# Greater Nottingham

Broxtowe Borough Council
Erewash Borough Council
Gedling Borough Council
Nottingham City Council
Rushcliffe Borough Council

## Habitats Regulations Assessment
June 2012

**(1) Habitats Regulations Appraisal Screening Record (Sept 2010)**

This report rigorously tested the proposed Aligned Core Strategies for its potential effects on European sites in accordance with the legislation, Conservation of Habitats and Species Regulations 2010.

**(2) Habitats Regulations Appraisal for Further Assessment (September 2010)**

The scoping report explained that due to the potential effect of Top Wighay Farm allocation on Park Forest a further assessment would be required in order to ascertain no likely significant effect and to future proof the plan and ensure its soundness. However as the prospective SPA is not formally classified this assessment was not a formal requirement.

In the case with the Top Wighay Farm allocation the potential effects were associated with air pollution. The scope of the detailed assessment was recommended to consider the current levels of pollution and the likely effects of further potential increases, either alone, cumulatively or in combination with other activities, on the composition of those habitats likely to support breeding nightjar and woodlark.

**(3) Natural England confirmed in November 2010**, that they considered it consistent with government guidance on HRA of development plans. The advocated risk based approach was followed on a "precautionary basis" and treated the prospective Sherwood SPA as if it was a pSPA.

However, Natural England noted that it was not possible to rule out the likelihood of a significant effect on the Park Forest part of the prospective Sherwood Forest SPA. This was as a result of increased nitrogen deposition affecting the habitats of birds for which the site may be classified, arising from the Top Wighay Farm allocation in the Aligned Core Strategies, in combination with other plans or projects. The recommendation concluded that an "appropriate assessment" may be required.

**(4) A Screening Assessment of Additional Nitrogen Deposition from the Development at Top Wighay Farm, Hucknall on the Proposed Sherwood Forest Special Protection Area (SPA) for Birds and the Integrity of the Habitat for Woodlark and Nightjar (August 2011)**

**(5) A Screening Assessment of Additional Noise from the Development at Top Wighay Farm, Hucknall on the Proposed Sherwood Forest Special Protection Area (SPA) for Birds and the Integrity of the Habitat for Woodlark and Nightjar (September 2011)**

These reports considered the potential of increase in nitrogen deposition and noise from traffic generated from proposed development at Top Wighay Farm of 500 dwellings, 34000sqm business space and a primary school. The reports both concluded that there would be no likely significant effects on the pSPA from additional nitrogen deposition or change in traffic noise levels.

**(6) Natural England confirmed on 1st December 2011** that the air pollution and additional noise impact assessments concluded no significant effect.

**(7) A Screening Assessment of Additional Nitrogen Deposition from the Development of 500 to 1,500 Houses at Top Wighay Farm, Hucknall on the Proposed Sherwood Forest Special Protection Area (SPA) for Birds and the Integrity of the Habitat for Woodlark and Nightjar (January 2012)**

**(8) A Screening Assessment of Additional Noise from the Development of 500 to 1,500 Houses at Top Wighay Farm, Hucknall on the Proposed Sherwood Forest Special Protection Area (SPA) for Birds and the Integrity of the Habitat for Woodlark and Nightjar (January 2012)**

The assessments were repeated based on different housing options. Both the air pollution and noise impacts assessments concluded no significant effect and this was confirmed by **(9) Natural England on 8th February 2012**.

**(10) Greater Nottingham Aligned Core Strategies Supplementary Information (Additional SHLAA Sites) Habitats Regulations Appraisal Screening Record (February 2012)**

This report provided supplementary information to the Habitats Regulations Appraisal (HRA) screening record for the Greater Nottingham Aligned Core Strategies (GNACS), September 2010.

The original HRA assessed general information on the development locations for the allocation of 52,050 new homes. Information available at the time of the assessment was given in policy 2 of the spatial strategy which provided for:

a. 25,320 homes in the Principal Urban Area of Nottigham
b. 4,200 new homes in each of two SUEs East of Gamston and South of Clifton
c. 1,480 new homes in one or more SUE in Broxtowe yet to be determined
d. 4,090 homes in or adjoining Hucknall Sub Regional Centre including SUEs at Top Wighay Farm and north of Papplewick Lane in Gedling
e. 4,420 new homes in or adjoining Ilkeston Sub-Regional Centre (including a SUE at Stanton)
f. Up to 8,340 new homes elsewhere in Greater Nottingham

It was recommended that, in the absence of more detailed analysis, a precautionary approach should be adopted and Policy 2 of the ACS should preclude urban extensions north of the B6386 north of Calverton, and west of the A60 and north of Ricket Lane at Ravenshead.

Since the completion of the original HRA, Gedling Borough Council have considered specific development locations as part of their Strategic Housing Land Availability Assessment. DTA were appointed to undertake a screening of the emerging development locations to inform Gedling Borough's final allocation selection.

The specific locations screened included:

a) Sites around Bestwood Village: around 800 dwellings; primarily to the north of the village.

b) Sites around Calverton: around 1700 dwellings; mainly to the north-west and south-west of the village, but none north of the B6386.

c) Sites around Ravenshead: around 450 dwellings; mainly to the south of the village, but none west of the A60 or north of Ricket Lane

The report concluded that the proposed development locations around Bestwood village and Ravenshead would not be likely to have a significant effect, either alone or in-combination, on any European site as a result of the scale and location of proposed development.

For Calverton, it was concluded that the proposed allocation of land for 1700 dwellings would be likely to have a significant effect on the prospective Sherwood Forest SPA in the absence of mitigation measures. The report identified a number of detailed mitigation measures and it was noted that if these were implemented in a planned and systematic way, it should avoid the likelihood of a significant effect on the prospective SPA by the development at Calverton, alone or in combination with other plans or projects.

The response received from **(11) Natural England on 22nd March 2012** to this further screening record confirmed that the Aligned Core Strategies could highlight that any development proposal coming forward at that location would need to include an appropriate mitigation package that would meet the requirements of the measures outlined in the HRA Screening Record. In addition, it was recommended that policy or supporting text may include an outline of principles of the mitigation strategy which would aim to prevent additional recreational pressure and disturbance as a result of development on nearby sensitive habitats.

Subsequent revisions have been made to the Publication Daft of the Aligned Core Strategies.

*(1)*

# *GREATER NOTTINGHAM ALIGNED CORE STRATEGIES*

## *OPTION FOR CONSULTATION FEBRUARY 2010*

## *HABITATS REGULATIONS APPRAISAL SCREENING RECORD*

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# Contents

## SUMMARY OF FINDINGS

1. The councils of Ashfield, Broxtowe, Erewash, Gedling, Nottingham City and Rushcliffe are working together to prepare a new aligned and consistent planning strategy for Greater Nottingham. Each local planning authority is separately progressing the strategy through the planning system as a Core Strategy Development Plan Document, but the strategy is expressed in a single document, referred to as the Greater Nottingham Aligned Core Strategies (the ACS). Greater Nottingham is made up of the administrative areas of these authorities, with the exception of Ashfield, where only the Hucknall part is included.

2. This is a record of the screening of the Greater Nottingham Aligned Core Strategies, 'Option for Consultation', February 2010 (excluding the Ashfield area), under the provisions of Article 6.3 of the Habitats Directive, and regulation 102 of the Conservation of Habitats and Species Regulations 2010, for its potential effects on European sites.

3. With three exceptions described below, the ACS, including the overall level of growth of approximately 49,060 new homes (excluding the Ashfield area) from 2009 to 2026 and a 7% increase in population to 2026, would not be likely to have a significant effect on any European site, alone or in combination with other plans or projects.

4. There would be no effect on the River Mease SAC.

5. Potential effects arising as a result of changes to air quality, deposition of air-borne pollutants, water abstraction, waste water discharges and increased recreation pressure on the South Pennine Moors SAC and SPA, the Peak District Dales SAC, the Humber Estuary SAC, SPA and Ramsar site and Rutland Water SPA and Ramsar site would not be likely to be significant, either alone or in combination with other plans or projects.

6. There could be potentially significant effects of the ACS on the prospective Sherwood Forest SPA. Two such effects could be avoided by modifications to policies in the next iteration of the ACS at Pre-Submission draft for representations.

7. Firstly, owing to the uncertainties as to the effects of the proximity of urban development on the prospective SPA, it is recommended that in the absence of more detailed analysis (beyond the scope of this appraisal), a precautionary approach should be adopted and Policy 2(1)(e) should preclude urban extensions north of the B6386 north of Calverton and, at Ravenshead, west of the A60 and north of Ricket Lane.

8. Secondly, the potential for a likely significant effect as a result of policy 15 of the Delivery Strategy promoting enhancement of the Greenwood Community Forest could attract higher numbers of visitors to the more sensitive parts of Sherwood Forest, including the prospective SPA. The likelihood of a significant effect cannot therefore be ruled out on the basis of objective information. Consequently, it is recommended that the following clause be added to Policy 15 in the Pre-Submission draft:

> "Enhancement of the Greenwood Community Forest will ensure that there would be no significant effect on the prospective Sherwood Forest Special Protection Area"

9. On the basis of objective information, it is not possible to rule out the likelihood of a significant effect on the Park Forest part of the prospective Sherwood Forest SPA, as a result of increased Nitrogen deposition affecting the habitats of the birds for which the site may be classified, arising from the Top Wighay Farm allocation in the ACS, in combination with other plans or projects. Therefore, if the prospective SPA is advanced with the intention of it being classified as a SPA, the ACS will need to be subject to further assessment. Depending on the stage the prospective SPA has progressed to, this may involve an 'appropriate assessment' before the ACS is adopted.

10. The conclusion of no likely significant effect on the Birklands and Bilhaugh SAC, as a result of increased recreation pressure arising from development provided for by the ACS, relies on the assumption that the relocation of the visitor centre and the improved habitat and access management measures are implemented in the foreseeable future, and in any event within the life of the ACS.

11. Assuming that the policy caveats in paragraphs 7 and 8 are added; that the project at the Birklands and Bilhaugh SAC is implemented as described in paragraph 10; and that no other changes are proposed in the Pre-Submission draft for representations that have not been assessed as part of this screening process (which could affect a European site), on a precautionary basis, the ACS will need to be subject to further assessment only in respect of the potential effects on the Park Forest part of the prospective Sherwood Forest SPA, as a result of the Top Wighay Farm allocation, in combination with other plans or projects, as described in paragraph 9 above.

12. In order to ensure compliance with the Regulations, and to 'future-proof' the ACS, the assessment of the prospective Sherwood Forest SPA required an unusual degree of application of the precautionary principle. It would assist the spatial planning of Greater Nottingham, and other local planning authority areas in the general locality, and their Habitats Regulations Appraisals in the future, if more information was available about:

    a) the relationship between the density and distribution of breeding nightjar and woodlark and the recreation use of the forest areas;

    b) the effects of proximity to urban areas on the prospective SPA; and

    c) how the access and habitat management of the prospective SPA could be coordinated to maximise recreation potential whilst ensuring no significant adverse effect on the breeding populations of Annex 1 birds for which it may be classified.

**ABBREVIATIONS USED IN THIS SUMMARY AND THE REPORT**

| | |
|---|---|
| ACS | Aligned Core Strategy |
| CROW Act | The Countryside and Rights of Way Act 2000 |
| ECJ | European Court of Justice |
| HRA | Habitats Regulations Appraisal |
| IBA | Important Bird Area |
| JNCC | Joint Nature Conservation Committee |
| LIFE | The EU financial instrument for the Environment |
| NE | Natural England |
| N | Nitrogen |
| $NH_3$ | Ammonia |
| $NO_x$ | Nitrogen oxide |
| NWT | Nottinghamshire Wildlife Trust |
| PSA | Public Service Agreement |
| SAC | Special Area of Conservation |
| $SO_2$ | Sulphur dioxide |
| SPA | Special Protection Area |
| SSSI | Site of Special Scientific Interest |
| SUE | Sustainable Urban Extension |

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# 1. INTRODUCTION

## The Planning Strategy for Greater Nottingham

1.1 The councils of Ashfield, Broxtowe, Erewash, Gedling, Nottingham City and Rushcliffe are working together to prepare a new aligned and consistent planning strategy for Greater Nottingham. Each local planning authority is separately progressing the strategy through the planning system as a Core Strategy Development Plan Document, but the strategy is expressed in a single document, referred to as the Greater Nottingham Aligned Core Strategies (the ACS). Ashfield are preparing a single core strategy for the whole of their administrative area, but with the Hucknall part being prepared in close alignment with the rest of Greater Nottingham. The Ashfield Core Strategy is subject to a separate Habitats Regulations Appraisal. Greater Nottingham is made up of the administrative areas of these authorities, with the exception of Ashfield, where only the Hucknall part is included. Greater Nottingham is shown on Map 1.1 on the next page.

1.2 The first public stage in preparing this strategy was an Issues and Options consultation, which took place in the summer of 2009. The Issues and Options consultation helped to shape the next stage which was the 'Option for Consultation' document, published in February 2010, which set out how the councils think Greater Nottingham should develop over the period to 2026.

1.3 This is a record of the screening of the Greater Nottingham Aligned Core Strategies, 'Option for Consultation', February 2010, under the provisions of Article 6.3 and 6.4 of the Habitats Directive[1], for its potential effects on European sites.

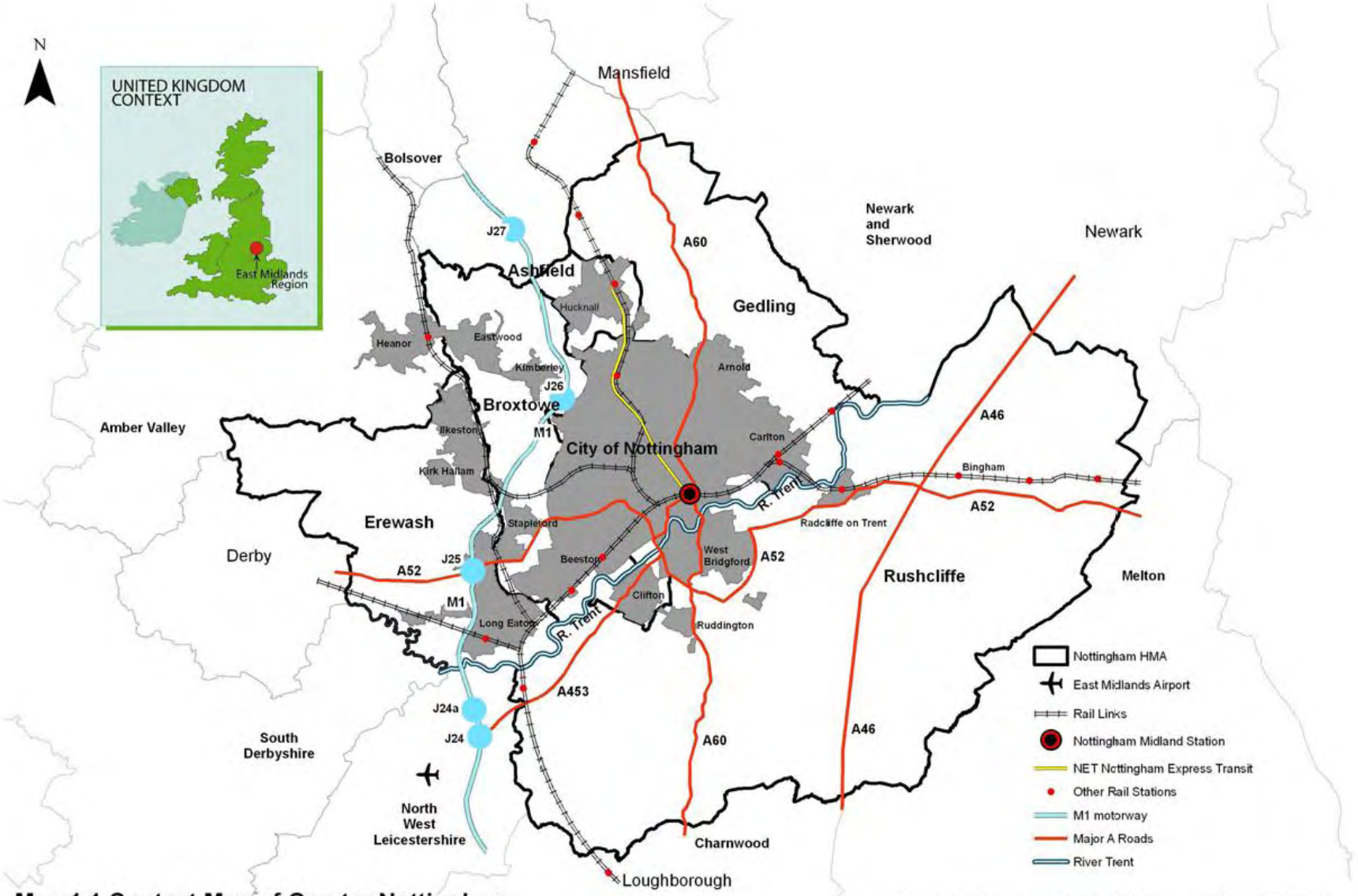
## Need for Appraisal

1.4 The requirements of the Habitats Directive are transposed into English law by the *Conservation of Habitats and Species Regulations* 2010, (here referred to simply as "the Regulations"). Part 6 Chapter 8 of the Regulations relates to land use plans in England. Land use plans are defined in regulation 107(c) so as to include Core Strategy Development Plan Documents to be adopted under Part 2 of the *Planning and Compulsory Purchase Act*, 2004.

1.5 One of the principal requirements of the Regulations is that before a Core Strategy Development Plan Document is adopted the planning-making authority, or in this case authorities, must comply with the requirements of regulations 102 – 105, to the extent that they are relevant in relation to the plan. This includes assessing the potential effects of the plan on European Sites (defined in paragraphs 1.17 - 18 below). Such an assessment for a plan is generally referred to as a 'Habitats Regulations Appraisal' (or Assessment).

