council who have raised the same objection to the delivery of the scheme. It the scheme is constructed as currently planned it will have a significant impact on the social mobility of the existing residents both north and south of the A47T. The route has caused a significant barrier to movement for years with an impact on decisions such as schooling, shopping, travel to work, leisure opportunities and general sustainable travel.

9.2 The construction of the new scheme should attempt to address these issues; however, we feel that as currently proposed it falls short in a number of areas. We are in real danger if this is not changed now that we are missing several major opportunities to not only address these local issues but also miss out on making sure that the villages can improve their sustainability and take part in future advances in sustainable travel such as electric bikes and scooters.

9.3 We believe that it is essential that a new Active Travel Underbridge is included within the scheme and that an Active Travel Link is provided to the east connecting Acle. This would open up access for children to walk and cycle to school, residents to reach shops, healthcare and other essential facilities without having to use their car. It will make the Parish of Burlingham and Lingwood well connected with easy access to the rail stations at Lingwood and Acle enabling journeys to destinations further afield through connections to Norwich.

9.4 The other major advantage to the proposed changes is that they give a real opportunity to provide an affordable extension to the National Cycle Way network linking the Norfolk Broads National Park into this network.

9.5 Our initial design work has shown that there are no cost or programme issues which should prevent the scheme from being included and we believe that now is the time to address this issue rather than trying to retrofit some form of crossing in future years.

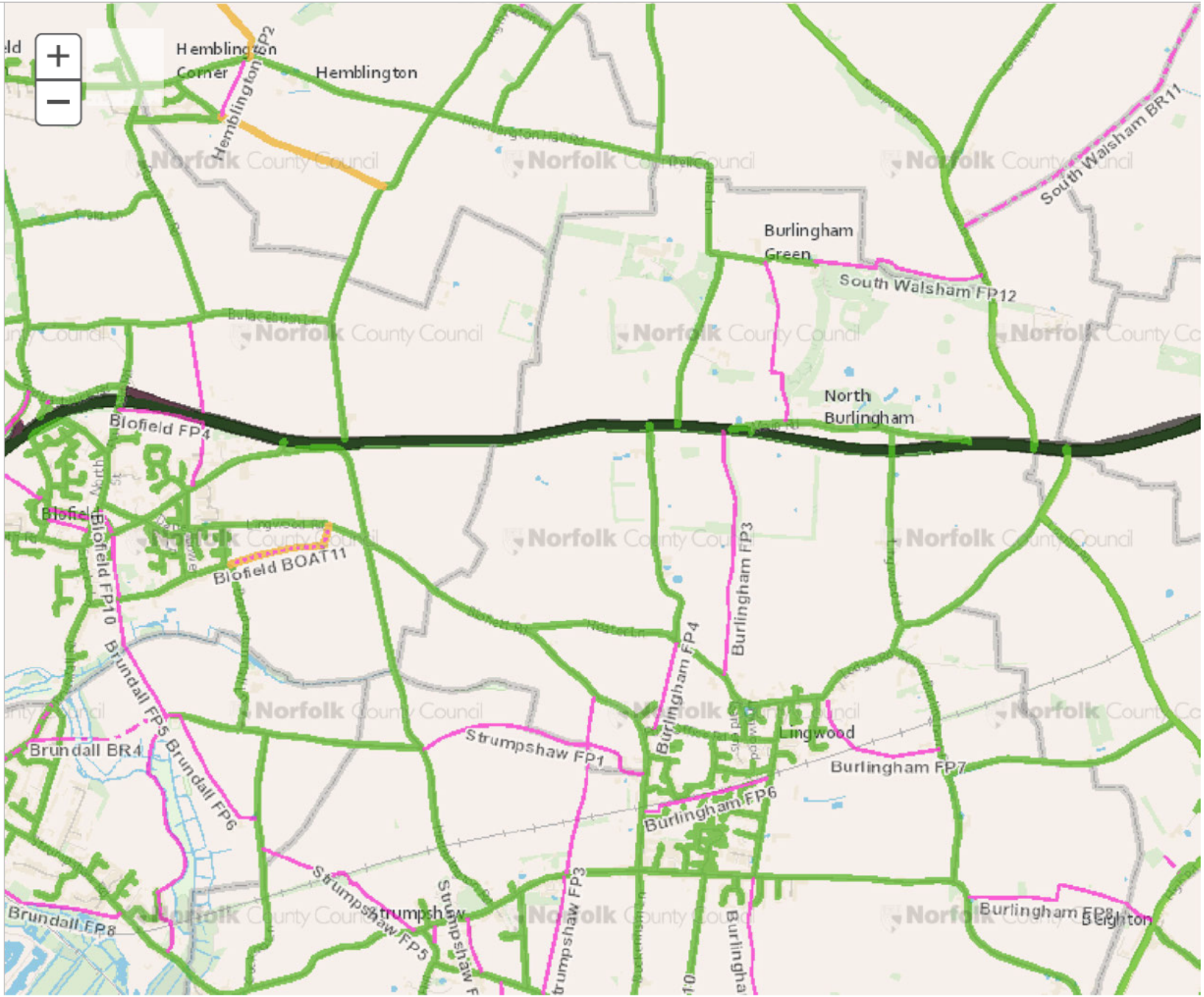
9.6 With the above points in mind, I respectfully request that the Inspector takes on board the above points and requests that Highways England and its consultants rapidly review their design proposals and incorporate both the Underbridge and the Eastern Link to Acle.

APPENDICES

APPENDIX A

Legend Disclaimer Highway/PROW Enquiry

- Public Rights of Way Cutting
- Norfolk Trails Cutting Contract
- Public Rights of Way
  - Bridleway
  - Byway open to all traffic
  - Footpath
  - Restricted Byway
- Norfolk County Council Maintained Unsurfaced Roads
- Non Maintained Public Highway
- Norfolk County Council Maintained Roads
- Highways Agency Maintained Roads
- Parishes



APPENDIX B

QS702EW - Distance travelled to work

ONS Crown Copyright Reserved [from Nomis on 16 July 2021]

population	All usual residents aged 16 to 74 in employment the week before the census
units	Persons
area type	parishes 2011
area name	E04006235 : Lingwood and Burlingham
rural urban	Total

Distance travelled to work	2011
All categories: Distance travelled	1,306
Less than 2km	76
2km to less than 5km	121
5km to less than 10km	125
10km to less than 20km	584
20km to less than 30km	62
30km to less than 40km	19
40km to less than 60km	12
60km and over	38
Work mainly at or from home	164
Other	105
Total distance (km)	17,840.0
Average distance (km)	17.2

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest geographies

KS102EW - Age structure

ONS Crown Copyright Reserved [from Nomis on 16 July 2021]

population	All usual residents
units	Persons
area type	parishes 2011
area name	E04006235 : Lingwood and Burlingham
rural urban	Total

Age	2011
All usual residents	2,643
Age 0 to 4	128
Age 5 to 7	90
Age 8 to 9	61
Age 10 to 14	172
Age 15	36
Age 16 to 17	63
Age 18 to 19	51
Age 20 to 24	117
Age 25 to 29	145
Age 30 to 44	443
Age 45 to 59	593
Age 60 to 64	215
Age 65 to 74	305
Age 75 to 84	158
Age 85 to 89	45
Age 90 and over	21
Mean Age	42.6
Median Age	45.0

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest geographies.

QS701EW - Method of travel to work

ONS Crown Copyright Reserved [from Nomis on 16 July 2021]

population	All usual residents aged 16 to 74
units	Persons
area type	parishes 2011
area name	E04006235 : Lingwood and Burlingham
rural urban	Total

Method of Travel to Work	2011
All categories: Method of travel to work	1,932
Work mainly at or from home	95
Underground, metro, light rail, tram	1
Train	49
Bus, minibus or coach	26
Taxi	4
Motorcycle, scooter or moped	14
Driving a car or van	970
Passenger in a car or van	60
Bicycle	21
On foot	55
Other method of travel to work	11
Not in employment	626

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest geographies.