1.6 The first step in the process is to establish whether the plan would be likely to have a significant effect on a European site, either alone or in combination with other plans or projects. This early stage is referred to as the 'screening' of the plan for its effects on European sites. If a plan is likely to have a significant effect on any European site, either alone or in combination with other plans or projects, it must be subject to an 'appropriate assessment' by the planning authority, in accordance with regulation 102 of the Regulations.

[1] Council Directive 92/43/EEC of 21st May 1992 on the conservation of natural habitats and of wild fauna and flora




**Map 1.1 Context Map of Greater Nottingham**

1.7 Planning authorities should, if necessary, adapt their plans during the course of, or as a result of, the Habitats Regulations Appraisal to ensure that the final or later versions will not have adverse effects on any European site.

1.8 Before progressing to the next stage, which will be the 'Pre-Submission' draft for representations, the Councils wish to test the ACS for its effects on European sites, in accordance with the Regulations. Testing the plan at this stage means that if any aspect of the plan needs to be modified to avoid adversely affecting a European site, the changes can be made before the 'Pre-Submission' draft is published.

**Method of the Appraisal**

1.9 Figure 1, at the end of this section, illustrates the appraisal process generally. The screening stage only is described in more detail in Annex 1. There is no prescribed methodology for appraisal, or content for an appraisal record, set out in the Regulations. It is necessary, on a plan by plan basis, to decide how best to carry out the Habitats Regulations Appraisal, what information and analysis may be required and what assumptions and predictions will need to be made.

1.10 The Government has produced guidance on the Habitats Regulations Appraisal of development plans[2]; this is supplemented by guidance from Natural England[3]. This appraisal record is consistent with the guidance in these documents to the extent that the guidance is relevant to the ACS at this stage.

1.11 More recently the Countryside Council for Wales has also produced guidance[4], which is consistent with and builds on the advice of the Welsh Assembly Government in TAN 5[5]. Scottish Natural Heritage has also produced guidance, in association with the Scottish Government, for all plan-making bodies in Scotland on the appraisal of plans under the Habitats Regulations[6]. Whilst not directly applicable in England these guidance documents represent the latest in good practice in Britain and they have also been taken into account in the current appraisal.

1.12 All aspects of the plan are systematically checked and assigned to a category from A – D according to the potential for effects on the European sites potentially affected. The categories are:

(a) Category A: elements of the plan that would have no negative effect[7] on a European site at all;

(b) Category B: elements of the plan that could have an effect, but the likelihood is there would be no significant effect on a European site either alone or in combination with other elements of the same plan, or other plans or projects;

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[2] Department for Communities and Local Government, 2006, *Planning for the Protection of European Sites: Assessment of Plans under the Habitats Regulations, Guidance for Regional Spatial Strategies and Local Development Documents* http://www.communities.gov.uk/archived/publications/planningandbuilding/planning2

[3] Tyldesley, D., 2009, *The Habitats Regulations Assessment of Local Development Documents Revised Draft Guidance for Natural England*, Natural England, Sheffield in press

[4] Tyldesley, D., November 2009, *Draft Guidance for Plan Making Authorities in Wales: The Appraisal of Plans under the Habitats Directive,* for Countryside Council for Wales, Bangor

[5] Welsh Assembly Government, 2009, Planning Policy Wales, Technical Advice Note TAN 5 Nature Conservation and Planning Annex 6 www.cymru.gov.uk

[6] http://www.snh.gov.uk/planning-and-development/environmental-assessment/habitat-regulations-appraisal/

[7] 'Negative' effects, in the context of this and all the following lists, are effects that would be likely to undermine the conservation objectives of a European site, see European Court of Justice Case C-127/02 known as the *Waddensee Ruling* 7th September 2004, paragraph 47

(c) Category C: elements of the plan that would be likely to have a significant effect alone and will require the plan to be subject to an appropriate assessment before the plan may be adopted;

(d) Category D: elements of the plan that would be likely to have a significant effect in combination with other elements of the Local Development Plan, or other plans or projects and will require the plan to be subject to an appropriate assessment before the plan may be adopted.

1.13 Categories A, C and D are subdivided to more clearly explain the different reasons for assignment to these categories. The four categories and their sub-divisions are discussed in detail in Annex 1.

1.14 A number of objectives and policies in core strategies typically cover a range of policy issues or aims and may have several 'parts' to them, which could have differing effects on European sites. Consequently, some objectives, policies and proposals in the ACS could be assigned to more than one category or sub division. Should a policy or proposal fall partly into category C or D, then the assessment will indicate which part of the policy or proposal would be likely to have that effect, so that the scope of the 'appropriate assessment' is clear.

**The Greater Nottingham Aligned Core Strategies Option for Consultation**

1.15 The ACS consists of three parts, Part 1 introduces the concept of aligned Core Strategies. Part 2 looks at the character of Greater Nottingham now and in the future, setting out a '***vision***' of what Greater Nottingham will look like in 2026 if the strategy in the ACS is implemented, together with ***Strategic Objectives*** that set out the key principles by which this vision will be achieved. Part 3 is the ***Delivery Strategy***, including a set of policies and proposals, which form a strategic and consistent policy approach to delivering the vision. The main proposals of the ACS are illustrated on a ***Key Diagram***, which is reproduced as Map 1.2 on the next page.

**References**

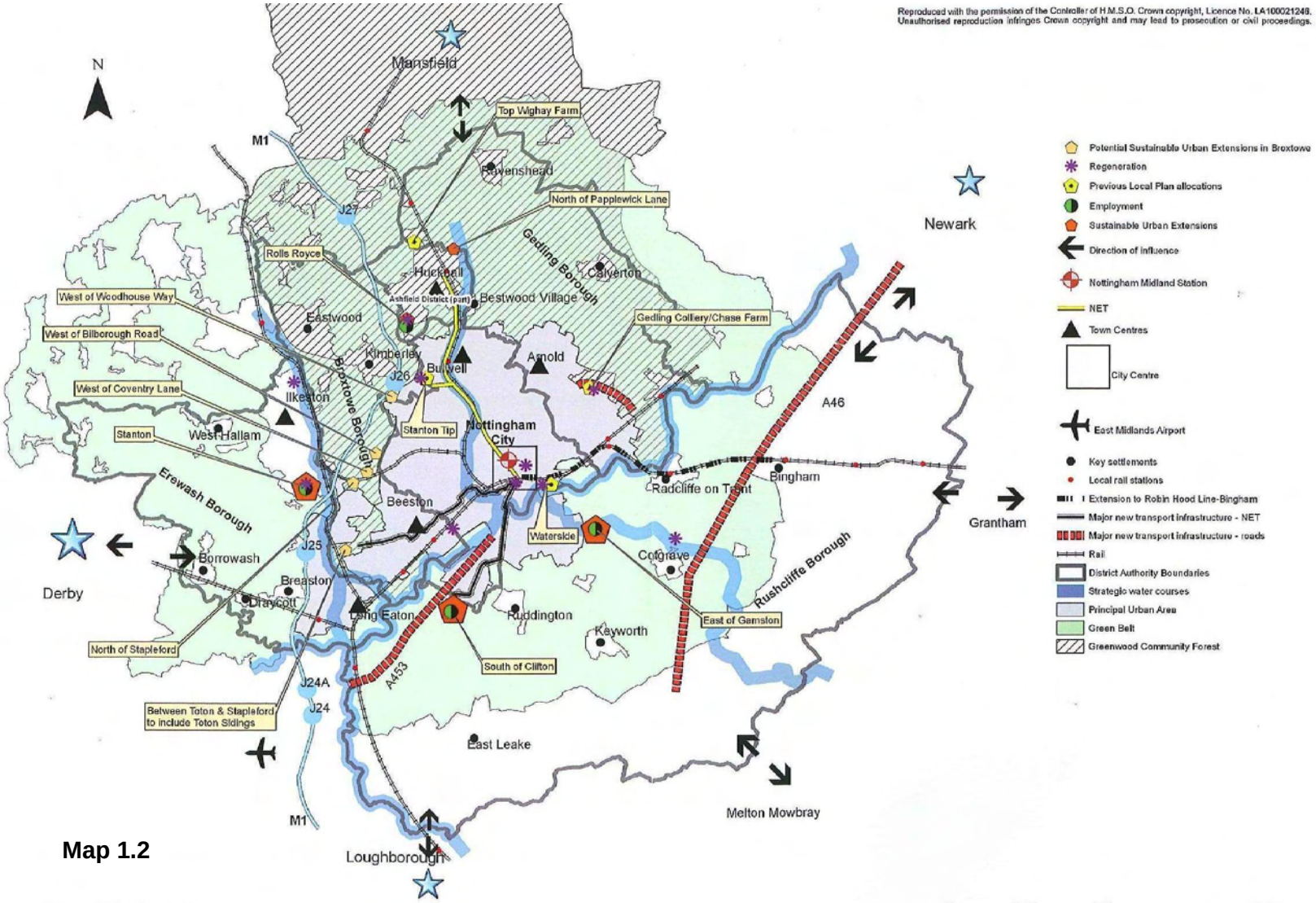
1.16 In order to reduce the length and complexity of this appraisal record, a number of important documents are referred to, without necessarily reproducing their contents. The full titles and relevant web links are included in footnotes throughout the appraisal record.

**European Sites**

1.17 'European Sites' are Special Protection Areas (SPA), classified under the EC Birds Directive 2009[8], and Special Areas of Conservation (SAC), candidate Special Areas of Conservation (cSAC) designated under the EC Habitats Directive 1992, together with SPAs and SACs and cSACs beyond the 12nm limit of territorial waters, known as European Offshore Marine Sites (EOMS).

1.18 It is Government policy, set out in paragraph 6 of Planning Policy Statement 9, *Biodiversity and Geological Conservation*[9] to treat proposed SPA (pSPAs) and listed Ramsar sites as if they are fully designated European sites.

[8] Council Directive on the conservation of wild birds of 30th November 2009 (2009/147/EC)
[9] Office of the Deputy Prime Minister, 2005, Planning Policy Statement 9 *Biodiversity and Geological Conservation* paragraph 6 at http://www.communities.gov.uk/publications/planningandbuilding/pps9




**Map 1.2**

**Key Diagram**

1.19 The European sites potentially affected by this plan are listed and described in section 2 and Annex 2 and shown on Map 2.1.

**The prospective Sherwood Forest SPA**

1.20 In addition to the classified SPAs and designated SACs, this appraisal has had regard to a prospective SPA in Sherwood Forest. Natural England has confirmed that Sherwood Forest satisfies Stage 1 of the SPA Selection Guidelines for breeding nightjar and woodlark. Natural England would therefore advocate the further consideration of Sherwood Forest against Stage 2 of the SPA Selection Guidelines at the appropriate stage during the UK SPA Review process. However, as the full SPA selection process has yet to be formally implemented and the formal UK Review of the existing suite of sites for nightjar and woodlark is pending, Natural England has not yet formed a view on whether a site within the Sherwood Forest region is one of the 'most suitable territories' for these two species. Accordingly, Natural England has not so far provided any advice to the Secretary of State on the selection of any SPA in the Sherwood Forest area.

1.21 Nevertheless, there is a real possibility of Sherwood Forest being recommended for future classification as a SPA, on the basis of the evidence from the national species surveys and the interpretation of that data. There is no provision in domestic legislation or expressed policy for any protection to be afforded to sites that appear to have some ornithological interest (unless they are already notified as SSSIs) prior to them being considered potential SPAs by the Secretary of State. Whilst Natural England is of the view that this site warrants continued consideration, it is not yet of the view that this area is among the most suitable territories for these species in terms of Article 4.1 of the Birds Directive. Natural England takes the view that the interpretation of ECJ judgements on sites with 'should be SPA' status for the UK, and at what stage in the UK designation process such a status should arise, are matters for the Secretary of State.

1.22 Accordingly, the Sherwood Forest area is not in Natural England's view a "should be" SPA and it is not yet a pSPA. However in view of the data review, suggesting that the Sherwood Forest site satisfies Stage 1 of the SPA Selection Guidelines, Natural England advocates that a risk-based approach or similar be adopted until such a time that the full SPA Review process has been completed and an announcement has been made by the Secretary of State on the future classification of Sherwood Forest as a SPA.

1.23 Before formal classification the area would first be a pSPA, and may remain of that status for some time. Owing to judgments in the European Court of Justice, a plan may only be adopted if it is certain that the plan will not cause pollution or deterioration of a pSPA or significant disturbance of the bird species for which a pSPA has been proposed (either alone or in combination with other plans or projects) and the derogation provisions of Article 6.4 (regulation 103) do not apply[10]. This is a more strict protection than that in regulations 102 and 103 of the Habitats Regulations applying to classified SPAs. In light of this, and in order to 'future-proof' the ACS, it has been decided that, on a precautionary basis, this appraisal will treat the prospective Sherwood Forest SPA as if it was a pSPA, thus affording it the equivalent to the highest level of protection during appraisal that it would have at any stage in its potential route to classification.

[10] European Court of Justice in Case C-244/05 *Bund Naturschutz in Bayern eV and others v Freistaat Bayern.* European Court of Justice in Case C-374-98 *Commission v French Republic* (*"Basses Corbieres"*)

**Scope of the Appraisal**

1.24 Some elements of the policies presented in the ACS in February still require to be worked up in more detail for the next 'Pre Submission' version of the ACS, such as the detail of the mix of uses in the Sustainable Urban Extensions (SUEs), and their precise infrastructure requirements. However, there is sufficient information about the nature, scale and location of the SUEs to enable a meaningful assessment to be made. In the case of Broxtowe the appraisal will need to consider whether the actual location of the SUEs would make any difference to the outcomes, and if so, how.

1.25 The guidance documents referred to in paragraphs 1.10 – 1.11 recognise that it is not possible to subject a plan to the same level of assessment under regulation 102 as can be applied to a specific project under regulation 61 of the Habitats Regulations. As with more detailed assessments of projects under the Habitats Regulations, the appraisal of plans is also based on the precautionary principle, but the variable, and usually broader, level of Habitats Regulations Appraisal is acknowledged by the EC, for example in the Advocate General's opinion leading up to the European Court of Justice's judgment in *Commission v UK*[11]. An appraisal should be as rigorous as possible, should adopt the precautionary approach embedded in the Directive, and should ensure that the tests set out in Article 6.3 and 6.4 of the Habitats Directive are met following a systematic, recognised and robust methodology. However, the potential effects of the plan that should be assessed need to be kept in perspective. The appraisal is not trying to identify every conceivable or hypothetical effect, but aims to identify real risks that could have a significant effect on a European site so that such risks can be eliminated if possible.

1.26 This appraisal checks all the elements of the ACS for the likelihood of significant effects, either alone or in combination with other plans or projects. This includes the plan's vision, objectives, spatial strategy, policies and proposals. The effects of the plan as a whole have also been considered.

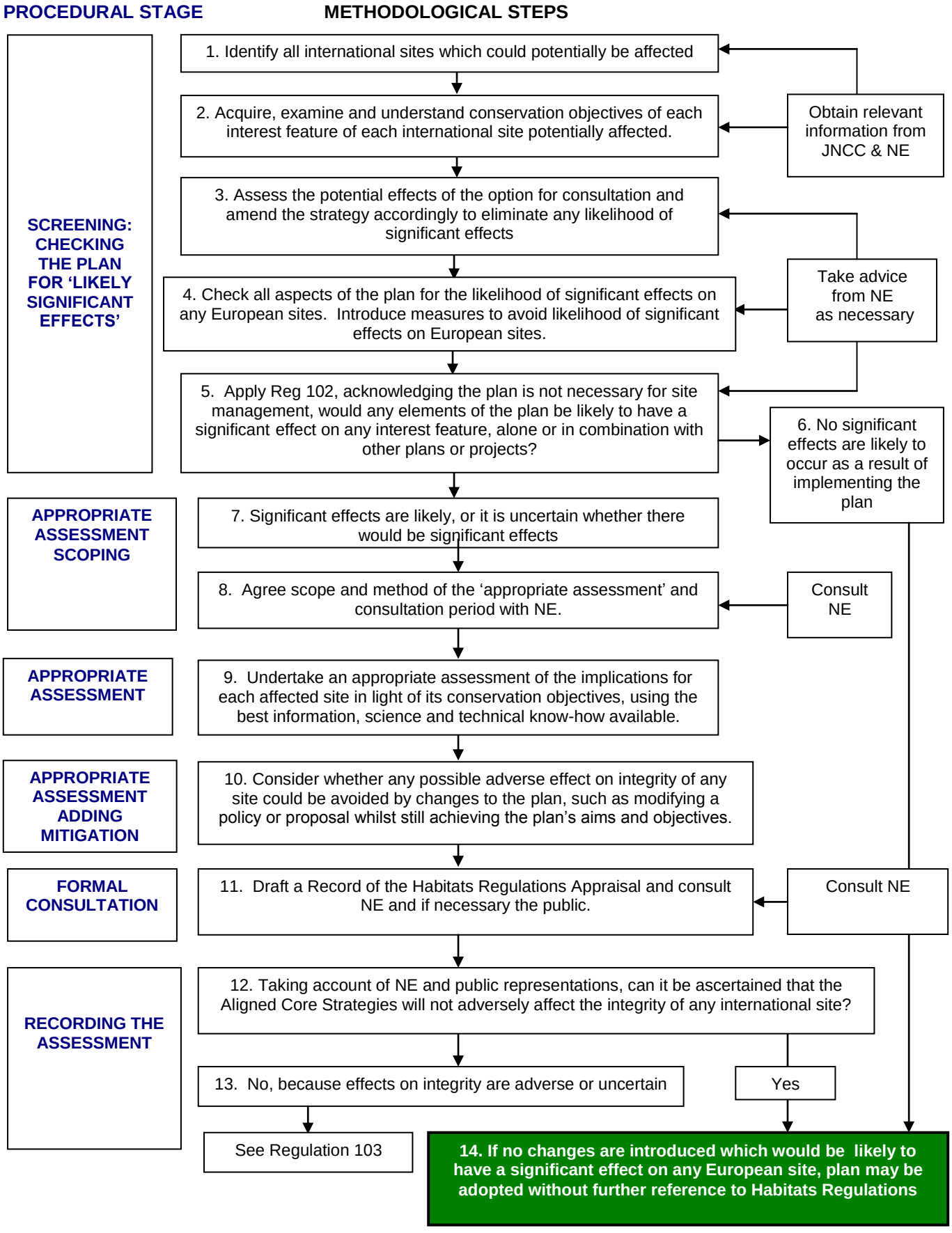
1.27 Appraisal is confined to the changes proposed by the planning authorities in the ACS itself. This includes the implications of necessary water supply and waste, including waste water, disposal, where these could potentially affect European sites and they are proposed as part of, or an inevitable consequence of, the plan. The appraisal does not attempt to assess the potential effects of transport projects proposed by Government, but referred to in the ACS, e.g. the A453T and A46T improvements.

1.28 On 6th July 2010 the Secretary of State revoked the East Midlands Regional Spatial Strategy. A consequence of this is that the planning authorities may decide to reduce the level of provision (and therefore the scale of allocations in the Sustainable Urban Extensions) for new housing development in the next stage of the aligned core strategy process. However, this appraisal proceeds to assess the effects of the ACS on a 'worst case' scenario, with no reduction in dwelling numbers.

1.29 The Brief required the exclusion of the Ashfield area element of the ACS in this appraisal because it had already been assessed. Whilst in some respects the development proposals at Hucknall in Ashfield are an intrinsic part of the ACS and it is difficult to separate them out, this appraisal complies with the brief by omitting appraisal of Policy 2(1)(c) of the Spatial Strategy, except for the proposed 600 dwellings north of Papplewick Lane and the 500 dwellings at Top Wighay Farm, in Gedling, and by assessing the effects of a growth of 49,060 dwellings instead of 52,050, from 2009 to 2026. A growth of 7% in population is retained.

[11] Case C-6/04, *Commission v United Kingdom.*

## FIGURE 1
## OUTLINE OF THE PROCEDURE FOR HABITATS REGULATIONS APPRAISAL



## 2. EUROPEAN SITES POTENTIALLY AFFECTED

### Identifying European sites potentially relevant to the appraisal

2.1 In order to identify the European sites that may be affected by the plan it is necessary to cast a wide net around the plan area and to understand how land use and development that is proposed by the ACS may affect land that is outside the plan boundaries as well as land within it. It is necessary to identify all European sites:

(a) in the plan area; and

(b) outside the plan area that may be affected, for example, through related infrastructure such as water supply reservoirs or treatment works or other waste stream infrastructure that receive waste or discharges from the plan area; and

(c) outside the plan area that may experience significant indirect effects, such as increased pollution or disturbance from recreational pressure.

2.2 In order to structure the selection of European sites potentially relevant to the appraisal, a checklist is used which is developed from good practice guidance. The completed checklist is reproduced in Figure 2 on the following page.

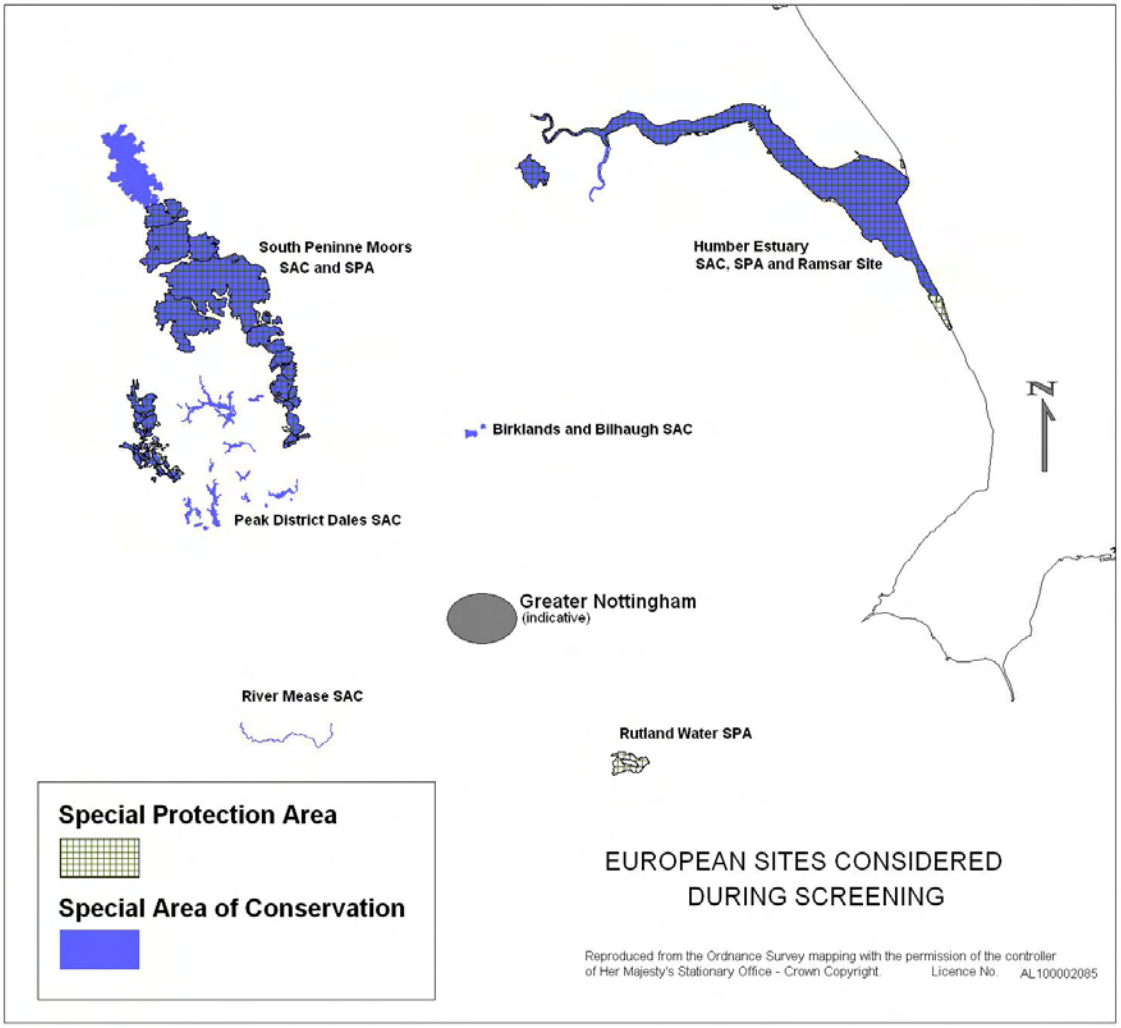
### Sites considered not to be affected

2.3 Before full site information was obtained for the River Mease SAC, it was established that the Greater Nottingham area lies outside the catchment of this river system; no waste water is pumped into the River Mease from Greater Nottingham; and no water is abstracted from the River Mease to supply Greater Nottingham. It was therefore determined **there could be no effect on the River Mease SAC from the Greater Nottingham Aligned Core Strategies**.

2.4 Effluent from waste water treatment works in Greater Nottingham discharge directly or indirectly into the River Trent. The River Trent flows into the Humber Estuary which is a designated SAC, a classified SPA and a listed Ramsar Site. However, the minimum run of river distance from Greater Nottingham to the designated areas is approximately 95km. As the relevant competent authority in respect of discharge to water, the Environment Agency has existing guidance in relation to water quality impacts on European Sites. The Agency's Operational instruction 141-07 entitled "Applying the Habitats Regulations to Water Quality permissions to discharge" includes distance based screening criteria for the assessment of likely significant effect. With regard to discharges beyond 50km in the upstream catchment section 6.1.2 states "there may be special cases to take into account but generally discount discharges beyond this distance". The potential increases in respect of the GNACS would not represent a 'special case'. On the basis of the screening criteria developed and adopted by the relevant competent authority, it is therefore determined that **discharges that can be associated with the Greater Nottingham Aligned Core Strategies are not likely to have a significant effect, either alone or in-combination, on the Humber SAC/ SPA/ Ramsar.**

| FIGURE 2<br>CHECKLIST<br>SELECTING SITES THAT SHOULD BE CONSIDERED IN THE APPRAISAL | | |
|---|---|---|
| **Criteria** | **Sites to check** | **Sites selected for consideration** |
| All plans | Sites within the plan area | None, but see paras 1.20 - 23 re **Sherwood Forest prospective SPA** |
| For plans that could affect the aquatic environment | Sites upstream or downstream of the plan area in the case of river or estuary sites | **The Humber Estuary SAC, SPA & Ramsar site** |
| | Peatland and other wetland sites with relevant hydrological links to land within the plan area, irrespective of distance from the plan area | None |
| For plans that could affect mobile species | Sites which have significant ecological links with land in the plan area, for example, land in the plan area may be used by migratory birds, which also use a SPA, outside the plan area, at different times of the year | None |
| For plans that could increase recreational pressure on European sites potentially vulnerable to such pressure | Such European sites in the plan area | None, but see paras 1.20 - 23 re **Sherwood Forest prospective SPA** |
| | Such European sites within a reasonable travel distance of the plan area boundaries that may be affected by local recreational or other visitor pressure from within the plan area<br>(the appropriate distance in each case will need to be considered on its merits, in light of any available evidence) | **The Birklands and Bilhaugh SAC** |
| | Such European sites within a longer travel distance of the plan area, which are major (regional or national) visitor attractions such as European sites which are National Nature Reserves where public visiting is promoted, sites in National Parks, coastal sites and sites in other major tourist or visitor destinations<br>(the appropriate distance in each case will need to be considered on its merits, in light of any available evidence) | **The Peak District Dales SAC**<br>**South Pennine Moors SAC/SPA**<br>**Rutland Water SPA and Ramsar site** |
| For plans that would increase the amount of development | Sites that are used for, or could be affected by, water abstraction in or close to the plan area | **South Pennine Moors SAC**<br>**River Mease SAC** |
| | Sites used for, or could be affected by, discharge of effluent from waste water treatment works or other waste management streams serving land in the plan area, irrespective of distance from the plan area | **The Humber Estuary SAC, SPA & Ramsar site,**<br>**River Mease SAC** |
| | Sites that could be affected by transport or other infrastructure | None |
| | Sites that could be affected by increased deposition of air pollutants arising from the proposals, including emissions from significant increases in traffic | **The Birklands and Bilhaugh SAC**<br>**South Pennine Moors SAC/SPA**<br>**Sherwood Forest prospective SPA** |
| For plans that could affect the coast, | Sites in the same coastal 'cell', or part of the same coastal ecosystem, or where there are interrelationships with or between different physical coastal processes. | None |

**Map 2.1**


South Peninne Moors
SAC and SPA
Humber Estuary
SAC, SPA and Ramsar Site
Birklands and Bilhaugh SAC
Peak District Dales SAC
Greater Nottingham
(indicative)
River Mease SAC
Rutland Water SPA
N
Special Protection Area
Special Area of Conservation
EUROPEAN SITES CONSIDERED
DURING SCREENING
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**Sites considered to be potentially affected**

2.5 Having excluded any effect on the River Mease SAC and the Humber Estuary SAC, SPA and Ramsar site, it will be seen from the checklist that the sites listed below have been identified as requiring consideration as part of the Habitats Regulations Appraisal of the ACS.

- The Birklands and Bilhaugh SAC
- South Pennine Moors SAC
- South Pennine Moors SPA
- The Peak District Dales SAC
- Rutland Water SPA
- Rutland Water Ramsar site (not shown separately on Map 2.1 because at this scale it is coincident with the Rutland Water SPA)
- The Sherwood Forest prospective SPA (see Map 2.2).

2.6 Site interest features – the reasons why the site is designated (SAC), classified (SPA) or listed (Ramsar) - are summarised in Table 1. The citation for each of the sites is available from the JNCC website[12].

**Table 1 Site interest features of European Sites considered to be potentially affected**
**1A Special Areas of Conservation**
**Habitats Directive**

| **European Site** | **Annex 1 habitats that are a primary reason for site selection:** | **Annex 1 habitats present as a qualifying feature, but not as a primary reason for site selection:** | **Annex II species that are a primary reason for site selection** | **Annex II species present as a qualifying feature, but not a primary reason for site selection** |
|---|---|---|---|---|
| The Birklands and Bilhaugh SAC | 9190 Old acidophilous oak woods with *Quercus robur* on sandy plains | | | |
| South Pennine Moors SAC | 4030 European dry heaths<br><br>7130 Blanket bogs * a priority feature<br><br>91A0 Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles | 4010 Northern Atlantic wet heaths with *Erica tetralix*<br><br>7140 Transition mires and quaking bogs | | |
| The Peak District Dales SAC | 6210 Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)<br><br>9180 *Tilio-Acerion* forests of slopes, screes and ravines * Priority feature | 4030 European dry heaths<br><br>6130 Calaminarian grasslands of the *Violetalia calaminariae*<br><br>7230 Alkaline fens<br><br>8120 Calcareous and calcshist screes of the montane to alpine levels (*Thlaspietea rotundifolii*)<br><br>8210 Calcareous rocky slopes with chasmophytic vegetation | 1092 White-clawed crayfish *Austropotam-obius pallipes* | 1096 Brook lamprey *Lampetra planeri*<br><br>1163 Bullhead *Cottus gobio* |

[12] Natura 2000 European sites **http://www.jncc.gov.uk/page-4**

| 1B Special Protection Areas<br>Birds Directive | | |
|---|---|---|
| **European Site** | **Qualifying Species Article 4(1)** | **Qualifying Species Article 4(2)** |
| Rutland Water SPA | Overwintering Gadwall *Anas strepera* and Shoveler *Anas clypeata* | A wetland of international importance the area regularly supports 23,501 individual waterfowl (5 year peak mean 1991/2 - 1995/6) including: Lapwing *Vanellus vanellus*, Coot *Fulica atra*, Goldeneye *Bucephala clangula*, Tufted Duck *Aythya fuligula*, Pochard *Aythya ferina*, Teal *Anas crecca*, Wigeon *Anas penelope*, Cormorant *Phalacrocorax carbo*, Great Crested Grebe *Podiceps cristatus*, Little Grebe *Tachybaptus ruficollis*, Shoveler *Anas clypeata*, Gadwall *Anas strepera*. |
| South Pennine Moors (Phases 1 and 2) | Golden Plover *Pluvialis apricaria*<br>Merlin *Falco columbarius*<br>Peregrine *Falco peregrines*<br>Short-eared Owl *Asio flammeus* | Dunlin *Calidris alpina schinzii* |
| The prospective Sherwood Forest SPA | Assumed to be Nightjar *Caprimulgus europeaus* and Woodlark *Lullula arborea* | None |
| **1C Ramsar Sites** | | |
| **Ramsar Site** | **Ramsar Criteria** | |
| Rutland Water | Ramsar criterion 5 assemblages of international importance: 19,274 waterfowl (5 year peak mean 1998/99-2002/2003)<br>Ramsar criterion 6 – species/populations occurring at levels of international importance. Species with peak counts in spring/autumn:<br>Gadwall *Anas strepera strepera*, NW Europe 1014 individuals, representing an average of 1.6% of the population (5 year peak mean 1998/9-2002/3)<br>Northern shoveler *Anas clypeata*, NW & C Europe 619 individuals, representing an average of 1.5% of the population (5 year peak mean 1998/9- 2002/3)<br>Species/populations identified subsequent to designation for possible future consideration under criterion 6. Species with peak counts in spring/autumn:<br>Mute swan *Cygnus olor*, Britain 563 individuals, representing an average of 1.5% of the population (5 year peak mean 1998/9- 2002/3) | |

2.7 Each site is briefly referred to below. Annex 2 provides a more detailed analysis of each site, including a review of the interest features (habitats or species) for which it was designated, classified or listed, the site's conservation objectives, its condition and any existing activities or operations which are having an adverse effect upon the sites' interest features, particularly but not limited to those that could be relevant to the effects on the site of the ACS. This information is necessary in order to assess whether the policies or proposals in the ACS could potentially affect the sites.

**Birklands and Bilhaugh SAC**

2.8 The SAC extends to 271.84ha located in Central Nottinghamshire, in the Newark and Sherwood District Council area. It lies approximately 15km north of Greater Nottingham. The SAC is selected as one of only four known outstanding localities of old acidophilous oak woods with *Quercus robur* in the UK. The majority (88.62%) of the site meets the Government's PSA target for site condition, but the presence of the buildings and hard standings in the country park in the SAC means that about 11% of the site remains in unfavourable condition, no change.

2.9 The site lies within Sherwood Forest which is popular for recreation. Visitor pressure can damage the fragile habitat. Air pollution from the industrial towns can cause a

reduction in lichen diversity. Coal-mining has been undertaken beneath the site from Welbeck and Thoresby collieries and may recur again, subject to Habitats Regulations procedures, this can cause surface subsidence which has the potential to affect woodland condition.

**South Pennine Moors SAC**

2.10 This SAC extends to 64,983.14ha in the counties of Cheshire, Derbyshire, Lancashire, Staffordshire and Yorkshire; around two-thirds is within the Peak District National Park. It lies approximately 30km from Greater Nottingham. The SAC is selected as one of the best areas in the UK for European dry heaths, blanket bogs and old sessile oak woods with *Ilex* and *Blechnum* and for the significant presence of North Atlantic wet heath, transition mires and quaking bogs. There are also two Annex I habitats present as qualifying features, but not a primary reason for selection of this site. They should be equally considered in any appraisal. The first is Northern Atlantic wet heaths with *Erica tetralix*; the second is Transition mires and quaking bogs.