APPENDIX C

Norfolk County Council (https://www.norfolk.gov.uk/)

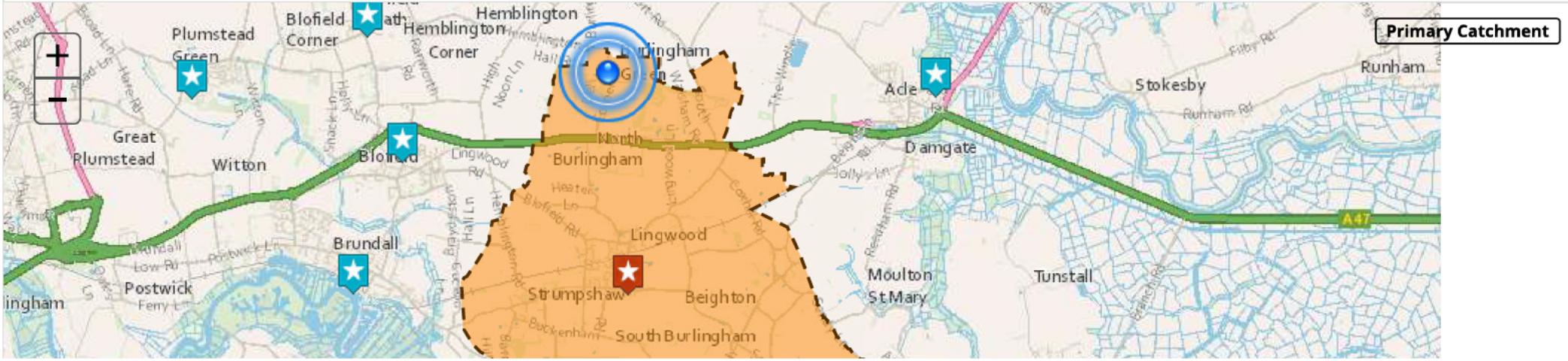
School Catchments 2021/2022

Search for your postcode/address to view the school catchments for your area:

nr134sy

Summary | View on Map

Now select the school catchment to view from this list: Primary



School Catchment Areas

- The information above shows the traditional primary and secondary school(s) catchment area(s) that serve your address. These may not be the nearest schools to your address.
- Not all schools have a defined catchment area.
- Please be aware that living within a school catchment area does not guarantee a place at that school (see Parents' guide to admission to schools in Norfolk and the guides to schools in Norfolk which detail over-subscription rules which are used to prioritise applications at each school). Some schools do not give priority to children living in the catchment area.
- You can see schools in your local area by clicking "View on Map" and selecting Primary, Junior or Secondary
- The website uses Ordnance Survey data which accurately locates the vast majority of Norfolk properties. They are unable to provide a 100% guarantee so please discuss your situation with Norfolk's Admissions Team if you believe the position is not as stated.

APPENDIX D

Norfolk County Council (https://www.norfolk.gov.uk/)

Home Find the location of services near you School Catchments

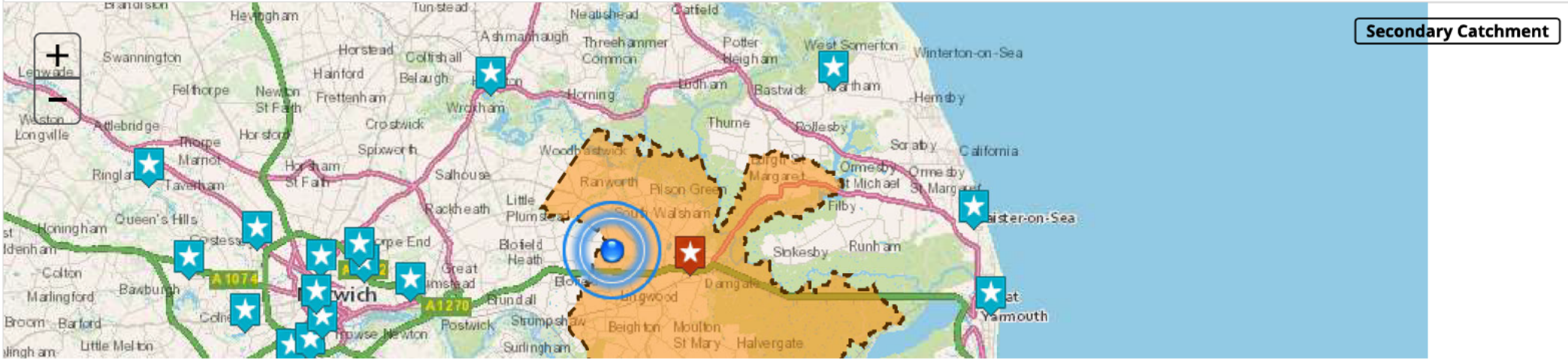
School Catchments 2021/2022

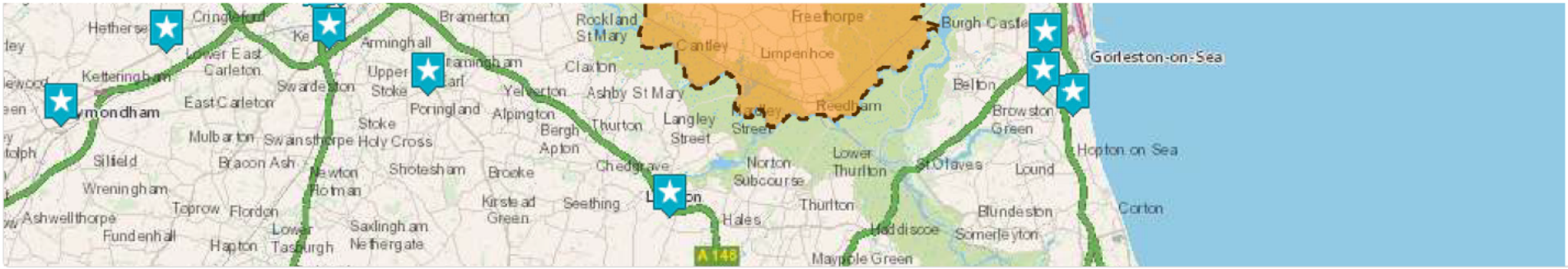
Search for your postcode/address to view the school catchments for your area:

nr134sy

Summary View on Map

Now select the school catchment to view from this list: Secondary





School Catchment Areas

- The information above shows the traditional primary and secondary school(s) catchment area(s) that serve your address. These may not be the nearest schools to your address.
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- You can see schools in your local area by clicking "View on Map" and selecting Primary, Junior or Secondary
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APPENDIX E