2.11 The South Pennine Moors SAC and SPA (below) is largely enclosed on two sides by large industrial urban areas, which means that large numbers of people use the area for recreational activities. Land management is primarily driven by agriculture, rough grazing for sheep, and grouse-shooting. The large majority (93.78%) of the SAC meets the Government PSA target for condition. None of the 245 units of the component SSSI are recorded as being in unfavourable condition either wholly or partly because of recreational / visitor pressure. Where not in favourable condition the reasons are recorded as drainage, inappropriate or lack of managed moor burning and overgrazing. Natural England's condition assessment indicates no reference to damaging recreational pressure. Only 20.84 ha are recorded as unfavourable owing to accidental burning. Atmospheric pollution over the last few hundred years has depleted the lichen and bryophyte flora and may be affecting dwarf-shrubs.

**The Peak District Dales SAC**

2.12 This SAC extends to 2,326.33ha in the counties of Derbyshire and Staffordshire; around two-thirds is within the Peak District National Park. It lies approximately 30km from Greater Nottingham. The SAC is selected as one of the best areas in the UK for semi-natural dry grasslands and scrubland facies on calcareous substrates; *Tilio-Acerion* forests of slopes, screes and ravines. It is also selected for the significant presence of European dry heaths; Calaminarian grasslands; alkaline fens; calcareous and calcshist screes of the montane to alpine levels (of which there is less than 1000ha in the UK); calcareous rocky slopes with chasmophytic vegetation (of which there is less than 1000ha in the UK). There are also five Annex I habitats present as qualifying features, but not a primary reason for selection of this site.

2.13 The site is also designated for White-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes.* Brook lamprey *Lampetra planeri* and Bullhead *Cottus gobio* are also qualifying features, but not a primary reason for selection of this site.

2.14 The main threat to the SAC is inappropriate management, such as under-grazing or inappropriate scrub control. The large majority (e.g. 97.05% of the Wye Valley component) of the SAC meets the Government PSA target for condition. None of the 71 units of the component SSSI are recorded as being in unfavourable condition either wholly or partly because of recreational / visitor pressure. Proposed developments such as quarrying can have the potential to interfere with drainage patterns within the site and dust deposition from quarrying is also an issue.

**South Pennine Moors (Phases 1 and 2) SPA**

2.15 The South Pennine Moors SPA covers 64,983 ha in the counties of Cheshire, Derbyshire, Lancashire, Staffordshire and Yorkshire; and includes the major moorland blocks of the South Pennines from Ilkley in the north to Leek and Matlock in the south. It covers extensive tracts of semi-natural moorland habitats including upland heath and blanket mire. The site is of European importance for several upland breeding species, including birds of prey and waders. Both Merlin *Falco columbarius* and Golden Plover *Pluvialis apricaria* spend some of their time feeding outside the SPA on adjacent areas of in-bye land. The northern end of the South Pennine Moors SPA is within 10 km of the North Pennine Moors SPA which supports a similar assemblage of upland breeding birds.

2.16 About 99% of the Eastern Peak District Moors component SSSI meets the Government's PSA target for condition. Approximately two-thirds of the (Phase 1) moorlands are open to public access. Habitat damage through physical erosion or fire, combined with disturbance of breeding birds, can be significant. Many habitats are sub-optimal (in vegetation terms) as a consequence of historic air pollution, high grazing pressure and wildfire burns. Evidence suggests that breeding birds in the south-west of the area may be declining on both open moorland and enclosed rough grazing land, possibly due to general agricultural intensification of the surrounding areas which are used by some species for some of their habitat requirements.

2.17 Large numbers of people use the area for recreational activities. Maintenance of the ecosystems on which the birds depend relies on appropriate grazing levels and burning regimes, and overgrazing by sheep is a key pressure on the site.

**Rutland Water SPA and Ramsar site**

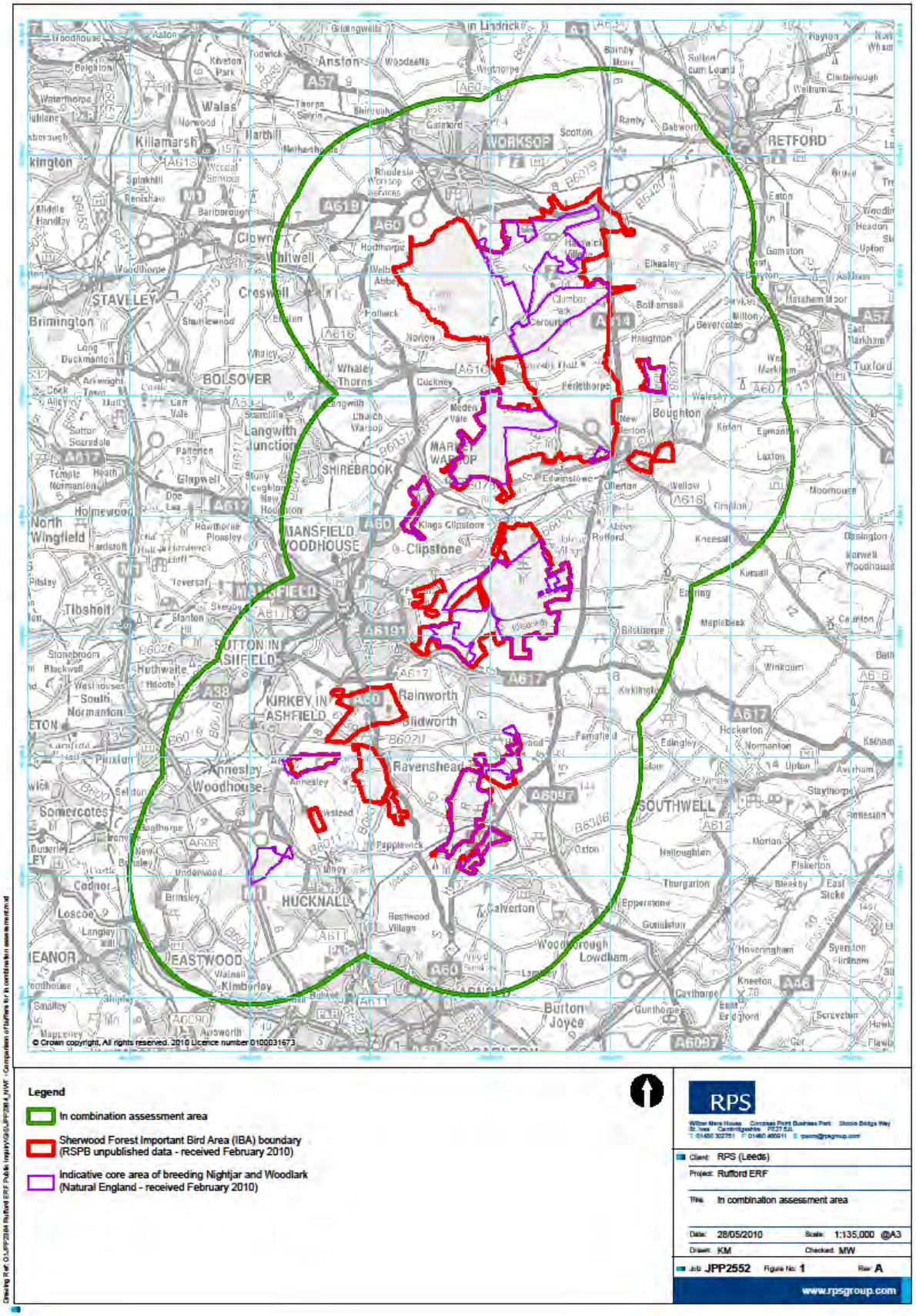
2.18 The Rutland Water SPA extends to about 1555 ha and the Ramsar site to about 1,333 ha in the county of Rutland. It is a man-made pump storage reservoir created by the damming of the Gwash Valley in 1975 and is the largest reservoir in the United Kingdom. In general the reservoir is drawn down in the summer and filled during the autumn and winter months when river levels are high. The main habitats are open water and a mosaic of lagoons, reedswamp, marsh, old meadows, scrub and woodland. The lagoons are one of the most important areas for wintering wildfowl.

2.19 The whole SPA and Ramsar site meets the Government's PSA target. However, the SPA is vulnerable to pressures from recreation, nutrient inputs, and changes in water level. The site is one of the most popular tourist attractions in the East Midlands. Fishing, walking water sports and cycling currently take place and the reservoir has been zoned to allow this to take place.

**The Prospective Sherwood Forest SPA**

2.20 The interest features of the prospective SPA are breeding populations of nightjar and woodlark. The area comprises acid grassland and heathland, oak and birch woodland and coniferous plantations in Sherwood Forest, in Nottinghamshire. Map 2.2 on the next page shows both the 'Important Bird Area' (IBA) and 'indicative core area' boundaries of the prospective SPA. Part of the SPA lies within Greater Nottingham area.

2.21 The 'indicative core area' is identified by Natural England and may form a basis of the SPA if taken forward, but the RSPB have considered a larger area of Sherwood Forest as an 'important bird area' taking account of other breeding species, this is also shown on Map 2.2. The 5km 'buffer zone' shown on the plan has been proposed by the Nottinghamshire Wildlife Trust and is not referred to again in this assessment.




**Map 2.2 the Sherwood Forest Prospective SPA**
Courtesy of Nottinghamshire Wildlife Trust

2.22 The potential boundaries of the prospective SPA are yet to be determined. Two datasets exist which give a good indication of the areas which are likely to be included. The Natural England core area boundaries are based on 2004 and 2006 datasets, whilst those of the IBA are based on all records, and can be argued therefore to present a broader picture. In light of the uncertainties in where the final boundaries will lie, and with regard to the review provisions of Regulation 63 (if a block of land was included which had not previously been assessed), for the purposes of this appraisal the boundary is assumed to incorporate all areas within both the IBA and Natural England core area boundaries. This is considered to be a precautionary approach that should future-proof the appraisal and reduce the likelihood of any review being required should a pSPA be proposed for Sherwood Forest.

2.23 Little is known about the effects of recreation or other urban related pressures on the bird populations of the prospective SPA. No recreation survey information is available for most of the area.

**Summary of potential effects on European sites relevant to the ACS**

2.24 In summary, based on the analysis of European sites in this section and Annex 2 above, and the nature, scope, content and function of the ACS, including its Spatial Strategy which in turn includes provision for 52,050 new homes to 2026 (49,060 excluding the Ashfield area proposals), of which 25,320 will be in the existing Principal Urban Area of Nottingham, it is considered that this appraisal will need to particularly consider the following range of effects on European sites[13]:

**Recreation effects**

a) Indirect effects on the Birklands and Bilhaugh SAC through an increased population in Greater Nottingham being likely to lead to increased numbers of visitors to the Sherwood Country Park and visitor centre located in and close to the ancient forest at the Birklands;

b) Indirect effects on the prospective Sherwood Forest SPA through an increased population in Greater Nottingham being likely to lead to increased numbers of visitors to the Sherwood Forest area generally, parts of which support the breeding species which are vulnerable to disturbance and other recreation-related pressures;

c) Indirect effects on the South Pennine Moors SAC and SPA and the Peak District Dales SAC through an increased population in Greater Nottingham being likely to lead to increased numbers of visitors to the Peak District National Park and surrounding countryside which is designated as part of the SPA and SACs.

**Effects of proximity to urban areas**

d) Indirect effects on the prospective Sherwood Forest SPA through allocation of new housing areas in Greater Nottingham in close proximity to the heathland and other habitats in Sherwood Forest which support the breeding species and which are vulnerable to deterioration as a result of pressures from adjacent urban areas;

[13] This is a summary of the key likely significant effects of the plan on European sites, which the screening process checked. It is not an exhaustive list of all possible effects. The screening process exhaustively checked for other effects on a policy by policy, and site by site basis.

**Effects on air quality**

e) Indirect effects on sensitive habitats in the SACs through the potential for increased emissions of air pollutants from the larger number of homes and other buildings in Greater Nottingham provided for by the plan, and any increase in traffic movements, and whether such increase in air borne pollutants would be likely to have a significant effect on the South Pennine Moors SAC , Birklands and Bilhaugh SAC or the habitats supporting the bird populations in the prospective Sherwood Forest SPA;

**Water abstraction**

f) Indirect effects of increased water abstraction to meet the water supply requirements of an increased number of homes and other buildings and land uses provided for by the ACS, from reservoirs in the South Pennine Moors SPA and SAC.

## 3. SCREENING THE PLAN FOR THE LIKELIHOOD OF SIGNIFICANT EFFECTS: PARTS 1 AND 2 OF THE ACS

### Status of the ACS

3.1 The ACS is not directly connected with or necessary to the management of any European site (regulation 102(1)(b)) and must therefore be checked to see if it is likely to have a significant effect on any European site or European Offshore Marine Site either alone or in combination with other plans or projects (regulation 102(1)(a)).

### Part 1 Working in Partnership

3.1 The whole of Part 1 of the ACS comprises general explanation of the ACS, its process, links to other plans and opportunities for people and organisations to be involved in its preparation and influence its content. There are policy-related quotations but these are all from other plans. There are no policies or proposals in Part 1, and Part 1 cannot have any effect on a European site.

### Part 2 The Future of Greater Nottingham

3.2 Part 2 section 2.1 explains how the ACS is influenced by and should be consistent with other plans at a higher plan-making level. It does not contain any expressions of policy.

3.3 Section 2.2 introduces the social, economic and environmental 'character' of Greater Nottingham, explaining that it is a 'new growth point', a 'core city' and a 'science city', but these descriptions are well established evidence and are a part of the context in which the ACS has been produced.

3.4 Paragraph 2.2.10 is important because it provides an estimate of future population growth relevant to this appraisal. It says "*If the Regional Plan housing figures are delivered, it is estimated that it will have a population of 824,000 in 2026, an increase of around 7%.*" However, it also points out how the population structure has a concentration of people aged 16 – 29, as a result of the universities, and that there are lower proportions of all other age groups. In light of the revocation of the RSS, actual population growth to 2026 may be lower, because the Councils may provide for a lower growth scenario. However, this appraisal takes a 'worst case' scenario for additional population, of a growth of 7% up to a population of 824,000, over a 20 year period 2006 – 2026. This equates to about 0.35% increase per annum.

3.5 Section 2.3 sets out a draft 'spatial vision' for what Greater Nottingham could look like if the aspirations of the ACS are met. This vision is important to the ACS because it 'sets the scene' and expresses the political aspirations of the councils as to the social, economic and environmental 'character' of Greater Nottingham; and how that will have changed since 2009, as described in section 2.2. In essence it portrays a Greater Nottingham where all of the ACS policies and proposals are fully implemented and growth has hit the high-level target of 50,000 new homes to 2026. However, this is a 'vision', a general political aspiration of the kind that the EC guidance acknowledges cannot have a significant effect on a European site. It is the policies and proposals which could bring about the vision that need to be assessed, rather than the vision itself. If the policies or proposals were to change, the vision would change accordingly.

3.6 Section 2.4 sets out a series of spatial objectives. These begin to express the councils' policy aspirations in more detail and influence the policies that follow in Part 3. If an adverse effect on a European site were to be identified as a result of the later policies, it may be necessary to change both the policy and its related spatial objective to avoid that effect. The 12 spatial objectives are therefore assessed for their potential to affect a European site, in general terms, to help to understand where potential effects on European sites may initially arise.

3.7 Table 2 below summarises the analysis of the spatial objectives. See paragraph 1.12 and Annex 1 for the definition of categories A1 – A6 and B.

**Table 2**
**Analysis of Draft Spatial Objectives**

| **Draft spatial objective** | **Category of potential effect** |
|---|---|
| i high quality new housing | **A4** promotes new housing growth requiring needs to be met, but does not quantify or locate the housing provision |
| ii timely and viable infrastructure | **A4** promotes best use of existing infrastructure and provides for new requirements but does not quantify or locate infrastructure provision |
| iii economic prosperity for all | **A4** promotes economic activity, employment opportunities, enterprise, education and training but does not quantify or locate economic provision |
| iv excellent transport and reducing need to travel | **A4 / A5** some aspects may lead to new transport development, which is not located or quantified, but the thrust of the policy is to reduce the need to travel with potential environmental benefits |
| v strong safe and cohesive communities | **A1 / A5** a general statement of policy about the qualities of development and change |
| vi flourishing and vibrant town centres | **B** Development in town and other centres unlikely to have any significant effect on any European site due to distance / lack of links or pathways for effects; air quality effects would be hypothetical rather than real risks to European sites |
| vii regeneration | **A4** promotes regeneration but does not quantify or locate regeneration except in very general terms 'brownfield' or by reference to an example (Cotgrave), |
| viii health and well being | **A5** a general statement of policy about health and well being |
| ix opportunities for all | **A5 / B** a general statement of policy about opportunity, education development unlikely to have a significant effect on a European site |
| x environmentally responsible development addressing climate change | **A3 / A5** a general statement of policy about aspects of sustainable development, tending to steer development to areas least likely to affect any European site |
| xi protecting and improving natural assets | **A2 / A5** a general statement of policy about protecting and improving the natural environment, likely to lead to protection of, rather than significant effects on, a European site |
| xii protecting and enhancing historic character and local distinctiveness | **A1 / A2 / A5** a general statement of policy about protecting and enhancing local distinctiveness, protecting landscape character likely to lead to protection of, rather than significant effects on, a European site |

3.8 It will be seen from the above analysis that none of the draft spatial objectives would themselves be likely to have a significant effect on a European site; but the way in which policies may deliver objectives (i), (ii), (iii), (iv) and (vii) could potentially affect European sites and the policies and proposals relating to those objectives require further assessment where they are expressed in more detail, in Part 3.

3.9 Section 2.5 describes how the ACS must reflect the aspirations of the sustainable community strategies of the local strategic partnerships in the Greater Nottingham area.