Department for Transport

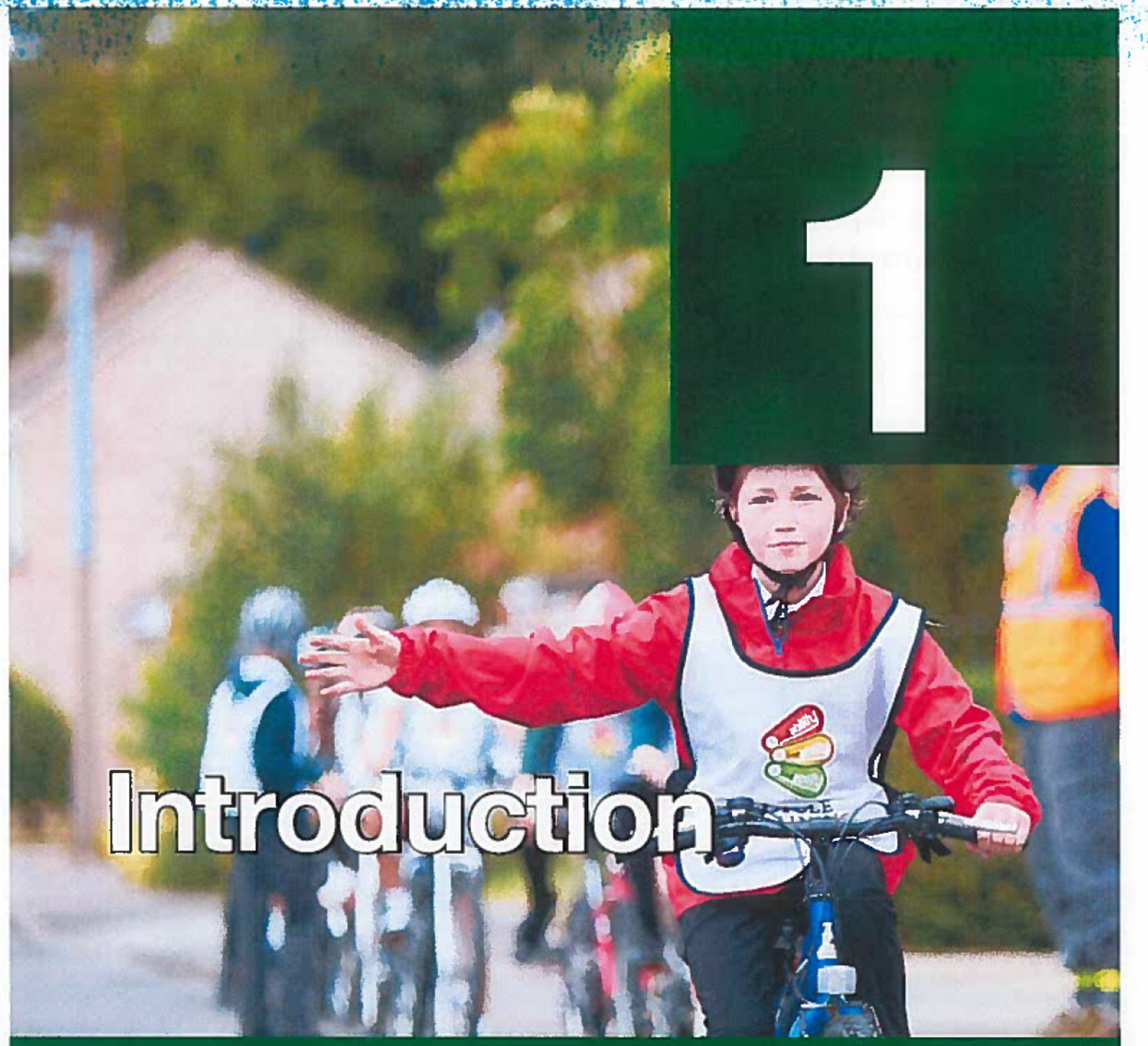
Cycle Infrastructure Design

Local Transport Note 1/20
July 2020

Department for Transport

Cycle Infrastructure Design

Local Transport Note 1/20
July 2020



1 Introduction

The statutory Cycling and Walking Investment Strategy (CWIS) sets a clear ambition to make cycling and walking the natural choices for short journeys or as part of a longer journey with supporting objectives to increase cycling and walking levels. This guidance supports the delivery of high-quality cycle infrastructure to deliver this ambition and objective; and reflects current good practice, standards and legal requirements.

Inclusive cycling is the underlying theme so that people of all ages and abilities are considered.

Much has changed in the world of cycle infrastructure since LTN 2/08 was published over a decade ago and this guidance has been developed in partnership with a range of stakeholders and experts to ensure it reflects the latest developments in cycle infrastructure design, including proven design elements pioneered in London under Transport for London and in Wales under the Welsh Government.

1.1 Summary of requirements

1.1.1 Local authorities are responsible for setting design standards for their roads. This national guidance provides a recommended basis for those standards based on five overarching design principles and 22 summary principles. There will be an expectation that local authorities will demonstrate that they have given due consideration to this guidance when designing new cycling schemes and, in particular, when applying for Government funding that includes cycle infrastructure.

1.1.2 The guidance contains tools which give local authorities flexibility on infrastructure design and sets a measurable quality threshold to achieve when designing cycling schemes. The Cycling Level of Service (CLoS) at Appendix A and the Junction Assessment tools (JAT) at Appendix B are new mechanisms introduced to set minimum quality criteria. Only schemes with a minimum score of 70% under the CLoS, no critical fails and under the JAT no red-scored turning movements will generally be considered for funding. Where schemes are proposed for funding that do not meet these minimum criteria, authorities will be required to justify their design choices. It still gives local authorities flexibility on design of infrastructure, but sets an objective and measurable quality threshold. Use of these tools is explained in more detail in Chapter 4, Section 4.5.

1.1.3 To effectively apply this guidance those designing cycling and walking schemes should have an appropriate level of of experience and training. An example would be the Institute of Highway Engineers' Professional Certificate & Diploma in Active Travel that allows applicants to demonstrate their experience and produce work to the required standard. For more information please see: www.theihe.org/courses/active-travel

1.2 Purpose

1.2.1 This Local Transport Note provides guidance and good practice for the design of cycle infrastructure, in support of the Cycling and Walking Investment Strategy. The scope of the document is limited to design matters. Further reading on related matters, helpful tools and advice on procedural issues are included in the Appendices. Local Transport Note (LTN) 1/20 replaces previous guidance on cycle infrastructure design provided by LTN 2/08, and accordingly LTN 2/08 is withdrawn.

1.2.2 LTN 1/20 also replaces LTN 1/12: Shared Use Routes for Pedestrians and Cyclists, and accordingly, LTN 1/12 is now withdrawn. See also Chapter 6, Section 6.5.

1.3 Application

1.3.1 The guidance covers England and Northern Ireland. A number of other documents can also be used in Northern Ireland and designers should take advice from the roads authority before initiating any design. Where the text refers to highway authorities for England, the equivalent term in Northern Ireland is road authority. In Northern Ireland the Department for Infrastructure is the sole road authority. The guidance should be applied to all changes associated with highway improvements, new highway construction and new or improved cycle facilities, including those on other rights of way such as bridleways and routes within public open space. Separate guidance is available for Scotland and Wales. In Scotland, the relevant guidance is Cycling by Design published by Transport Scotland and in Wales, the relevant guidance is the Active Travel Design Guidance, published by the Welsh Government.

1.3.2 The CWIS recommends that local authorities prepare Local Cycling and Walking Infrastructure Plans (LCWIPs). This guidance (see Chapter 3) should be applied when identifying the infrastructure required to create good quality cycle networks when preparing the LCWIP or other local network plan for cycling.

Appendix A: Cycling Level of Service Tool

Key requirement	Factor	Design principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Cohesion	Connections	Cyclists should be able to easily and safely join and navigate along different sections of the same route and between different routes in the network.	1. Ability to join/leave route safely and easily: consider left and right turns		Cyclists cannot connect to other routes without dismounting	Cyclists can connect to other routes with minimal disruption to their journey	Cyclists have dedicated connections to other routes provided, with no interruption to their journey		
	Continuity and Wayfinding	Routes should be complete with no gaps in provision. 'End of route' signs should not be installed – cyclists should be shown how the route continues. Cyclists should not be 'abandoned', particularly at junctions where provision may be required to ensure safe crossing movements.	2. Provision for cyclists throughout the whole length of the route		Cyclists are 'abandoned' at points along the route with no clear indication of how to continue their journey.	The route is made up of discrete sections, but cyclists can clearly understand how to navigate between them, including through junctions.	Cyclists are provided with a continuous route, including through junctions		
	Density of network	Cycle networks should provide a mesh (or grid) of routes across the town or city. The density of the network is the distance between the routes which make up the grid pattern. The ultimate aim should be a network with a mesh width of 250m.	3. Density of routes based on mesh width ie distances between primary and secondary routes within the network		Route contributes to a network density mesh width >1000	Route contributes to a network density mesh width 250 – 1000m	Route contributes to a network density mesh width <250m		
Directness	Distance	Routes should follow the shortest option available and be as near to the 'as-the-crow-flies' distance as possible.	4. Deviation of route Deviation Factor is calculated by dividing the actual distance along the route by the straight line (crow-fly) distance, or shortest road alternative.		Deviation factor against straight line or shortest road alternative >1.4	Deviation factor against straight line or shortest road alternative 1.2 – 1.4	Deviation factor against straight line or shortest road alternative <1.2		

Key requirement	Factor	Design principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Directness	Time: Frequency of required stops or give ways	The number of times a cyclist has to stop or loses right of way on a route should be minimised. This includes stopping and give ways at junctions or crossings, motorcycle barriers, pedestrian-only zones etc.	5. Stopping and give way frequency		The number of stops or give ways on the route is more than 4 per km	The number of stops or give ways on the route is between 2 and 4 per km	The number of stops or give ways on the route is less than 2 per km		
	Time: Delay at junctions	The length of delay caused by junctions should be minimised. This includes assessing impact of multiple or single stage crossings, signal timings, toucan crossings etc.	6. Delay at junctions		Delay for cyclists at junctions is greater than for motor vehicles	Delay for cyclists at junctions is similar to delay for motor vehicles	Delay is shorter than for motor vehicles or cyclists are not required to stop at junctions (eg bypass at signals)		
	Time: Delay on links	The length of delay caused by not being able to bypass slow moving traffic.	7. Ability to maintain own speed on links		Cyclists travel at speed of slowest vehicle (including a cycle) ahead	Cyclists can usually pass slow traffic and other cyclists	Cyclists can always choose an appropriate speed.		
	Gradients	Routes should avoid steep gradients where possible. Uphill sections increase time, effort and discomfort. Where these are encountered, routes should be planned to minimise climbing gradient and allow users to retain momentum gained on the descent.	8. Gradient		Route includes sections steeper than the gradients recommended in Chapter 5	There are no sections of route steeper than the gradients recommended in Chapter 5	There are no sections of route which steeper than 2%		

Key requirement	Factor	Design principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Safety	Reduce/ remove speed differences where cyclists are sharing the carriageway	Where cyclists and motor vehicles are sharing the carriageway, the key to reducing severity of collisions is reducing the speeds of motor vehicles so that they more closely match that of cyclists. This is particularly important at points where risk of collision is greater, such as at junctions.	9. Motor traffic speed on approach and through junctions where cyclists are sharing the carriageway through the junction	85th percentile > 37mph (60kph)	85th percentile >30mph	85th percentile 20mph-30mph	85th percentile <20mph		
			10. Motor traffic speed on sections of shared carriageway	85th percentile > 37mph (60kph)	85th percentile >30mph	85th percentile 20mph-30mph	85th percentile <20mph		
	Avoid high motor traffic volumes where cyclists are sharing the carriageway	Cyclists should not be required to share the carriageway with high volumes of motor vehicles. This is particularly important at points where risk of collision is greater, such as at junctions.	11. Motor traffic volume on sections of shared carriageway, expressed as vehicles per peak hour	>10000 AADT, or >5% HGV	5000-10000 AADT and 2-5%HGV	2500-5000 and <2% HGV	0-2500 AADT		
	Risk of collision	Where speed differences and high motor vehicle flows cannot be reduced cyclists should be separated from traffic – see Figure 4.1. This separation can be achieved at varying degrees through on-road cycle lanes, hybrid tracks and off-road provision. Such segregation should reduce the risk of collision from beside or behind the cyclist.	12. Segregation to reduce risk of collision alongside or from behind	Cyclists sharing carriageway – nearside lane in critical range between 3.2m and 3.9m wide and traffic volumes prevent motor vehicles moving easily into opposite lane to pass cyclists.	Cyclists in unrestricted traffic lanes outside critical range (3.2m to 3.9m) or in cycle lanes less than 1.8m wide.	Cyclists in cycle lanes at least 1.8m wide on-carriageway; 85th percentile motor traffic speed max 30mph.	Cyclists on route away from motor traffic (off road provision) or in off-carriageway cycle track. Cyclists in hybrid/light segregated track; 85th percentile motor traffic speed max 30mph.		

Key requirement	Factor	Design principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Safety		A high proportion of collisions involving cyclists occur at junctions. Junctions therefore need particular attention to reduce the risk of collision. Junction treatments include: Minor/side roads – cyclist priority and/or speed reduction across side roads Major roads – separation of cyclists from motor traffic through junctions.	13. Conflicting movements at junctions		Side road junctions frequent and/ or untreated. Major junctions, conflicting cycle/ motor traffic movements not separated	Side road junctions infrequent and with effective entry treatments. Major junctions, principal conflicting cycle/ motor traffic movements separated.	Side roads closed or treated to blend in with footway. Major junctions, all conflicting cycle/motor traffic streams separated.		
	Avoid complex design	Avoid complex designs which require users to process large amounts of information. Good network design should be self-explanatory and self-evident to all road users. All users should understand where they and other road users should be and what movements they might make.	14. Legible road markings and road layout		Faded, old, unclear, complex road markings/ unclear or unfamiliar road layout	Generally legible road markings and road layout but some elements could be improved	Clear, understandable, simple road markings and road layout		
	Consider and reduce risk from kerbside activity	Routes should be assessed in terms of all multi-functional uses of a street including car parking, bus stops, parking, including collision with opened door.	15. Conflict with kerbside activity	Narrow cycle lanes <1.5m or less (including any buffer) alongside parking/loading	Significant conflict with kerbside activity (eg nearside cycle lane < 2m (including buffer) wide alongside kerbside parking)	Some conflict with kerbside activity – eg less frequent activity on nearside of cyclists, min 2m cycle lanes including buffer.	No/very limited conflict with kerbside activity or width of cycle lane including buffer exceeds 3m.		
	Reduce severity of collisions where they do occur	Wherever possible routes should include "evasion room" (such as grass verges) and avoid any unnecessary physical hazards such as guardrail, build outs, etc. to reduce the severity of a collision should it occur.	16. Evasion room and unnecessary hazards		Cyclists at risk of being trapped by physical hazards along more than half of the route.	The number of physical hazards could be further reduced	The route includes evasion room and avoids any physical hazards.		

Key requirement	Factor	Design principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Comfort	Surface quality	Density of defects including non cycle friendly ironworks, raised/sunken covers/ gullies, potholes, poor quality carriageway paint (eg from previous cycle lane)	17. Major and minor defects		Numerous minor defects or any number of major defects	Minor and occasional defects	Smooth high grip surface		
		Pavement or carriageway construction providing smooth and level surface	18. Surface type		Any bumpy, unbound, slippery, and potentially hazardous surface.	Hand-laid materials, concrete paviours with frequent joints.	Machine laid smooth and non-slip surface – eg Thin Surfacing, or firm and closelyjointed blocks undisturbed by turning heavy vehicles.		
	Effective width without conflict	Cyclists should be able to comfortably cycle without risk of conflict with other users both on and off road.	19. Desirable minimum widths according to volume of cyclists and route type (where cyclists are separated from motor vehicles).		More than 25% of the route includes cycle provision with widths which are no more than 25% below desirable minimum values.	No more than 25% of the route includes cycle provision with widths which are no more than 25% below desirable minimum	Recommended widths are maintained throughout whole route		
	Wayfinding	Non-local cyclists should be able to navigate the routes without the need to refer to maps.	20. Signing		Route signing is poor with signs missing at key decision points.	Gaps identified in route signing which could be improved	Route is well signed with signs located at all decision points and junctions		

Key requirement	Factor	Design principle	Indicators	Critical	0 (Red)	1 (Amber)	2 (Green)	Score	Comments
Attractiveness	Social safety and perceived vulnerability of user	Routes should be appealing and be perceived as safe and usable. Well used, well maintained, lit, overlooked routes are more attractive and therefore more likely to be used.	21. Lighting		Most or all of route is unlit	Short and infrequent unlit/ poorly lit sections	Route is lit to highway standards throughout		
			22. Isolation		Route is generally away from activity	Route is mainly overlooked and is not far from activity throughout its length	Route is overlooked throughout its length		
	Impact on pedestrians, including people with disabilities	Introduction of dedicated on-road cycle provision can enable people to cycle on-road rather than using footways which are not suitable for shared use. Introducing cycling onto well used footpaths may reduce the quality of provision for both users, particularly if the shared use path does not meet recommended widths.	23. Impact on pedestrians, Pedestrian Comfort Level based on Pedestrian Comfort guide for London (Section 6.1)		Route impacts negatively on pedestrian provision, Pedestrian Comfort is at Level C or below.	No impact on pedestrian provision or Pedestrian Comfort Level remains at B or above.	Pedestrian provision enhanced by cycling provision, or Pedestrian Comfort Level remains at A		
	Minimise street clutter	Signing required to support scheme layout	24. Signs informative and consistent but not overbearing or of inappropriate size		Large number of signs needed, difficult to follow and/ or leading to clutter	Moderate amount of signing particularly around junctions.	Signing for wayfinding purposes only and not causing additional obstruction.		
	Secure cycle parking	Ease of access to secure cycle parking within businesses and on-street	25. Evidence of bicycles parked to street furniture or cycle stands		No additional cycle parking provided or inadequate provision in insecure nonoverlooked areas	Some secure cycle parking provided but not enough to meet demand	Secure cycle parking provided, sufficient to meet demand		
							Audit Score Total	**0**	**0**