3.10 Section 2.6 refers to links with other strategies. The ACS meets the aspirations of these strategies through the spatial planning objectives and policies and proposals which are assessed for their effects on European sites elsewhere in this record. Sections 2.5 and 2.6 cannot have any effect on a European site.

3.11 Sections 2.7 (Ashfield) , 2.8 (Broxtowe), 2.9 (Erewash), 2.10 (Gedling), 2.11 (Nottingham City) and 2.12 (Rushcliffe) explain how each area is locally distinctive, how the sustainable community strategies express the aspirations of the respective communities, in light of the distinctiveness and local priorities, and thus the links between the respective strategies and the ACS.

3.12 They help to explain and underpin the spatial objectives, policies and proposals in the ACS but do not themselves make those objectives, policies or proposals. Sections 2.7 to 2.12 are explanatory and descriptive and part of the evidence base of the ACS, but cannot have any effect on a European site.

3.13 It is therefore concluded that **Part 1, Working in Partnership, and Part 2, The Future of Greater Nottingham, cannot have a significant effect on any European site, either alone or in combination with other plans or projects.**

## 4. SCREENING THE PLAN: PART 3, THE DELIVERY STRATEGY: POLICY 2 THE SPATIAL STRATEGY THE OVERALL LEVEL OF GROWTH

### Introduction

4.1 Policy 2, The Spatial Strategy can be assessed in 12 elements set out below. This section takes the overall level of growth as the first element and assesses it separately because it is the principal policy most likely to have effects on a European Site. Elements (b) to (l) and all other policies in the Delivery Strategy are assessed in Section 5 below.

a) The overall level of growth provision – comprising 52,050 (49,060 excluding Ashfield) new homes and a 7% increase in population to 2026;

b) 25,320 new homes in the PUA of Nottingham;

c) 4,200 new homes in each of two SUEs East of Gamston and South of Clifton;

d) 1,480 new homes in one or more SUEs in Broxtowe yet to be determined;

e) 4,090 new homes in or adjoining Hucknall Sub-Regional Centre (including SUEs at Rolls Royce, North of Papplewick Lane and Top Wighay Farm;

f) 4,420 new homes in or adjoining Ilkeston Sub-Regional Centre (including a SUE at Stanton);

g) Up to 8,340 new homes elsewhere in Greater Nottingham including in or adjoining various specified settlements in Broxtowe, Erewash, Gedling and Rushcliffe and to meet local needs;

h) Significant new employment development as specified in Policy 2(2);

i) Retail, social, leisure and cultural development as specified in Policy 2(3);

j) Major new transport infrastructure as specified in Policy 2(4);

k) Retention of the principle of the Green Belt as provided for in Policy 2(5); and

l) Strategic green infrastructure as provided for in Policy 2(6).

4.2 In this appraisal no distinction is made between elements of policy that are already allocations in a local plan and those which are not.

4.3 The provision for 4,090 new homes in or adjoining Hucknall Sub-Regional Centre (including a SUE at Rolls Royce) is not considered in this appraisal, except for the 600 dwelling SUE North of Papplewick Lane and the 500 dwelling SUE at Top Wighay Farm (both located in Gedling) because the Ashfield part of the ACS was explicitly excluded by the Brief.

### Effects on Air Quality

4.4 The first step is to consider existing pollution levels and whether any relevant critical loads or levels are currently being exceeded. Table 3 below details the estimated

background concentrations of the key pollutants which are relevant to natural ecosystem impacts.

**Table 3**
**Estimated background concentrations of the key pollutants**

| Site | Features | NOx ($ug/m^3$) | $SO_2$ ($ug/m^3$) | $NH_3$ ($ug/m^3$) | N dep (Kg/ha/yr) | Acid dep exceedance |
|---|---|---|---|---|---|---|
| Birklands & Bilhaugh SAC | Old acidophilous oak woods with *Quercus robur* on sandy plains | 16.2 (CLe=30) | 1.6 (CLe=20) | **1.2 (CLe=1)** | **25.9 (CL 10-15)** | **Max CL exceeded due to N** |
| South Pennine Moors SAC* | Northern Atlantic wet heaths with *Erica tetralix* | 12.3 (CLe=30) | 1.6 (CLe=20) | **1.2 (CLe=1)** | **21.8 (CL 10-25)** | **Min CL exceeded due to N & S** |
| | Transition mires and quaking bogs | 12.3 (CLe=30) | 1.6 (CLe=20) | **1.2 (CLe=1)** | **21.8 (CL 10-20)** | **Max CL exceeded due to N & S** |
| | European dry heaths | 12.3 (CLe=30) | 1.6 (CLe=20) | **1.2 (CLe=1-3)** | **21.8 (CL 10-20)** | **Min CL exceeded due to N & S** |
| | Blanket bogs (a priority feature) | 12.3 (CLe=30) | 1.6 (CLe=20) | **1.2 (CLe=1)** | **21.8 (CL 5-10)** | **Max CL exceeded due to N & S** |
| | Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles | 12.3 (CLe=30) | 1.6 (CLe=20) | **1.2 (CLe=1)** | **34.2** ** **(CL 10-15)** | **Min CL exceeded due to N & S** |
| Prospective Sherwood Forest SPA | Woodlark and nightjar ( heath and managed woodlands) | (CLe=30) | (CLe=20) | **CLe= 1-3)** | **(CL=10-20)** | |
| | Polygon A (Hucknall) | 24.7*** | 1.7 | **1.5** | **20.9** | **exceeded** |
| | Polygon B (Annesley) | 24.7 | 1.7 | **1.5** | **20.9** | **exceeded** |
| | Polygon C (Calverton) | 19.8 | 1.7 | **1.6** | **21.4** | **exceeded** |

Table 3: Existing air pollution levels. Source APIS, figures in brackets are the relevant Critical Loads (CL) for deposition or Critical Levels (CLe) for atmospheric concentrations. Data for acid deposition is simply presented in terms of exceedance or non-exceedance.
*South Pennine Moors is a very large site made up of numerous composite SSSIs. The grid reference selected was taken from the block of land located closest to the GNACS development area (SK 296 663)
** the deposition rate for oak woods is higher than that for other features (hypothetically present at the same grid reference) due to the physical structure of woodland (and exposure to the air column) experiencing a greater deposition than an equivalent (lower lying) ecosystem.
*** the APIS data is averaged over a 5km grid square, in light of the proximity of this polygon to the M1 it is likely that this value may underestimate the existing NOx levels and should be interpreted with caution.

**South Pennine Moors and Birklands and Bilhaugh**

4.5 Concentrations of $NO_x$ and $SO_2$ are both well within their critical levels at all sites; the additional contributions from pollutant emissions associated with the ACS are not considered to be sufficient to result in any exceedances. **In respect of both $NO_x$ and $SO_2$ therefore a conclusion of no likely significant effect, either alone or in combination with other plans or projects, can be recorded for the South Pennine Moors and Birklands and Bilhaugh SACs** .

4.6 It is clear from Table 3, that the pollutants of concern are nutrient nitrogen deposition, acid deposition and atmospheric concentrations of ammonia. These pollutants are showing a modelled exceedance of their relevant critical loads or levels. The assessment must consider the nature of pollutants associated with the specific policies and provisions within the ACS that could further contribute to such exceedances.

*Nitrogen (N) deposition*

4.7 The critical loads for nitrogen are assigned to seven ecosystem types and are presented as a range. Ranges of critical load values are given to take account of

(i) intra-ecosystem variation between different regions where an ecosystem has been investigated
(ii) the finite intervals between additions of nitrogen in experiments
(iii) uncertainties in estimated total atmospheric deposition values.

4.8 Each range of values is accompanied by a 'reliability' score on the basis of the extent of supporting papers and studies[14].

4.9 As a result of these ranges the critical load is often referred to both in terms of the 'minimum' critical load (equivalent to the lower value in the range) and the 'maximum' critical load (equivalent to the higher value in the range). Where the maximum CL (max CL) is exceeded there is a greater degree of confidence in the risk for the ecosystem; where only the minimum CL (min CL) is exceeded there is a higher degree of uncertainty with regard to the risk to the site in question, and more attention may need to be given to site-specific factors in assessing potential impacts.

4.10 With the exception of the wet heath feature at South Pennine Moors, all features at all sites exceed the maximum CL for nutrient nitrogen. There is therefore a higher degree of confidence associated with the risk to the features from impacts associated with nitrogen deposition; in general terms the greater the exceedance, the higher the risk of damage.

4.11 In considering the implications of the ACS for impacts associated with nitrogen deposition, the dispersion properties and impacts pathways of pollutants that contribute to N deposition need to be fully appreciated. The primary pollutant, which can be associated with policies within the ACS that could contribute to N deposition at the European sites is $NO_x$. Nitrogen oxides are produced in combustion processes and are therefore present in vehicle emissions. Approximately one-half of UK NOx emissions are from motor vehicles, unlike emissions of sulphur dioxide therefore, emissions of nitrogen oxides are only falling slowly in the UK, as emission control strategies for stationary and mobile sources are offset by increasing numbers of road vehicles[15].

4.12 An assessment needs to be made therefore, in light of the scale and locations of policies that can be associated with increased emissions of $NO_x$, as to whether the ACS is likely to have a significant effect (alone or in-combination) with respect to N deposition.

4.13 In light of their respective locations in relation to the area affected by the ACS, South Pennine Moors SAC/SPA and Birklands and Bilhaugh SAC can be considered together. The closest boundary of the South Pennine Moors site is located some

[14] UK National Focal Centre for critical loads modelling and mapping website (critloads.ceh.ac.uk)
[15] Reference: APIS website (www.apis.ac.uk) pollutant overview for nitrogen oxides.

20km northwest of the nearest district authority boundary, whilst Birklands and Bilhaugh SAC is located approximately 15km northeast of the nearest boundary. None of the policies within the ACS are considered to represent a significant increase in traffic on roads in close proximity to the sites. At these distances the dispersion properties of $NO_x$ means that any contribution to N deposition at the sites as a result of the ACS can be considered to be negligible (even from an in-combination perspective). **There will be no likely significant effect, either alone or in combination with other plans or projects, as a result of N deposition on the South Pennine Moors and Birklands and Bilhaugh SACs.** This conclusion can be supported with regard to the following points:

(i) Emissions from traffic have been shown to be linked to impacts on vegetation within 200m of the road edge[16]. Beyond 200m significant vegetation level effects associated with traffic emissions (including deposition) have not been observed in scientific studies. In the absence of any scientific studies to show significant vegetation level effects beyond 200m from the road edge, in the context of the Waddensee court ruling, it is considered that on the basis of objective information, there is no likelihood of a significant effect as a result of effects on the site from the transport implications of development at distances greater than 15km away.

(ii) Total N deposition can be split into both reduced nitrogen (mainly $NH_3$) and oxidised nitrogen ($NO_x$). For all vegetation types however, reduced nitrogen dominates the input. These different forms of nitrogen have very different average lifetimes and travel distances. The mean residence time of reduced nitrogen is 5 hours, while that of oxidised nitrogen is approximately 30 hours; mean travel distances for reduced and oxidised nitrogen are 150km and 1000km respectively. The different atmospheric behaviour of reduced and oxidised nitrogen results in significant differences in terms of the distance from the source of environmental effects associated with deposition. With regard to reduced nitrogen, with its short atmospheric lifetime, the effects of UK emissions occur largely within the UK. In the case of oxidised nitrogen however, with its longer atmospheric lifetime, 85% is exported from the UK along with its associated effects[17].

(iii) 85% of $NO_x$ emissions are exported beyond the UK borders, with a mean travel distance of 1000km. The contribution to N deposition, at 15km and 20km from the ACS boundary, from $NO_x$ emissions which can reasonably be associated with the policies will therefore be both trivial and inconsequential. Again, in the context of the Waddensee court ruling, it is considered that on the basis of objective information, there is no likelihood of a significant effect as a result of N deposition, effects need to be credible rather than hypothetical.

*Acid deposition*

4.14 Whilst the critical loads for acidity are also showing exceedances, a similar rationale exists to that outlined above for N deposition, on the basis of which significant effects can be excluded. Acid deposition is a function of the combined deposition of nitrogen and sulphur containing pollutants. The primary sulphur based pollutant in the UK which contributes to deposition is $SO_2$ with the main sources being industrial processes. The ACS has no policies which can be associated with significant

[16] English Nature Research Report 580: The ecological effects of diffuse air pollution from road transport
[17] Transboundary Air Pollution (NEGTAP Report) 2001, prepared by the National Expert Group on Transboundary Air Pollution on behalf of DEFRA, Chapter 3.

releases of $SO_2$; the contribution to acid deposition from the ACS is therefore limited to the contribution from nitrogen based pollutants, primarily $NO_x$. As outlined in paragraphs 4.11 – 4.13 above, with particular regard to the bullet points at 4.13, the dispersion properties of $NO_x$ means that any contribution to acid deposition at the sites as a result of the ACS can be considered to be negligible (even from an in-combination perspective). **There will be no likely significant effect, either alone or in combination with other plans or projects, as a result of acid deposition on the South Pennine Moors and Birklands and Bilhaugh SACs.**

*Ammonia ($NH_3$) emissions*

4.15 Whilst $NH_3$ concentrations are showing slight exceedances across all the sites, the policies and provisions detailed within the ACS will not in themselves result in any further credible emissions of $NH_3$. Whilst trace emissions of $NH_3$ could hypothetically be associated with some of the policies (from sources of sewage and catalytic converters in motor vehicles), again it is considered that on the basis of objective information, there is no likelihood of a significant effect as a result of emissions of $NH_3$, which are trivial or inconsequential (even in light of the in-combination provisions). **On the basis that the implementation of the ACS will not result in any further credible contributions of $NH_3$ within the the South Pennine Moors and Birklands and Bilhaugh SACs, a conclusion of no likely significant effect, either alone or in combination with other plans or projects, can be recorded.**

**Prospective Sherwood Forest SPA**

4.16 The situation with respect to air pollution impacts at the prospective SPA at Sherwood Forest is however more complex. Due to the location of much of the housing allocation having been specified within Policy 2, it is apparent that some of the housing allocations are located within close proximity to the prospective European site. The map of the prospective SPA boundaries shows the site being composed of several discrete blocks of land. Polygon A in Table 3 above relates to the block of land northwest of Hucknall known as Park Forest. The development most likely to affect the prospective SPA, in terms of air quality, is that proposed at Top Wighay Farm, alone or in combination with other proposals.

4.17 The basis upon which likely significant effects were discounted in the cases of South Pennine Moors SAC/SPA and Birklands and Bilhaugh SAC centred on the dispersion properties and travel distances of $NO_x$ emissions outside the immediate locality of the source. Most of the polygons comprising the prospective Sherwood Forest are also at some distance from potential sources associated with the ACS and can be excluded on the same basis. However, as Park Forest is in such close proximity to proposed development sites, whilst also being adjacent to both the M1 and the A611, the same rationale cannot be applied to the entire Sherwood Forest site. It is likely that increased emissions from traffic may represent a credible threat to site integrity at this location. As already stated, this appraisal is precluded by the Brief from assessing the effects of the Ashfield area proposals, but the proposals at Top Wighay Farm and north of Papplewick Lane are included as they are in Gedling.

4.18 In respect of other elements of the ACS, the background levels of $SO_2$ are well within the critical level and additional contributions from pollutant emissions associated with other elements of the ACS are not considered to be sufficient to result in any exceedances. **As such, for the implementation of the ACS (excluding the effects of proposals in Ashfield) a conclusion of no likely significant effect, either alone or in combination with other plans or projects, can be recorded in respect of $SO_2$ in respect of the prospective Sherwood Forest SPA**. However, potential impacts associated with $NO_x$, N deposition, acid deposition and $NH_3$ need further consideration.

**Sensitivity of site to air pollution impacts**

4.19 Before considering whether these pollutants represent a likely significant effect to the prospective Sherwood Forest SPA, it is important to acknowledge the sensitivity of the site to air pollution impacts. For the purposes of this HRA the prospective SPA is being treated as a pSPA (see para 1.24), the conservation objectives relate therefore to the supporting habitat of the listed bird species. The site is not designated as a Special Area of Conservation in respect of the habitats in their own right, which creates an important distinction. The integrity of the site as an SPA is not therefore concerned primarily with the overall integrity of the habitats themselves, but instead with the integrity of the population of the Annex 1 birds for which the site would be classified.

4.20 The conservation objectives for the prospective SPA were presented in draft form to a recent public inquiry by Natural England and are set out in Annex 2. They follow the standard format "to maintain*, in favourable condition, the habitats of the bird species of European importance" (*where maintenance implies restoration if the features if not currently in favourable condition). Conservation objectives are supported by favourable condition tables which relate to the individual component SSSIs of any European site. The listed attributes for SAC features are diverse and include detailed aspects of species composition and diversity; those for SPA features are informed by the requirements of the bird species, and relate to population size and habitat extent. The assessment must therefore remain focused on the potential impacts of air pollution with regard to the attributes of favourable condition which are relevant to woodland and heathland habitats of woodlark and nightjar.

4.21 In considering the sensitivity of the SPA to impacts that can be associated with air pollution, further advice was sought from Natural England with specific regard to the potential effects on 'habitat extent'. With regard to both woodlark and nightjar, Natural England advised that:

> *"any acceleration in vegetation growth leading to the replacement of bare ground and low-growing, sparse vegetation by taller, faster growing vegetation could be detrimental to these species. In the context of forestry ... these changes could reduce the time that such features are present following replanting, a problem which would be exacerbated by changes in forest management (e.g. mulching, changes to less effective herbicides). In the case of heathland, there might be changes in species composition (i.e. from heath to grass) which could eliminate the essential mosaics of bare ground and vegetation"*

It is clear from the advice provided that the Park Forest area of the prospective SPA is *potentially* sensitive to the impacts associated with air pollution.