Appendix B: Junction Assessment Tool

1. Introduction

As junctions pose the greatest risk of collisions to all road users, they require close attention to create conditions which will attract a wide range of new users. Fear of motor traffic in the current highway environment is a major factor preventing the uptake of cycling by a broader range of people.[56]

The Junction Assessment Tool (JAT) is an adaptation of a similar tool in the 2014 London Cycling Design Standards (LCDS), and is intended to be used at the design stage as well as for the assessment of existing junctions. It follows the same themes as the critical junctions assessment in the Route Selection Tool, but looks more closely at how a cyclist would move through a junction.

The tool has been expanded to be more explicit for a range of junction types and to aid its use by practitioners who may lack experience in objectively considering cycle safety and perception of cycle route quality. The outputs and methodology are similar to the LCDS tool.

A junction assessment should consider ALL potential cycle movements through a junction. It is not sufficient to plan a cycle route as a linear corridor from A to B if joining or leaving it midway is problematic, dangerous or impossible. However, there may be some situations where not all movements at a junction need to be considered if some are not permitted for cyclists (e.g. at the ends of a motorway slip road) or if some turning movements are banned (although an exemption for cycles should always be considered).

2. Scoring cycle movements and the overall junction

The junction assessment should be represented graphically by colour-coding each movement red, amber or green.

Movements designated as red are the most uncomfortable or unsafe for cyclists, and so on:

- Red: where conditions exist that are most likely to give rise to the most common collision types, then the movement should be represented on the plan as a red arrow
- Amber: where the risk of those collision types has been reduced by design layout or traffic management interventions, then the movement should be coloured amber
- Green: where the potential for collisions has been removed entirely, then the movement should be coloured green

56 Pooley, C, Tight, M, Jones, T, Horton, D, Scheldeman, G, Jopson, A, Mullen, C, Chisholm, A, Strano, E & Constantine, S 2011, **Understanding walking and cycling: summary of key findings and recommendations**. Lancaster University, Lancaster

'Green' should be taken to mean suitable for all potential cyclists; 'red' means suitable only for a minority of cyclists (and, even for them, it may be uncomfortable to make). Green movements will exceed the standards that have typically been achieved in the UK to date.

To aid option appraisal and a comparison with existing provision, proposed schemes should be assessed numerically by giving a score of 0, 1 and 2 to the red, amber and green movements respectively.

In addition, any banned movements for cycling (shown on the diagram in black with a cross at the end) will also score zero.

An overall percentage score for the junction should be derived by dividing the total score for all of the possible movements with the maximum possible score, if all were coded green.

The worked example below, taken from Section 2.2.7 of the London Cycling Design Standards shows how this is done.

3. Applying the tool

Criteria for the types of collision, conflicts and conditions which would be scored 0,1 or 2 are listed in the red-amber-green tables below.

The first section of the table gives criteria for all junctions, and should be applied in conjunction with the section specific to the type of junction (e.g. priority junction) under consideration.

Where a movement would meet criteria falling into more than one scoring band (e.g. red and amber) the worst score should be taken – i.e. meeting any red criterion means the movement is scored as red.

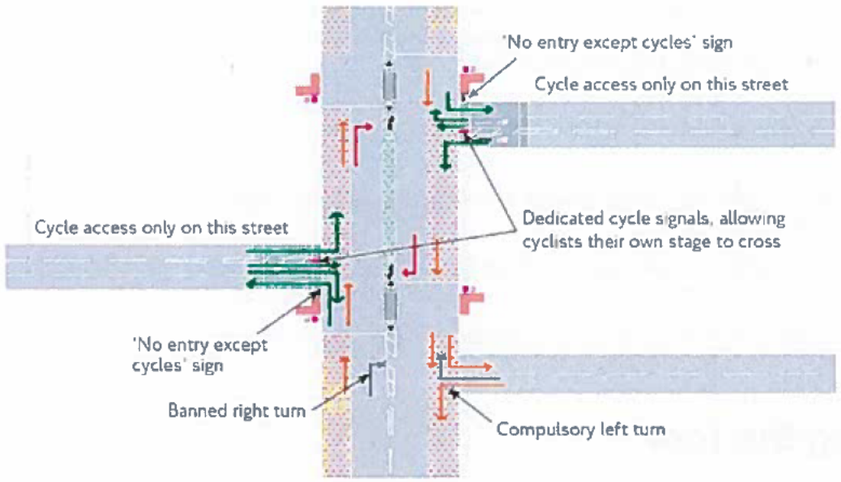
4. Worked example

This example shows a busy high street crossed by a cycle route on offset side streets that are closed to motor vehicles. Traffic signals hold general traffic on the high street in both directions to allow a separate stage for cycle movements only.

Cycle movements out of the side streets are all shown with green arrows as they can take place unopposed during that stage. Cyclists on the high street turning right into either side street have to cross two lanes of general traffic and then look for a gap in a further two lanes of oncoming traffic. The presence of the right turn-pocket is helpful but without separation in time and space this movement is still difficult and should be marked as red.

Cyclists moving along the high street can do so within a bus lane and so this movement is shown as amber as they do not have to mix with the main traffic flow. The other side street to the south has banned movements for all vehicles including cyclists and so this is shown as black with a cross at the end.

The overall junction score is 24/40, or 60%.



5. Junction assessment tool scoring criteria

Conditions relate to cycling in mixed traffic unless otherwise indicated. Figure 4.1 in the guidance offers general advice on when segregation from motor traffic is preferred.

Type of junction	Cycle movement being assessed	Suitable only for confident existing cyclists, and may be avoided by some experienced cyclists Conditions are most likely to give rise to the most common collision types Score = 0	Likely to be more acceptable to most cyclists, but may still pose problems for less confident or new cyclists The risk of collisions has been reduced by design layout or traffic management interventions Score = 1	Suitable for all potential and existing cyclists The potential for collisions has been removed, or managed to a high standard of safety for cyclists Score = 2
Any type of junction	Any movement	• Cycle movement in potential conflict[57] with heavy motor traffic flow.[58] • Cycle movement mixed with or crossing traffic with 85th percentile speed exceeding 60kph, or where vehicles accelerate rapidly. • Necessary to cross more than one traffic lane (without refuge or protection) to complete cycle movement unless traffic flows are low. • Cycle movement crosses wide junction entry or exit: e.g. with merge or diverge taper or slip lane. • Pinch points on junction entry or exit (lane width 3.2m-3.9m). • Cycle movement affected by very poor surface quality utility reinstatement, gully positioning, debris.	• Cycle movement in potential conflict with moderate traffic flow.[59] • Cycle lanes through junction meeting appropriate desirable minimum width requirements for the movement under consideration. • Raised table at junction crossed by traffic in potential conflict with cycle movement. • Cycle movement made by transiting onto section of shared use footway.	• Low[60] traffic speed and volume in mixed traffic environment (e.g. access-only streets in a residential area). • Cycle movement separated physically and/or in time from motor traffic and also separated from pedestrians. • Cycle movement bypasses junction completely, including via good quality grade separation.

57 'In potential conflict with' means where heavy motor traffic movements cross or run alongside cycle movements without being separated physically and/or in time

58 Heavy traffic flow = > 5000 motor vehicles per day and/or HGV and bus flow > 500 per day

59 Moderate traffic flow = 2500-5000 motor vehicles per day and/or HGV and bus flow 250-500 per day

60 Low traffic flow – < 2500 motor vehicles per day and/or HGV and bus flow < 250 per day

Type of junction	Cycle movement being assessed	Suitable only for confident existing cyclists, and may be avoided by some experienced cyclists Conditions are most likely to give rise to the most common collision types Score = 0	Likely to be more acceptable to most cyclists, but may still pose problems for less confident or new cyclists The risk of collisions has been reduced by design layout or traffic management interventions Score = 1	Suitable for all potential and existing cyclists The potential for collisions has been removed, or managed to a high standard of safety for cyclists Score = 2
Simple priority T-junction In addition to and notwithstanding any of the above "any junction" conditions (Note – staggered junctions assessed as two separate T-junctions)	Right turn from minor arm	• Heavy traffic movements and/or high bus and HGV flows in potential conflict with cycle movement, with no physical refuge in the centre of the major road (including ghost island junction).[61]	• Central refuge allowing two-stage cycle movement crossing one traffic lane at a time.	• Cycle movement made via crossing of major arm with dedicated cycle signals or cycle priority.
	Left turn from major arm		• Side road entry treatment (table across minor arm).	• Continuous footway and cycle track across minor arm.
	Right turn from major arm	• Heavy traffic movements and/or high bus and HGV flows in potential conflict with no physical refuge in the centre of major road (including ghost island junction).	• Protected turning refuge allowing two stage cycle movement, crossing one lane at a time.	• Cycle movement made via crossing of major arm via dedicated cycle signals or cycle priority.
	Ahead on major arm, crossing minor arm	• Congested conditions causing poor visibility for right-turning motor vehicles from major arm. • Junction corner radius ≥9m, including where off-carriageway cycle track crosses minor arm.	• Junction free from queueing traffic and cycle lane on major arm meeting desirable minimum width requirements. • Junction corner radius <9m, including where off-carriageway cycle track crosses minor arm without priority. • Side road entry treatment (table across minor arm).	• Off-carriageway cycle track or stepped cycle track alongside major arm, crossing minor arm with priority over turning traffic.[62]

61 Where there is a continuous gap of at least 10s in both major road traffic streams every 60s, a score of 1 will be appropriate

62 A cycle priority side road crossing would score 1 instead of 2 if the flow of traffic entering and leaving the side road is moderate or high (see notes 3 and 4)

Type of junction	Cycle movement being assessed	Suitable only for confident existing cyclists, and may be avoided by some experienced cyclists Conditions are most likely to give rise to the most common collision types Score = 0	Likely to be more acceptable to most cyclists, but may still pose problems for less confident or new cyclists The risk of collisions has been reduced by design layout or traffic management interventions Score = 1	Suitable for all potential and existing cyclists The potential for collisions has been removed, or managed to a high standard of safety for cyclists Score = 2
Crossroads – as T junction plus: In addition to and notwithstanding any of the above "any junction" conditions	Ahead from minor arm	• Heavy opposing traffic movements with no physical refuge (including ghost island junction).[63]	• Protected pocket refuge for ahead cycles allowing two stage movement, crossing one lane at a time.	• Cycle movement made via crossing of major arm via dedicated cycle signals or cycle priority.
Traffic Signals *In addition to and notwithstanding any of the above "any junction" conditions*	All movements	• Single or multiple queuing lanes with no cycle lanes or tracks on approaches. • Junctions with unsignalised left turn merge/diverge and signalised ahead lanes.	• Advance Cycle Stop lines, at least 5m deep[64] and where the signals on the approach are on green for <30% of the cycle time. • Signal timings adjusted to provide extended intergreen to suit cycle movement under consideration. • Cycle/pedestrian scramble (toucan crossings with all-red stage). • Early release for cycles, with enough time to clear junction for cycle movement being considered.	• Cycle movement has no potential conflict with motor traffic, e.g. dedicated cycle stage, conflicting traffic movement held or banned.
	Right turn		• Two-stage right turn via ASL or marked area in front of stop line.	• Two-stage right turn with physically protected waiting area.

63 Where there is a continuous gap of at least 10s in both major road traffic streams every 60s, a score of 1 will be appropriate

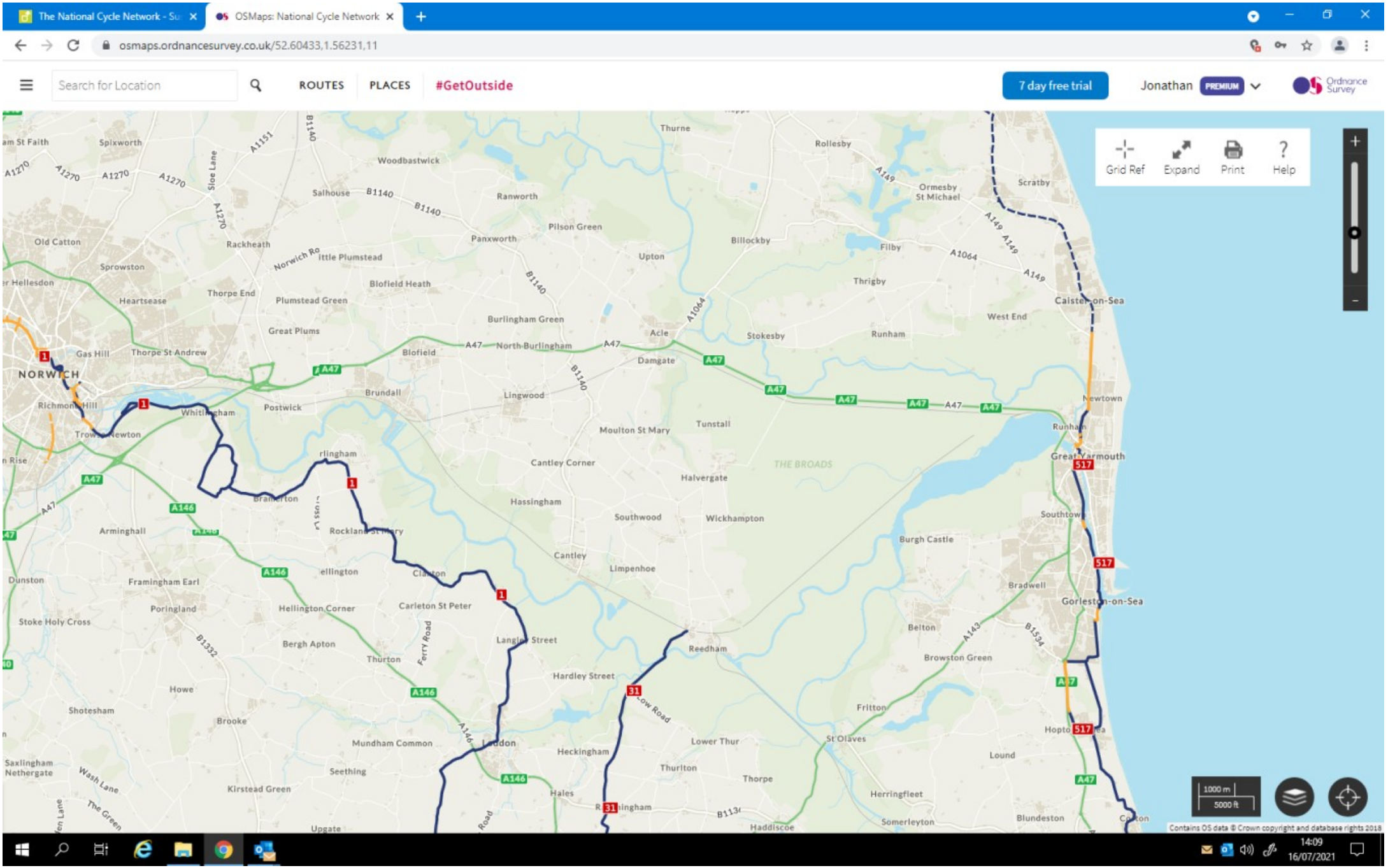
64 7.5m deep ASLs are preferred

Type of junction	Cycle movement being assessed	Suitable only for confident existing cyclists, and may be avoided by some experienced cyclists Conditions are most likely to give rise to the most common collision types Score = 0	Likely to be more acceptable to most cyclists, but may still pose problems for less confident or new cyclists The risk of collisions has been reduced by design layout or traffic management interventions Score = 1	Suitable for all potential and existing cyclists The potential for collisions has been removed, or managed to a high standard of safety for cyclists Score = 2
Roundabouts *In addition to and notwithstanding any of the above "any junction" conditions*	All movements	• Any type of roundabout with high traffic throughput.[65] • Normal roundabout with multi-lane flared approaches. • Any type of roundabout with annular cycle lane marked on the circulatory carriageway.	• Compact roundabout or raised mini roundabout with no more than moderate traffic throughput.[66] • Off-carriageway cycle track with crossings of entries and exits without cycle priority, crossing single traffic lanes with traffic flows < 4000 vehicles per day or 400 HGV/bus flow.	• Off-carriageway cycle track with crossings of entries and exits with signals or cycle priority.