*Nitrogen Oxide*

4.22 There is a shortage of information on direct impacts of $NO_x$ on heathland vegetation as opposed to the effects from accumulation of atmospheric nitrogen deposition due to both oxidised and reduced nitrogen. Even in major built up areas with higher traffic and $NO_x$ emissions, there is uncertainty over the magnitude of direct $NO_x$ effects. $NO_x$ is also a key precursor for ozone production in the atmosphere. Emission controls are driven by its role as an ozone precursor rather than because of its direct effects[18]. With regard to woodlands most semi-natural habitats are N limited so increased N inputs may represent a positive effect, even with concentrations over critical levels, however, potential changes to community composition (as a result of associated

[18] APIS website: $NO_x$ impacts on lowland heath.

increases in deposition) and increased susceptibility to secondary stresses such as drought and frost may lead to an overall adverse effect[19].

4.23 Considering the attributes that are relevant to the prospective SPA features, the uncertainties and subtleties of impacts associated with $NO_x$ need to be acknowledged. Whilst exceedance of $NO_x$ critical level may be associated with subtle changes in leaf chemistry and associated lichen and bryophyte communities, it is considered that the potential increase in $NO_x$ concentrations will not be likely to have a significant effect in terms of the overall extent of bare ground and low growing, sparse vegetation.

4.24 With regard to the overall assessment, **for the implementation of the ACS (excluding the effects of proposals in Ashfield) a conclusion of no likely significant effect, either alone or in combination with other plans or projects, can be recorded with respect to $NO_x$ concentrations on the prospective Sherwood Forest SPA.**

*Nitrogen deposition*

4.25 Increased N deposition has a direct effect on species composition, in particular through an increase in nutrient availability which favours faster growing species. It is possible therefore that an increase in N deposition may lead to *"the replacement of bare ground and low-growing, sparse vegetation by taller, faster growing vegetation"* which, in accordance with the advice from Natural England, may represent a likely significant effect on the prospective SPA.

4.26 The Park Forest part of the prospective Sherwood Forest SPA is within 200m of both the M1 motorway and the A611 dual carriageway. Traffic flows along the A611 have been the subject of some recent modelling work with a predicted 24-25% increase in flows along the northbound arm of the carriageway[20] as measured between a 2008 base year and 2026, at am and pm peak hours, and one inter peak hour. This increase is as a result of the implementation of the ACS together with the completion of approved (but as yet incomplete) planning permissions and infrastructure that was considered near certain at the time of modelling.

4.27 The critical load for nitrogen is currently exceeded at Park Forest and the additional 24-25% increase in traffic along the northbound arm of the A611 as measured between a 2008 base year and 2026, at am and pm peak hours, and one inter peak hour may further contribute to nitrogen deposition as a result of emissions of $NO_x$ and $NH_3$ that can be associated with traffic. With regard to the overall assessment therefore, based on the information currently available, **it is not possible to conclude no likely significant effect, either alone or in combination with other plans or projects, with respect to impacts associated with N deposition for the prospective Sherwood Forest SPA.**

*Acid deposition*

4.28 The effects of acid deposition are via direct impacts to mosses, lichens and liverworts (which receive their nutrients direct from the atmosphere) and potential changes in species community that can be associated with changes in soil chemistry (in particular pH). Whilst increased acid deposition may affect species composition, it is considered that the potential increase in acid deposition that could be associated with the ACS will not be likely to have a significant effect in terms of the overall extent of bare ground and low growing, sparse vegetation.

[19] APIS website: $NO_x$ impacts on managed woodland
[20] Greater Nottingham Aligned Core Strategies Transport Model 2010

4.29 With regard to the overall assessment, **for the implementation of the ACS (excluding the effects of proposals in Ashfield) a conclusion of no likely significant effect, either alone or in combination with other plans or projects, can be recorded with respect to acid deposition on the prospective Sherwood Forest SPA.**

*Ammonia emissions*

4.30 Whilst $NH_3$ concentrations are showing slight exceedances across the area, the policies and provisions detailed within the ACS will not in themselves result in any further credible emissions of $NH_3$. Whilst trace emissions of $NH_3$ could hypothetically be associated with some of the policies (e.g. from sources of sewage and catalytic converters), in the context of the Waddensee court ruling, it is considered that on the basis of objective information, there is no likelihood of a significant effect as a result of such emissions being anything other than trivial or inconsequential (even in light of the in-combination provisions). **On the basis that the implementation of the ACS (excluding the effects of proposals in Ashfield) will not result in any further credible contributions of $NH_3$ within the prospective Sherwood Forest SPA, a conclusion of no likely significant effect, either alone or in combination with other plans or projects, can be recorded.**

**Recreation Pressure**

4.31 The effects of recreational pressure on SACs is mainly related to damage to habitats for which the site is designated. This will usually arise from trampling which, over a period of time, can cause loss of habitat through the establishment of and subsequent widening of paths and tracks. The wearing down of paths and tracks can also cause or accelerate erosion leading to further habitat loss or damage. Access can also increase the likelihood of invasive, non-native species penetrating into a SAC. Dog walking can cause localised eutrophication (enrichment) of habitats, especially in the first few hundred metres from access points as a result of dog facies deposition. Some species for which SAC are designated may also be affected by disturbance. The effects of recreational pressure on SPAs are mainly related to damage to habitats, similar to that described above, on which the bird species for which the site is classified rely, and disturbance of the birds within the SPA or when using supporting habitat outside the SPA.

**Potential effects on Birklands and Bilhaugh SAC**

4.32 **[B]** The effects of recreational pressure and the existing visitor centre arrangements at the Sherwood Country Park are well documented elsewhere[21] and are not detailed in this appraisal. The location of the visitor centre buildings and car park has an obvious detrimental effect on the SAC. The current dispersal of visitors away from the visitor centre area exacerbates the negative effects of recreation on the SAC.

4.33 This is reflected in the condition assessment of the SSSI, presented in Annex 2. The effects of occasional surges in visitor numbers, following film or television coverage of the Robin Hood legend, further affects the SAC. Any increase in visitor numbers as a result of the increased numbers of homes and people provided for by the ACS, either alone or in combination with the provisions in other core strategies, has the potential to adversely affect the habitats of the SAC. It is uncertain whether increased effects may be proportional, or disproportional, to the increased number of visitors. On the basis of objective information the potential for the effects of

[21] For example the Habitats Regulations Appraisal of the Newark and Sherwood District Council Core Strategy and the Habitats Regulations Assessment of the planning application for the proposed relocation of the Sherwood Forest Visitor Centre

increased recreational pressure to lead to a significant effect on the SAC, cannot be ruled out in the absence of mitigation measures.

4.34 The Nottinghamshire County Council is proposing a radical change to the visitor centre and management in the Birklands part of the SAC. This includes, amongst other things, the relocation of the visitor centre and car parking to a site outside the SAC and improved access and habitat management in the SAC, all designed to reduce the impact of recreational pressure on the SAC. These measures are considered to be more than adequate to ensure that any increase in visitors to the country park and visitor centre as a result of the provisions of the ACS and other plans or projects, alone or in combination, would not have a significant effect on the SAC. Rather the mitigation measures would have a significant net beneficial effect on the SAC.

4.35 Although not a proposal in the ACS, being outside the area of the ACS, the improvements described above are proposed by another local authority and a planning application for the works is expected to be made shortly. It is therefore a reasonable assumption that the improvements to the visitor management in the SAC will be implemented in the foreseeable future.

4.36 **On the assumption that the relocation of the visitor centre and the improved habitat and access management measures are implemented in the foreseeable future, and in any event within the life of the ACS, it can be concluded on the basis of objective information that there would be no likely significant effect, either alone or in combination with other plans or projects, on the Birklands and Bilhaugh SAC as a result of the provisions of the ACS.**

**Potential effects on the South Pennine Moors SAC and SPA and the Peak District Dales SAC**

4.37 **[B]** The basis of this assessment is that there would be likely to be a 7% increase in visitor pressure to the SAC and SPA to 2026. This was used as a basis for assessment for the following reason. The 7% increase in population in Greater Nottingham, provided for by the ACS, would not itself be likely to have a significant effect on the European sites. However, it would be a reasonable assumption that the core strategies of all the other local planning authorities all around the National Park would similarly be providing for an increase in population of approximately the same order, taken as an average around the Park. Consequently, the 7% assumed increase in visitor pressure is the 'in-combination' increase of visitors arising from all areas in and around the National Park. The Regulations require the ACS to be assessed for its effects either alone or in combination with other plans and projects. This appraisal therefore adopts a 7% increase in visitor pressure to the European sites which lie wholly or partly within the National Park.

4.38 The issue of increased recreational impact has not been addressed consistently in the Habitats Regulations Appraisal of core strategies around the Park and indeed, most have not attempted to assess it all. The Peak District National Park Authority (PDNPA) recreation strategy appears not to have been subject to HRA.

4.39 Nevertheless, as will be seen from the following discussion, measures to protect the European sites are in place and all public bodies have a duty to give greater weight to the conservation of the flora and fauna of the National Park where there is a potential conflict with promoting access, understanding and enjoyment.

4.40 Furthermore, a distinction should be drawn between visitors who are accessing the European sites because they are the most convenient, 'local', amenity, green spaces

from settlements which are located within or on the edge of the European sites, and those visitors accessing the European sites because of their intrinsic value as a national or regional scale recreation destination. Greater Nottingham clearly is not contributing to the former type of recreation, but is contributing to the latter, with the Peak District National Park being a recreation destination of acknowledged importance to the people of Greater Nottingham. The assessment of the effects of the ACS, therefore, concentrates on those visitors who travel some distance to the National Park, specifically to access and enjoy its special qualities, rather than visitors who merely use the European sites in the Park as a local amenity.

4.41 In order to assess the likelihood of a significant effect on these European sites, as a result of a potential increase in recreational pressure, the consultants discussed the issue with Andy Farmer, Area Manager (North) Peak District National Park Authority (PDNPA), Rhodri Thomas, Head Ecologist PDNPA, Felicity Dodd, Natural England, responsible for the Eastern Moors element of South Pennine SAC / SPA, and Rachel Hoskin, planning advisor Natural England East Midlands Region.

4.42 Two issues were discussed, which may be summarised as:

a) whether an anticipated increase of visitors to the National Park, of about 7% to 2026, would be likely to have a significant effect on these European sites; and

b) what measures, powers, strategies or mechanism are, or could be put, in place which could manage that increase such that adverse effects would be avoided?

4.43 The responses from the four officers were entirely consistent lending confidence to the findings of the assessment. Some officers felt that the assumption of a proportional 7% increase in visitors arising from a 7% increase in population was unlikely, but on a precautionary basis represented a sound basis for a 'worst case scenario' assessment. None of the officers raised immediate concerns about such a potential increase in visitor numbers to the three European sites.

4.44 Three aspects of recreational impacts need to be considered:

a) Erosion of surface vegetation
b) Disturbance of birds
c) Increased fire risk

4.45 The Peak District Dales SAC was not perceived to be subject to recreational pressure of a kind that would be likely to have a significant effect on its interest features. None of the above three considerations were considered by any officer to be potentially significant. None of the 71 units of the component SSSI are recorded as being in unfavourable condition either wholly or partly because of recreational / visitor pressure. Erosion or other habitat damage is limited, local and reparable; disturbance is not relevant and fire risk is of no concern. The assessment therefore concentrated on the moorland sites.

4.46 Effects of **erosion** would be likely to be negligible, most visitors do stay on paths, the spatial impact therefore would be very localised. The worst affected areas are and would be subject to repair, maintenance and improvement works, limiting the extent of damage

4.47 **Disturbance** could be potentially significant. Increased disturbance cannot immediately be ruled out on the basis of objective information. The policy and other mechanisms in place for management and protection of the European sites are not based on a projected increase in population or visitors. The net effect of the current National Park Management Plan and Recreation Strategy (2010) is to openly encourage increased access to the National Park and in doing so to facilitate the uptake of more active recreation uses which may increase visitor pressure to wilder parts – which may include the European site moorlands. The strategies do however stress the importance of sustainable access and refer back to the need for conservation purposes to prevail where there may be conflict with understanding and enjoyment objectives, and where management measures cannot be sure to mitigate potential for harm.

4.48 It was considered difficult to clearly link downward trends in moorland bird numbers, for example, with increases in visitor numbers to the moors. In areas of the Park with upland moor characteristics, where access has been strictly limited and visitor pressure is low, decline in breeding bird populations have reflected those in areas where access is possible. Likewise, once footpath repair/stone sett laying on the worst eroded footpaths on moors is completed, bird numbers tend to recover quickly within a 50 m corridor along the path line, so the evidence points to a limited impact through disturbance of walkers per se. Other monitoring programmes (e.g. Moors for the Future partnership) have noted increases in some moorland species since CROW Act open access came into force. Defining the effects of disturbance as a result of increased visitors is not straightforward and appears not to be proportional to a defined increase in visitor numbers (apart from core 'honey pot' sites).

4.49 Rather, the observed effects of disturbance are more acute when small numbers of people act in such a way as to cause potential harm; this is particularly the case with the recent upsurge in 'wild camping' following television coverage of this activity, and activities such as unorganised and sometimes unlawful off-road driving and motorcycling.

4.50 Undoubtedly an increase in recreation pressure related to an increase in **fire risk** has the potential to be a significant effect on the moorland European sites, especially in combination with the effects of climate change. Impacts of fire on the SAC habitats and the SPA supporting habitats can be significant, long term or even permanent.

4.51 In terms of **mitigation measures**, the officers saw these as a combination of several inter-related factors and measures all capable of reducing the likelihood of significant effects, rather than a single measure. These include but are not limited to:

a) Moorland management plans

b) 'Soft' visitor management (e.g. controlling parking, positioning access styles, education, ranger patrols and voluntary agreements)

c) Higher Level Stewardship agri-environment agreements

d) Natural England powers and measures

e) Local Access Forum agreements on use by key stakeholders.

4.52 Powers vested in the NPA as Rights of Way and Access Authority by the CROW Act are significant. Landowners or bodies can request that access be restricted in a number of circumstances including:

a) S.24 – a landowner may request closure for up to 28 days per year – a power commonly utilised on the moors during May (nesting season);

b) S.25 – the NPA can close the moors, at any time, for any period, when fire risk is deemed high; again a frequently and effectively used measure;

c) S.26 – Natural England can request closure or other restrictions in the interests of conservation of flora and fauna.

However, indicative of the lack of a perceived threat to the integrity of the moorland European sites, Natural England has never made such a request nor did it seek to constrain access at the introduction of the CROW Act provisions. This may in part reflect the effectiveness of voluntary agreements which had been in place for many years before the new legislation.

4.53 Natural England can also control some larger or specialist events under the powers of the Wildlife and Countryside Act, as operations likely to damage the underpinning SSSIs. Natural England is also a member of Local Access Forum which ensures the European sites are considered in moorland issues, discussions and decision making. However, with the moorland management tools and initiatives in place, there is no need to assert the primacy of maintaining the integrity of the European sites, and the managed and voluntary integration of recreation and other users is the preferred and so far most effective way of moorland management.

4.54 Even in light of a potential 7% increase in visitors to the moors, the officers all felt that the existing raft of management initiatives and powers of the CROW Act will continue to be sufficient to avoid a significant effect on the European sites, even if experience in the future indicated that these measures, such as closure due to high fire risk, may need to be used more often or for longer. Well tried and tested habitat and access management measures are available to respond to any perceived adverse effect on the European sites before they became significant in conservation terms.

4.55 In light of this analysis, all the objective information available points to the conclusion that **there is no likelihood of a significant effect on the South Pennine Moors SPA or SAC or the Peak District Dales SAC as a result of an increase in visitor pressure to the sites, arising from an increase in population provided for by the ACS, either alone or in combination with other plans or projects.**

**Potential effects on Rutland Water SPA**

4.56 **[B]** Rutland Water is within a reasonable travel distance of the ACS area and it is likely that there will be an increase in visitor numbers as a result of the ACS in combination with other plans or projects. However, recreation activities are carefully and quite intensively managed within the Rutland Water site and surroundings, to ensure the protection of the SPA species. Access to key bird areas is restricted and recreational activities are restricted to areas of the site that are able to support them without significant effects on the SPA species. Management of the site for its SPA interests is currently compatible with these recreation uses except in periods of drawdown. A revised strategy with Anglian Water Supplies (AWS) is intended to address this problem.

4.57 In light of the current and foreseeable recreation management of the SPA and Ramsar site, even if all the surrounding core strategies, in combination, led to an increase in visitors to Rutland Water of say 7% – 10% over the current levels, it would not be likely to have a significant effect on the birds for which the area is

classified and listed. **A conclusion of no likely significant effect, both alone and in combination with other plans or projects, can be recorded in respect of Rutland Water SPA and Ramsar site.**

**Potential effects on the prospective Sherwood Forest SPA as a result of urban proximity and / or recreation pressure**

4.58 **[A1, B and C1]** The basis of this assessment is that there would be likely to be a 7% increase in visitor pressure to the prospective SPA to 2026. This is used as a basis for assessment for the following reason. The 7% increase in population in Greater Nottingham, provided for by the ACS, would not itself be likely to have a significant effect on the prospective SPA. However, it would be a reasonable assumption that the core strategies of all the other local planning authorities in and around the prospective SPA would similarly be providing for an increase in population of approximately the same order, taken as an average around the area. Consequently, the 7% assumed increase in visitor pressure is the 'in-combination' increase of visitors arising from all areas in and around the prospective SPA. The Regulations require the ACS to be assessed for its effects either alone or in combination with other plans and projects. This appraisal therefore adopts a 7% increase in visitor pressure to the prospective SPA to 2026, equating to an increase of about 0.35% per annum.

4.59 There is a substantial evidence base[22] that urban development in close proximity to heathland SPAs, classified for their populations of nightjar and woodlark has the potential to adversely affect the population and distribution (range) of breeding birds in a given locality. Recreation pressure, particularly resulting in disturbance, trampling and nutrient enrichment, exacerbates the effects of fragmentation, habitat loss, encroachment, increased incidence of fire, increased lighting, and predation and disturbance of heathland birds by pets.

4.60 It is therefore necessary to consider the situation in respect of the prospective Sherwood Forest SPA. All parts of the prospective SPA which are open to the public could be affected by increased recreational pressure. Those parts of the prospective SPA which lie within or close to Greater Nottingham may also be affected by the proximity of urban development provided for by the ACS. It is therefore necessary to establish the following:

a) Is there any evidence that urban development or recreational pressure is having any negative effect at present on the density or distribution of the nightjars and woodlark in Sherwood Forest?

b) If there is some credible evidence that such effects are occurring, or would occur, would an increase in population in Greater Nottingham by approximately 7%, over a 20 years period, alone be likely to have a significant effect in light of the (draft) conservation objectives?

c) If there would not be likely to be a significant effect alone, would the effects be likely to be significant in combination with other plans or projects?

d) If it is considered that the effects are significant, what might comprise reasonable measures to avoid negative effects on the nightjar and woodlark, in the light of the site's particular characteristics and specific circumstances?

[22] Underhill-Day, J. C. (2005) A literature review of urban effects on lowland heaths and their wildlife. English Nature, Research Report No. 624. English Nature, Peterborough.

4.61 As explained in section 2, the whole of the IBA and Natural England's indicative core areas shown on map 2.2 have been taken into account.

4.62 Little is known about the effects of recreation or other urban related pressures on the bird populations of the prospective SPA. No recreation survey information is available for most of the area.

4.63 The distribution of breeding territories of Nightjar and Woodlark for the core areas has been obtained from Natural England. An initial analysis, based on desk study and a brief field visit to a sample of areas, indicates that both Nightjar and Woodlark territories appear to be determined primarily by the location and availability of suitable habitat and there is no prima facie evidence that recreation 'hot-spots' in the forest areas, particularly those closest to Greater Nottingham displace breeding Nightjar or Woodlark. Indeed, there are records of the species breeding in relatively intensively used areas of the Sherwood Forest, Sherwood Pines and Clumber Country Parks; though they are notably absent from Rufford Country Park, which may sustain a higher density of visitors, but does not appear to host the most appropriate habitats.

4.64 Habitats occupied by the two Annex 1 species at the time of the survey appear to have a robust but often cyclical physical structure and comprise mainly clear-felled, or recently clear-felled, coniferous plantations, or relatively open dry acid grassland and heathland, some invaded or being invaded by birch and locally by *Rhododendron*. Bracken too is locally invasive. Some use of rides or clearings in coniferous plantations may also be made.

4.65 There is public access to most of the areas close to Nottingham almost all of which (outside the Ashfield area omitted from this appraisal) is in Forestry Commission or Nottinghamshire Wildlife Trust management. However, in the majority of the area outside the main country parks, public access is predominantly dog walking, with visitors having arrived at the site by car. Occasional walkers and cyclists are encountered and there is evidence of widespread, but not intensive horse riding. Visitors and dogs appear to keep to the paths and the deep layers of litter and brash of clear-felled areas can be relatively impenetrable for people and dogs.

4.66 All evidence of public access observed on site in the southern parts of the prospective SPA related to a car parking opportunity. There are a small number of formal car parking areas, but many opportunities are single, or perhaps two or three, informal and opportunistic roadside spaces. There is some, localised, evidence of fly tipping, mainly at the parts of the site closest to Nottingham and occasionally elsewhere. Evidence of fire is rare. No evidence of encroachment from residential properties was evident on the site visit but the areas around Ravenshead were not visited. Otherwise no significant habitat damage or disturbance is evident from ad hoc observation of a sample of the areas in the prospective SPA.

4.67 Considering the questions posed in paragraph 4.61 above:

a) There is no prima facie evidence that urban development or recreational pressure is having a negative effect at present on the density or distribution of the nightjars and woodlark in Sherwood Forest. Nevertheless, given the known potential for such effects, and such effects being recorded in a number of similar situations, where they have been systematically researched, surveyed and analysed elsewhere, on a precautionary basis, it is assumed that some negative effects are occurring, albeit they cannot be quantified or precisely located.

b) On the basis of objective information, given the particular characteristics and circumstances of the site, the potential effects of recreation pressure arising from the 7% increase in the number of visitors to 2026, arising from the Greater Nottingham area, provided for by the ACS alone, on the prospective Sherwood Forest SPA, are considered not likely to be significant. That is, the 0.35% increase per annum in visitors from Greater Nottingham would not significantly increase any negative effects that may be occurring (on the assumptions in (a) above) even in respect of the parts of the prospective SPA that would be most affected by those visitors.

c) Again, in light of the particular characteristics and circumstances of the site, the potential effects of recreation pressure arising from the 7% increase in the number of visitors to 2026, arising from the ACS in combination with the effects of all other plans and projects (including other core strategies and the Rufford Energy Recovery Facility proposal currently at public inquiry), on the prospective Sherwood Forest SPA, are considered not likely to be significant. That is, the 0.35% per annum increase in all visitors across the whole of the prospective SPA would not significantly increase any negative effects that may be occurring (on the assumptions in (a) above).

d) However, again on a precautionary basis, and in light of background information from other similar areas, for the purposes of this appraisal, let it be assumed that the effects of recreation pressure do have the potential to be significant, as a result of the ACS in combination with the other plans or projects referred to in (c) above, even if such effects would normally be ruled out on the basis of objective information. What might comprise reasonable mitigation measures to avoid negative effects on the nightjar and woodlark, in the light of the specific circumstances of the site, which may endorse a conclusion of no significant effect?

4.68 In terms of the effects of increased recreational pressure, given the specific characteristics and circumstances of the prospective SPA; in particular its habitats, and the nature, scale and location of recreation uses, it is considered that relatively minor adjustments to the management of access and habitats would be sufficient to ensure that any significant effects on the nightjar and woodlark would be avoided by any increase in visitors, of the order of 0.35% per annum to 2026. Such low levels of increase, over such a long time period, would allow management of the areas affected to be adjusted to accommodate changes in the levels, patterns and type of access and visitor behaviour. The question arises therefore, as to whether such minor adjustments to access and habitat management might reasonably be expected in the future to avoid any likelihood of a significant effect on the prospective SPA interest features.

4.69 Broadly speaking, there is no public access on parts of the prospective SPA that are not managed by a public authority / agency or the National Trust or Wildlife Trust. Where there is no public access there is no risk to the birds as a result of recreational pressure.

4.70 Where there is public access it is reasonable to anticipate that any minor adjustments to access or habitat management that may be needed to avoid adverse effects arising from a small increase in visitors would be taken by the local authorities and the Forestry Commission, in consultation with Natural England (all of whom would have statutory duties to have regard to the requirements of the Directives) and the National Trust, and the Wildlife Trust (who might reasonably be expected to deliver

such measures as part of their charitable objectives). On the basis of objective information it is concluded that the bodies managing the prospective SPA would be likely to cooperate and take whatever minor access and habitat measures were necessary to avoid any significant effect on the prospective SPA.

4.71 In terms of urban proximity, the only potential for such effects arising from the ACS is where new development may be located in close proximity to the southernmost prospective SPA areas. Any such effects as a result of the proposals in Ashfield are not considered here because the Ashfield area proposals were excluded from this appraisal by the Brief. Thus, it is necessary to consider whether any other areas may be affected, for example around Calverton, Hucknall or Ravenshead. A conclusion of no likely significant effect as a result of urban proximity to the prospective SPA cannot be determined without checking to see where the ACS is directing new development. This issue is analysed in respect of Policy 2(1)(e) in section 5.

**Water Abstraction**

4.72 **[A1]** Figure 2 identifies potential effects of water abstraction on the South Pennine Moors SAC for further consideration, as required by the Brief. For the purposes of this appraisal, a 'worst case scenario' is assumed whereby some of the additional water required by the increased housing provided for by the ACS is drawn from the Derwent reservoirs in Derbyshire, located in the South Pennine Moors SAC / SPA. In practice this may not be the case.

4.73 The Greater Nottingham and Ashfield Outline Water Cycle Study specifically considers impacts on designated European sites and states in section 8.10.2 that: "Six European designated sites have been identified either in the East Midlands water resource zone, or downstream of the study area on the River Trent. The Environment Agency has undertaken the Review of Consents process to identify where abstractions and discharges are impacting on such sites. Changes to abstraction and discharge regimes as a result of new development would not be permitted unless the applicant can demonstrate that there are no likely significant effects upon the designated sites".

4.74 The Environment Agency was contacted with regard to the findings of their review of consents (in accordance with Regulation 63) in respect to South Pennine Moors, and potential impacts associated with abstractions from the Derwent reservoir. A summary of their assessment in relation to reservoir abstractions stated:

> *"Abstraction from reservoirs:*
> Abstraction from reservoirs would not affect the interest features of the South Pennine Moors directly as these abstractions only affect the volume of standing water in the reservoirs. Most of the reservoirs are outside the designated areas and don't have features directly associated with them.
>
> *Existing catchwaters and reservoirs:*
> Catchwaters and reservoirs are existing structures, rather than permitted plans/projects so it is not appropriate to review them under the Habitats Directive.
>
> *Compensation releases:*
> Compensation releases from reservoirs can affect the flow of water through the designated site. However, the flow is in incised channels in a lower horizon than the peat which supports the cSAC interest features, and therefore not in hydraulic connection with it. Any effect of different rates of flow in these channels on SPA

features is highly unlikely. Therefore compensation releases are not considered to adversely affect the designated site."[23]

4.75 In light of the findings of the Environment Agency, as the competent authority in respect of water resources, it is concluded that **increased water consumption from the Derwent reservoirs associated with development will have no effect on the South Pennine Moors SAC or SPA.**

**Conclusions**

4.76 It is therefore concluded that the overall level of growth in the ACS (excluding the Ashfield area) of approximately 49,060 new homes and a 7% increase in population to 2026, as a result of the ACS would have the following effects.

4.77 Potential effects arising as a result of changes to air quality, deposition of air-borne pollutants, water abstraction, waste water discharges and increased recreation pressure on the South Pennine Moors SAC and SPA, the Peak District Dales SAC, the Humber Estuary SAC, SPA and Ramsar site and Rutland Water SPA and Ramsar site would not be likely to be significant, either alone or in combination with other plans or projects.

4.78 On the basis of objective information, it is not possible to rule out the likelihood of a significant effect on the Park Forest part of the prospective Sherwood Forest SPA, as a result of increased Nitrogen deposition affecting the habitats of the birds for which the site may be classified, arising from the Top Wighay Farm allocation in the ACS, in combination with other plans or projects.

4.79 The conclusion of no likely significant effect on the Birklands and Bilhaugh SAC, as a result of increased recreation pressure arising from development provided for by the ACS, relies on the assumption that the relocation of the visitor centre and the improved habitat and access management measures are implemented in the foreseeable future, and in any event within the life of the ACS.

4.80 In order to ensure compliance with the Regulations, and to 'future-proof' the ACS, the assessment of the prospective Sherwood Forest SPA required an unusual degree of application of the precautionary principle. It would assist the spatial planning of Greater Nottingham, and other local planning authority areas in the general locality, and their Habitats Regulations Appraisals in the future, if more information was available about:

a) the relationship between the density and distribution of breeding nightjar and woodlark and the recreation use of the forest areas;

b) the effects of proximity to urban areas on the prospective SPA; and

c) how the access and habitat management of the prospective SPA could be coordinated to maximise recreation potential whilst ensuring no significant adverse effect on the breeding populations of Annex 1 birds for which it may be classified.

This would reduce the need to apply the precautionary principle in the unusual way that it has been applied in this appraisal.

[23] Pers comm. via email from Bethany Lovell, Regional Habitats Directive Co-ordinator, NE Region, Environment Agency dated 16th July 2010

## 5. SCREENING THE PLAN: PART 3, THE REMAINDER OF THE DELIVERY STRATEGY

### Assessment of the remainder of Policy 2 the Spatial Strategy

**1(a) 25,320 new homes in the PUA of Nottingham**

5.1 **(A1 and B)** Potential effects of this element of the spatial strategy are fully considered under the assessment of overall level of growth provision, above. No additional effects would arise as a result of the specific location of the development in the Nottingham PUA. There are no other links or pathways for effects between the Nottingham PUA and European sites and there is no likelihood of any site-specific or local effects occurring which have not been addressed in the assessment of overall level of growth provision.

**1(b) 4,200 new homes in each of two SUEs East of Gamston and South of Clifton**

5.2 **(A1 and B)** Potential effects of this element of the spatial strategy are fully considered under the assessment of overall level of growth provision, above. No additional effects would arise as a result of the specific location of the development east of Gamston or south of Clifton. There are no other links or pathways for effects between the areas east of Gamston and south of Clifton and European sites and there is no likelihood of any site-specific or local effects occurring which have not been addressed in the assessment of overall level of growth provision.

**1(b) 1,480 new homes in one or more SUE in Broxtowe yet to be determined**

5.3 **(A1 and B)** Potential effects of this element of the spatial strategy are fully considered under the assessment of overall level of growth provision, above. No additional effects would arise as a result of the location of development in Broxtowe. Whilst the location of one or more SUE in Broxtowe remained undetermined at Option for Consultation stage, between five options, the location of the SUE(s) within Broxtowe would not make any difference to their effects, because there are no other links or pathways for effects between the any part of Broxtowe and European sites and there is no likelihood of any site-specific or local effects occurring which have not been addressed in the assessment of overall level of growth provision.

**1(c) SUEs at Top Wighay Farm and north of Papplewick Lane in Gedling**

5.4 **(A1 and B)** Potential effects of this element of the spatial strategy in terms of air quality, water abstraction and recreational pressure are fully considered under the assessment of overall level of growth provision, in section 4. Apart from proximity to urban areas, discussed below, no additional effects would arise as a result of development under this policy. There are no other links or pathways for effects between these areas and European sites and there is no likelihood of any site-specific or local effects occurring which have not been addressed in the assessment of overall level of growth provision.

**1(d) 4,420 new homes in or adjoining Ilkeston Sub-Regional Centre (including a SUE at Stanton)**

5.5 **(A1 and B)** Potential effects of these elements of the spatial strategy are fully considered under the assessment of overall level of growth provision, above. No additional effects would arise as a result of the specific location of the development in or adjoining Ilkeston, including SUE at Stanton. There are no other links or pathways for effects between the areas in or adjoining Ilkeston and European sites and there is no likelihood of any site-specific or local effects occurring which have not been addressed in the assessment of overall level of growth provision.

**1(e) Up to 8,340 new homes elsewhere in Greater Nottingham**

5.6 **(A1, B and C1)** Potential effects of this element of the spatial strategy in terms of air quality, water abstraction and recreational pressure are fully considered under the assessment of overall level of growth provision, in section 4. Apart from proximity to urban areas, discussed below, no additional effects would arise as a result of development under this policy. There are no other links or pathways for effects between these areas and European sites and there is no likelihood of any site-specific or local effects occurring which have not been addressed in the assessment of overall level of growth provision.

5.7 As indicated in section 4 above, a conclusion of no likely significant effect as a result of urban proximity to the prospective SPA cannot be determined without checking to see where the ACS is directing new development. **I**t is necessary to consider whether any areas may be affected, for example around Calverton, Hucknall or Ravenshead.

5.8 It has been accepted elsewhere[24] that these effects are likely to be significantly reduced or indeed avoided, where there is substantial physical separation between the urban development (usually housing but to a lesser extent, employment and leisure uses too). In Dorset and the Thames Basin a buffer of 400m in which no additional residential development should occur has been embedded in the statutory development plans[25].

5.9 Looking in more detail at the spatial relationship between the prospective SPA and Calverton, there is already a separation of some 1,000m at the closest point between the existing urban area and the nearest part of the prospective SPA. The intervening land is Green Belt and comprises, amongst other things, former coal mining spoil disposal areas and former colliery yard areas. If the area north of the B6386 was not used for any urban expansion of Calverton, there would be no likely significant effect on the indicative core areas of the prospective SPA at Watchwood Plantation (FC), Sansom Wood (FC) and the NWT reserve at Foxcovert Plantation as a result of proximity to urban areas.

5.10 Looking in more detail at Hucknall, only one IBA area lies in close proximity to the town and the allocations. However, as explained elsewhere in this record, these areas are treated in the same way as the Natural England 'indicative core areas'. The proposal North of Papplewick Lane would not affect any part of the prospective SPA in terms of proximity to urban areas. However, the proposed allocation at Top Wighay Farm could have such an effect in light of its proximity to one part of the prospective SPA at Park Forest. However, the A611 dual carriageway would provide significant mitigation, because it would have a severance effect for links between the prospective SPA and the development, including some deterrent effect in relation to predation by cats; a significant deterrent effect for dumping and increased fire risk (children accessing the area); and a full avoidance measure for fragmentation and encroachment. On balance, it is considered that the distance between the proposed development and the prospective SPA at Park Forest, together with the effect of the A611 dual carriageway would mean that there would not be likely to be a significant effect, as a result of proximity to urban areas, at Top Wighay Farm.

[24] Liley, D., Clarke, R. T., Underhill-Day, J. & Tyldesley, D. (2006) Evidence to support the Appropriate Assessment of development plans and projects in south-east Dorset. Footprint Ecology / Dorset County Council

[25] For example the former South East Plan (RSS) and the current Bracknell Forest Borough Council adopted Core Strategy

5.11 Looking in more detail at Ravenshead, only IBA areas lie in close proximity to the village. However, as explained elsewhere in this record, these areas are treated in the same way as the Natural England 'indicative core areas'. The IBA abuts the village to the west, on the west side of the A60, and itself contains a low density of residential development for a substantial proportion of the IBA. A better understanding as to the reasons why this developed area is part of the IBA would require a detailed analysis of breeding bird records and land use beyond the scope of this appraisal. In the meantime, therefore a precautionary approach is adopted and it is assumed there is a case for constraining further development west of the A60. In any event this approach is consistent with Green Belt and other policies.