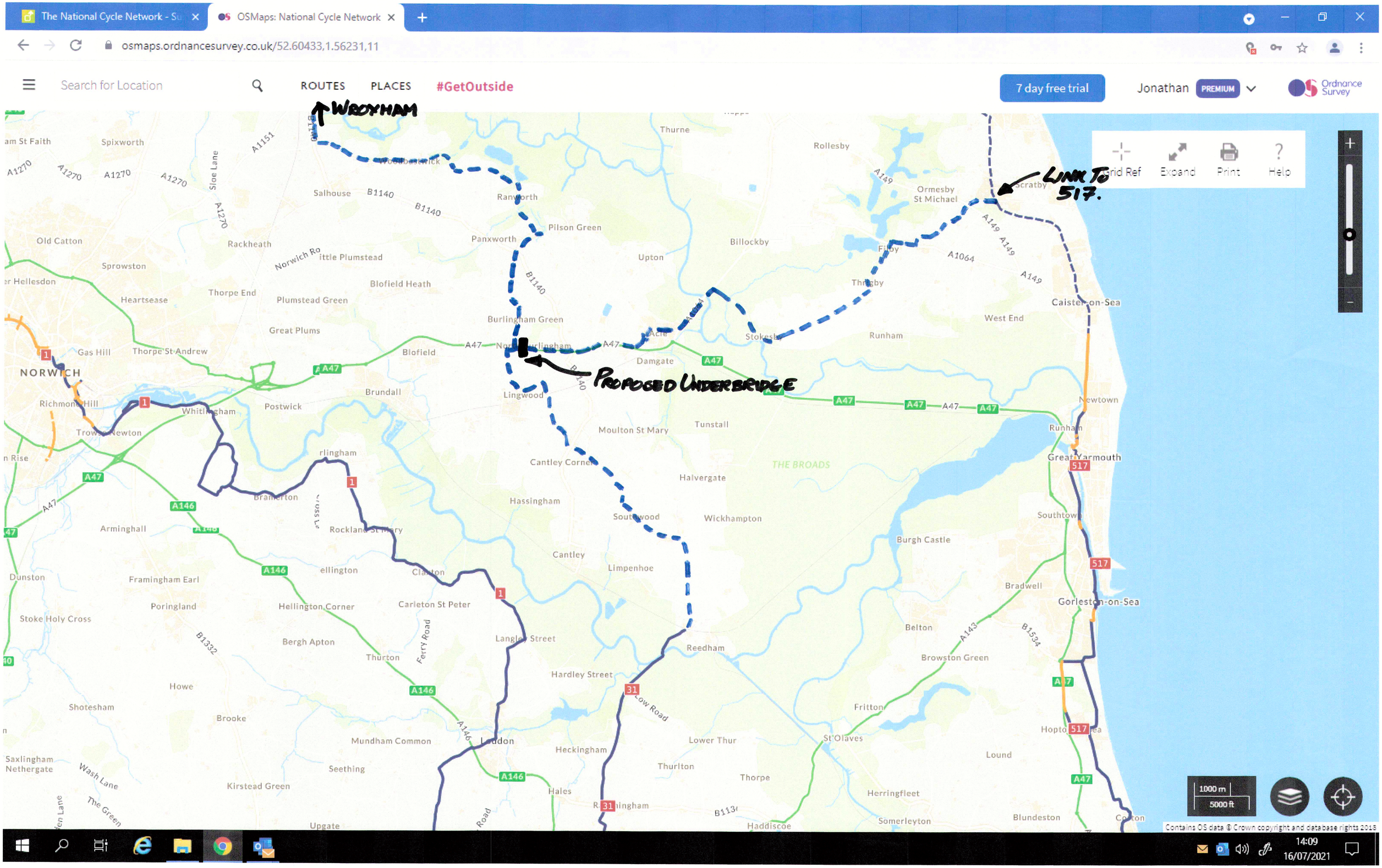
65 Heavy traffic throughput: >8000 motor vehicles per day and/or HGV and bus flow > 800 per day

66 Moderate traffic throughput: ≤8000 motor vehicles per day and/or HGV and bus flow ≤ 800 per day

APPENDIX F


The National Cycle Network - Su
OSMaps: National Cycle Network
osmaps.ordnancesurvey.co.uk/52.60433,1.56231,11
Search for Location
ROUTES
PLACES
#GetOutside
7 day free trial
Jonathan
PREMIUM
Ordnance Survey
Grid Ref
Expand
Print
Help
NORWICH
Thurne
Rollesby
Scratby
Ormesby St Michael
Caister-on-Sea
West End
Runham
Newtown
Great Yarmouth
Southtown
Gorleston-on-Sea
Bradwell
Burgh Castle
Belton
Browston Green
Fritton
St Olaves
Lound
Hopton
Blundeston
Somerleyton
Herringfleet
Thorpe
Lower Thurlton
Reedham
Langley Street
Hardley Street
Cantley
Limpenhoe
Southwood
Wickhampton
Halvergate
Cantley Corner
Moulton St Mary
Tunstall
Lingwood
Burlingham Green
North Burlingham
Damgate
Acle
Stokesby
Filby
Billockby
Upton
Pilson Green
Panxworth
Ranworth
Salhouse
Woodbastwick
Spixworth
Old Catton
Sprowston
Rackheath
Heartsease
Thorpe End
Plumstead Green
Great Plums
Blofield Heath
Blofield
Brundall
Postwick
Whitlingham
Trowse Newton
Richmond Hill
Gas Hill
Thorpe St Andrew
Arminghall
Framingham Earl
Poringland
Stoke Holy Cross
Dunston
Shotesham
Howe
Brooke
Mundham Common
Saxlingham Nethergate
Kirstead Green
Seething
Hellington Corner
Carleton St Peter
Bergh Apton
Thurton
Loddon
Heckingham
Hales
Haddiscoe
Upgate
THE BROADS
A47
A146
A1270
A1151
B1140
B1332
A1064
A149
A143
B1534
517
1
31
Grid Ref
Expand
Print
Help
1000 m
5000 ft
Contains OS data © Crown copyright and database rights 2018
14:09
16/07/2021

APPENDIX G



Proposed Extension To National Cycle Route No 31.

PLANS

Pond

27.4m

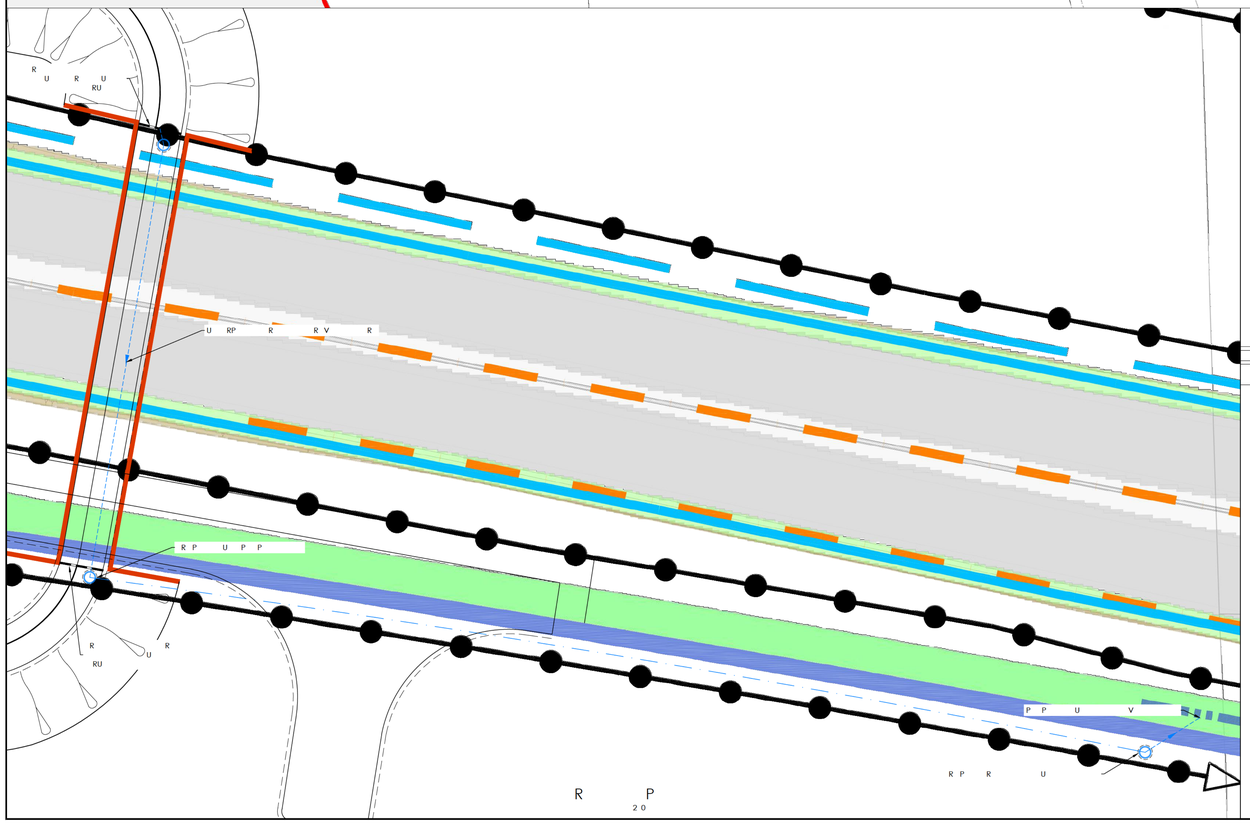
A 47

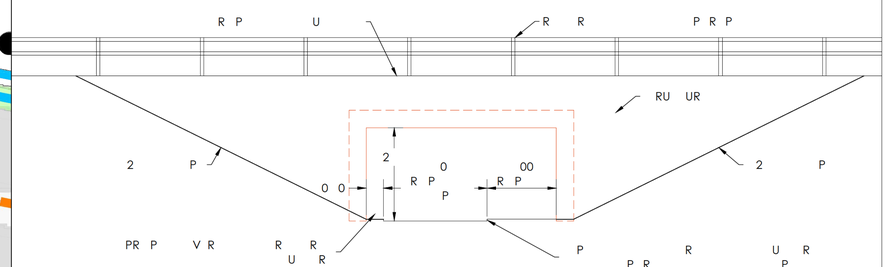
MAIN ROAD

26.2m

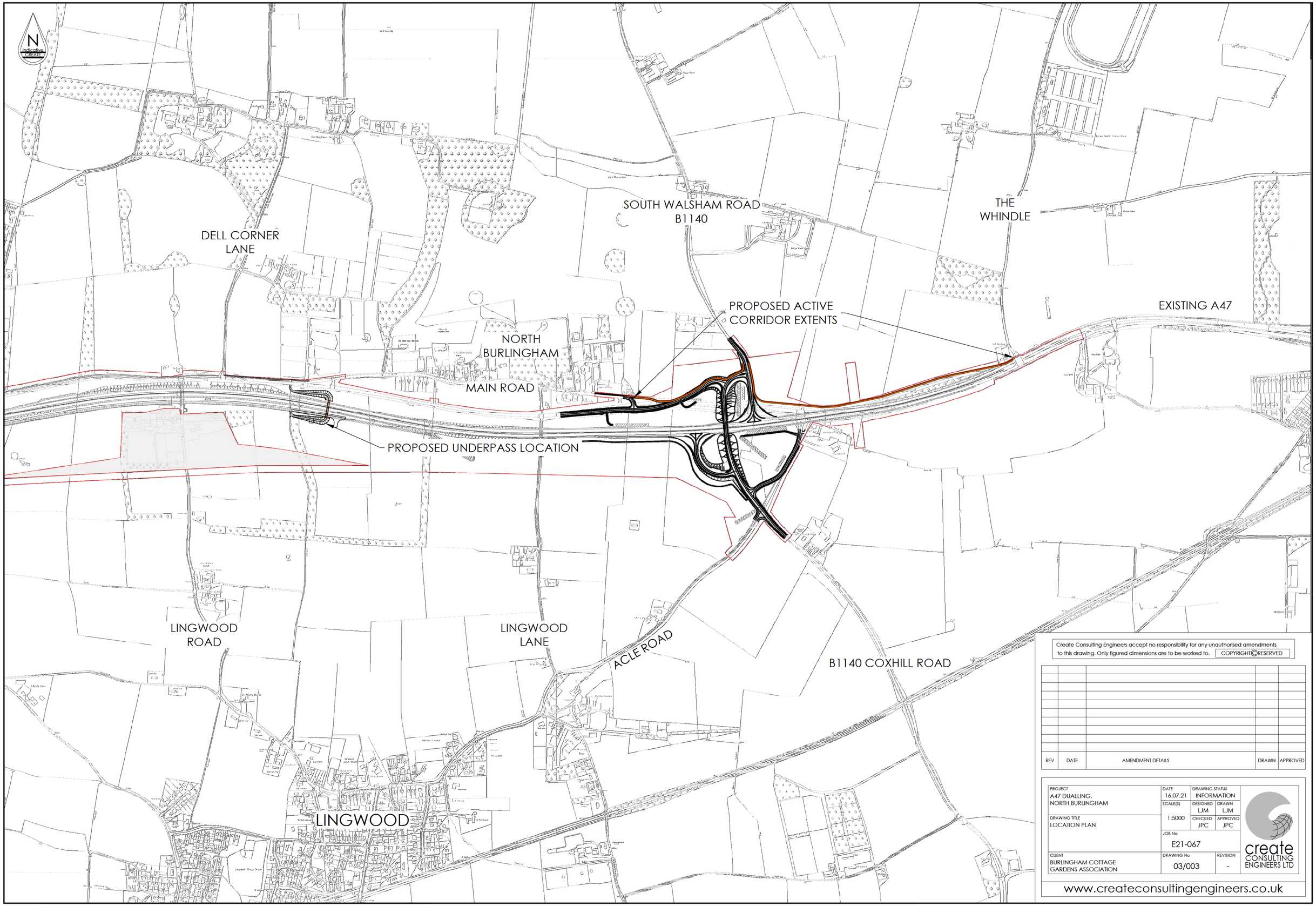
27.1m

Pond






NORTH BURLINGHAM ACCESS
DETRUNKED A47 EAST
Half Round Plantation
MP
150
200
300
350
400
Lay-by
Drain
A 47
ACLE CP
BEIGHTON CP
4750



REV	DATE	AMENDMENT DETAILS	DRAWN	APPROVED

PROJECT: A47 DUALLING, NORTH BURLINGHAM	DATE: 16.07.21	DRAWING STATUS: INFORMATION	
DRAWING TITLE: LOCATION PLAN	SCALE(S): 1:5000	DESIGNED: LJM / DRAWN: LJM / CHECKED: JPC / APPROVED: JPC	
	JOB No: E21-067		
CLIENT: BURLINGHAM COTTAGE GARDENS ASSOCIATION	DRAWING No: 03/003	REVISION: -	

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DO NOT SCALE ORIGINAL SHEET SIZE - A1 Landscape