5.12 To the north of Ravenshead, IBA areas are located at Normanshill Wood and Harlow Wood at distances of approximately 600m to 1,000m from the main built up areas of Ravenshead. In absence of detailed information and analysis, a precautionary approach should be adopted and it is assumed there is a case for constraining further development north of Ricket Lane. In any event this approach is consistent with Green Belt.

5.13 **Owing to the uncertainties as to the effects of the proximity of urban development on the prospective SPA, it is recommended that in the absence of more detailed analysis (beyond the scope of this appraisal), a precautionary approach should be adopted and Policy 2(1)(e) should preclude urban extensions north of the B6386 north of Calverton, and, at Ravenshead, west of the A60 and north of Ricket lane.**

**Policy 2(2) Significant new employment development as specified**

5.14 **(A1 and B)** Potential effects of this element of the spatial strategy are fully considered under the assessment of overall level of growth provision, above. No additional effects would arise as a result of the provision of significant new employment development in the PUA or as part of the SUEs specified in the policy. There are no other links or pathways for effects between these areas and European sites and there is no likelihood of any site-specific or local effects occurring which have not been addressed in the assessment of overall level of growth provision.

**Policy 2(3) Retail, social, leisure and cultural development as specified**

5.15 **(A1)** Retail, social, leisure and cultural development in the stated locations (city and town centres, specified regeneration zones and the specified SUEs) would not have any effect on a European site.

**Policy 2(4) Major new transport infrastructure as specified**

5.16 **(A1, A6 and B)** None of the major new transport infrastructure projects, which are proposed as part of the ACS and related local transport plans, are located in an area where they would be likely to have any effect on a European site. Some of the proposals listed, including those relating to the A46T and A453T are central government proposals which it would not be appropriate to assess in this appraisal. Although some sites are potentially susceptible to effects of air pollution from increased traffic levels, or traffic on new roads, these effects are localised and could not extend to the distances from which all the projects are located from European sites, see further the discussion on air quality and air-borne pollutants earlier in this record.

**Policy 2(5) Retention of the principle of the Green Belt**

5.17 **(A1)** The retention of the Green Belt and application of Green Belt policies for Greater Nottingham would not be likely to have any effect on a European site. The effects of the SUEs have been assessed in the assessment of the overall growth

provision (Policy 2(1) and Policy 3). Some of the sensitive habitats of the prospective Sherwood Forest SPA lie in or close to the Green Belt and the policy is likely to assist in the protection of the site.

**Policy 2(6) Strategic green infrastructure**

5.18 **(A1)** Generally the policy will have benefits for biodiversity and will help to relieve pressure on sensitive European sites by improving open space provision closer to urban areas.

5.19 Potential effects resulting from enhancement of public access in the Greenwood Community Forest are considered under Policy 15 in Table 5 below.

**Part 3 the Delivery Strategy Other Policies in (a) Sustainable Growth**

**Table 5**
**Analysis of the Delivery Strategy (a) Sustainable Growth**

| Policy | Assessment and category of potential effect |
|---|---|
| 1 Climate change | **A1** partly qualitative and setting standards for development proposed by other policies. Partly **A2** reductions in air pollution would have potential benefits for European sites, although these have not been quantified because they would be positive effects if they occur, and the effects of the policy could not be distinguished from other sources of air quality improvement. Partly **A5** a general statement of policy.<br>Partly **B** where the policy promotes appropriate stand-alone renewable energy schemes, wind turbines could theoretically affect birds in the Sherwood Forest Prospective SPA but given the characteristics of the site, its interest features and the conservation objectives, the risk is considered to be hypothetical and negligible |
| 3 Sustainable Urban Extensions | **A1** the policy sets criteria and qualitative requirements for the delivery of Sustainable Urban Extensions proposed in Policy 2. It provides the necessary policy framework for subsequent AAPs, SPDs and master plans for the SUEs. It requires appropriate ancillary developments such as local retail, education, health and leisure facilities in the SUEs but the effects of the SUEs as a whole are assessed under policy 2 and the ancillary developments expected by Policy 3 would not materially add to the range or scale of effects considered under Policy 2 |
| 4 Employment provision and economic development | **A1** policy element 4(7).<br>**A3** policy elements 4(1), 4(2), 4(4), 4(8) and 4(9) all steer economic and employment development to existing urban areas or protect existing sites where there is no evidence that existing employment use is having any negative effect on a European site<br>**A4** policy element 4(5).<br>**A5** policy element 4(5) is also a general statement of policy<br>**B** policy element 4(6) encourages development in the rural areas which could theoretically affect birds in the Sherwood Forest Prospective SPA, but given the caveat in the policy that development must be of an 'appropriate scale' and given the limited scale of such development, the location and characteristics of the prospective SPA, its interest features and the conservation objectives, the risk is considered to be negligible, even in combination with the effects of the SUEs and other plans or projects<br>Policy element 4(3) refers to SUEs and is considered under Policy 2 |

| Table 5<br>Analysis of the Delivery Strategy (a) Sustainable Growth | |
|---|---|
| **Policy** | **Assessment and category of potential effect** |
| 5 Nottingham, city centre | **A3, A5** partly a statement of general policy but also has the effect of steering a range of developments to the city centre and thus away from European sites.<br>**B** Development in the city centre unlikely to have any significant effect on any European site due to distance / lack of links or pathways for effects; air quality effects would be hypothetical rather than real risks to European sites |
| 6 The role of town and local centres | **A3, A5** partly a statement of general policy but also has the effect of steering a range of developments to the town, district and local centres and thus away from European sites.<br>**B** Development in the town, district and local centres unlikely to have any significant effect on any European site due to distance / lack of links or pathways for effects; air quality effects would be hypothetical rather than real risks to European sites |
| 7 Regeneration | **A3 / B** Additional development arising from the regeneration areas is included in the over-all assessment of the spatial strategy. Taking each proposal separately, none of the specified locations would be likely to generate significant effects on any European site. |

5.20 It will be seen from the above analysis that **Delivery Strategy (a) Sustainable Growth (excluding the Spatial Strategy), would not be likely to have any significant effect on any European site, alone or in combination with other plans or projects**.

**Part 3 the Delivery Strategy Other Policies in (b) Places for People**

| Table 6<br>Analysis of the Delivery Strategy (b) Places for People | |
|---|---|
| **Policy** | **Assessment and category of potential effect** |
| 8 Housing size, mix and choice | **A1** Policy 8(1) and (2) are qualitative requirements for new housing development and requirements for the composition of the new housing stock.<br>**B** 8(3) provides for housing development over and above that assessed in Policy 2. However, the scale of this housing, in or adjacent to rural settlements to meet highly specific needs and criteria, is unlikely to increase the effects of new housing development in Greater Nottingham on European sites to any significant extent, and is likely to have a negligible effect on European sites |
| 9 Gypsies, travellers and travelling showpeople | **B** 8(3) provides for development over and above that assessed in Policy 2. However, the scale of this type of development, the criteria that proposals must meet in order to be granted permission and the preference to locate sites in main settlements or SUEs means that such development is unlikely to increase the effects of new housing development in Greater Nottingham on European sites to any significant extent, and is likely to have a negligible effect on European sites |

| Table 6<br>Analysis of the Delivery Strategy (b) Places for People | |
|---|---|
| **Policy** | **Assessment and category of potential effect** |
| 10 Design historic environment and enhancing local identity | **A1 / A2** this policy sets out qualitative requirements for new development and is intended to protect and enhance the natural built and historic environment |
| 11 Local services and healthy life styles | **A1** provides for community facilities in development that is already assessed under Policies 2 or 7 and elsewhere as needed, and such development located in accordance with the criteria in the policy would not affect a European site |
| 12 Culture sport and tourism | **A5** a general statement of policy (12(d))<br>**B** policy 12(a) – (c) encourages new culture, tourism and sporting facilities but if they are located in accordance with the policy they would not be likely to have a significant effect on a European site |
| 13 Managing travel demand | **A5** a general statement of policy<br>**B** given the hierarchical approach and the spatial distribution of development in relation to the distribution of European sites, it seems highly unlikely that major highway capacity enhancements to deal with residual car demand would be likely to have a significant effect on a European site |
| 14 Transport infrastructure priorities | **A5** partly a general statement of policy<br>**A1** given the spatial distribution of the listed schemes in relation to the distribution of European sites, the improvements listed in all elements of the policy would not affect a European site<br>**A6** some transport proposals listed, including those relating to the A46T, A52T and A453T are central government proposals which it would not be appropriate to assess in this appraisal |

5.21 It will be seen from the above analysis that **Delivery Strategy (b) Places for People would not be likely to have any significant effect on any European site, alone or in combination with other plans or projects**.

**Part 3 the Delivery Strategy Other Policies in (c) Our Environment**

| Table 7<br>Analysis of the Delivery Strategy (c) Our Environment | |
|---|---|
| **Policy** | **Assessment and category of potential effect** |
| 15 Green infrastructure, parks and open space | **A2** Generally the policy will have benefits for biodiversity and will help to relieve pressure on sensitive European sites by improving open space provision closer to urban areas.<br>**C.1** However, the Greenwood Community Forest is identified as an existing Green Infrastructure asset to be protected and enhanced. According to the policy and justification, enhancement will include improvements to public access which, depending on their location, could attract higher numbers of visitors to the more sensitive parts of Sherwood Forest including the prospective SPA. |
| 16 Biodiversity | **A2** |
| 17 Landscape character | **A2** |

5.22 It will be seen from the above analysis that **Delivery Strategy (c) Our Environment policies 16 and 17 would not be likely to have any significant effect on any European site**. **However it cannot be ruled out on the basis of objective information that the identification of the Greenwood Community Forest as a Green Infrastructure asset for enhancement could have a significant effect on the prospective Sherwood Forest SPA**.

5.23 This is because it could attract higher numbers of visitors to the more sensitive parts of Sherwood Forest, including the prospective SPA. Policy 16(b) is insufficient to remove the likelihood of a significant effect, largely because it merely says that the green infrastructure network improvements will benefit biodiversity where possible. The likelihood of a significant effect cannot therefore be ruled out on the basis of objective information and, if retained without an appropriate qualification or caveat in the Pre-Submission draft for representations, could require that document to be subject to an appropriate assessment. Such an assessment would be likely to require a qualification or caveat to be applied to protect the prospective Sherwood Forest SPA and enable the plan making authorities to ascertain that the next stage of the ACS would not have an adverse effect on a European site.

**5.24** A qualification or caveat should be added to the Pre-Submission draft for representations. **It is recommended that the following clause be added to Policy 15:**

**"Enhancement of the Greenwood Community Forest will ensure that there would be no significant effect on the prospective Sherwood Forest Special Protection Area"**

**Part 3 the Delivery Strategy in Other Policies in (d) Making it Happen**

**Table 8**
**Analysis of the Delivery Strategy (d) Making it Happen**

| **Policy** | **Assessment and category of potential effect** |
|---|---|
| 18 Infrastructure | **A5** a general statement of policy as to how infrastructure will be provided and geared rather than making proposals for infrastructure projects |
| 19 Developer contributions | **A5** a general statement of policy as to how developer contributions will be sought. |

5.25 It will be seen from the above analysis that **Delivery Strategy (d) Making it Happen would not be likely to have any significant effect on any European site, alone or in combination with other plans or projects**.

## 6. CONCLUSIONS AND CONSULTATION

6.1 Throughout this screening process the consultants have maintained close liaison with the client authorities and Natural England. The scope of the screening exercise, particularly in terms of the sites to be discounted and those to be considered was agreed with Natural England.

6.2 The consultants are grateful for the extensive cooperation of Natural England staff and officers of the Peak District National Park Authority for their help in compiling the information and aiding the assessment of the potential effects of the ACS. We are also grateful for the helpful input from the Nottinghamshire Wildlife Trust and the comments of the RSPB on a draft of the record.

6.3 The findings of the appraisal may be summarised as follows.

6.4 There would be no effect on the River Mease SAC.

6.5 Potential effects arising as a result of changes to air quality, deposition of air-borne pollutants, water abstraction, waste water discharges and increased recreation pressure on the South Pennine Moors SAC and SPA, the Peak District Dales SAC, the Humber Estuary SAC, SPA and Ramsar site and Rutland Water SPA and Ramsar site would not be likely to be significant, either alone or in combination with other plans or projects.

6.6 There could be potentially significant effects of the ACS on the prospective Sherwood Forest SPA. Two such effects could be avoided by modifications to policies in the next iteration of the ACS at Pre-Submission draft for representations.

6.7 Firstly, owing to the uncertainties as to the effects of the proximity of urban development on the prospective SPA, it is recommended that in the absence of more detailed analysis (beyond the scope of this appraisal), a precautionary approach should be adopted and Policy 2(1)(e) should preclude urban extensions north of the B6386 north of Calverton and, at Ravenshead, west of the A60 and north of Ricket Lane.

6.8 Secondly, the potential for a likely significant effect as a result of policy 15 of the Delivery Strategy promoting enhancement of the Greenwood Community Forest could attract higher numbers of visitors to the more sensitive parts of Sherwood Forest, including the prospective SPA. The likelihood of a significant effect cannot therefore be ruled out on the basis of objective information. Consequently, it is recommended that the following clause be added to Policy 15 in the Pre-Submission draft:

"Enhancement of the Greenwood Community Forest will ensure that there would be no significant effect on the prospective Sherwood Forest Special Protection Area"

6.9 On the basis of objective information, it is not possible to rule out the likelihood of a significant effect on the Park Forest part of the prospective Sherwood Forest SPA, as a result of increased Nitrogen deposition affecting the habitats of the birds for which the site may be classified, arising from the Top Wighay Farm allocation in the ACS, in combination with other plans or projects. Therefore, if the prospective SPA is advanced with the intention of it being classified as a SPA, the ACS will need to be subject to further assessment. Depending on the stage the prospective SPA has progressed to, this may involve an 'appropriate assessment' before the ACS is adopted.

6.10 The conclusion of no likely significant effect on the Birklands and Bilhaugh SAC, as a result of increased recreation pressure arising from development provided for by the ACS, relies on the assumption that the relocation of the visitor centre and the improved habitat and access management measures are implemented in the foreseeable future, and in any event within the life of the ACS.

6.11 Assuming that the policy caveats in paragraphs 6.7 and 6.8 are added; that the project at the Birklands and Bilhaugh SAC is implemented as described in paragraph 6.10; and that no other changes are proposed in the Pre-Submission draft for representations that have not been assessed as part of this screening process (which could affect a European site), on a precautionary basis, the ACS will need to be subject to further assessment only in respect of the potential effects on the Park Forest part of the prospective Sherwood Forest SPA, as a result of the Top Wighay Farm allocation, in combination with other plans or projects, as described in paragraph 6.9 above.

6.12 In order to ensure compliance with the Regulations, and to 'future-proof' the ACS, the assessment of the prospective Sherwood Forest SPA required an unusual degree of application of the precautionary principle. It would assist the spatial planning of Greater Nottingham, and other local planning authority areas in the general locality, and their Habitats Regulations Appraisals in the future, if more information was available about:

a) the relationship between the density and distribution of breeding nightjar and woodlark and the recreation use of the forest areas;

b) the effects of proximity to urban areas on the prospective SPA; and

c) how the access and habitat management of the prospective SPA could be coordinated to maximise recreation potential whilst ensuring no significant adverse effect on the breeding populations of Annex 1 birds for which it may be classified.

6.13 **However, it will be important to screen all proposed changes to the ACS, at all subsequent stages, including before and after examination, for the likelihood of significant effects on any European site, particularly the Sherwood Forest prospective SPA**.

6.14 If proposed changes to the ACS would be likely to have a significant effect on any European site, it will be necessary to undertake an 'appropriate assessment' of that proposed change, and ascertain that it would not adversely affect the integrity of any European site before the ACS is adopted.

## ANNEX 1

## METHODOLOGY OF THE SCREENING PROCESS

The screening of the ACS for the likelihood of significant effects was undertaken in accordance with the methodology outlined in section 1, having regard to best practice guidance described in paragraphs 1.10 – 1.11 of this record.

All aspects of the plan were systematically checked and assigned to a category from A – D according to the potential for effects on the European sites potentially affected.

The categories are:

(e) Category A: elements of the plan that would have no negative effect[26] on a European site at all;

(f) Category B: elements of the plan that could have an effect, but the likelihood is there would be no significant effect on a European site either alone or in combination with other elements of the same plan, or other plans or projects;

(g) Category C: elements of the plan that would be likely to have a significant effect alone and will require the plan to be subject to an appropriate assessment before the plan may be adopted;

(h) Category D: elements of the plan that would be likely to have a significant effect in combination with other elements of the Local Development Plan, or other plans or projects and will require the plan to be subject to an appropriate assessment before the plan may be adopted.

Categories A, C and D are subdivided to more clearly explain the different reasons for assignment to these categories. The four categories and their sub-divisions are discussed below.

All of the potential effects referred to in the tables below are sourced, reasoned, described and analysed in more detail in the Natural England, Scottish Natural Heritage and Countryside Council for Wales guidance referred to in section 1. That explanation is extensive, so it is not repeated here.

A number of objectives and policies in core strategies typically cover a range of policy issues or aims and may have several 'parts' to them, which could have differing effects on European sites. Consequently, some objectives, policies and proposals in the ACS could be assigned to more than one category or sub division. Should a policy or proposal would fall partly into category C or D, then the assessment will indicate which part of the policy or proposal would be likely to have that effect, so that the scope of the 'appropriate assessment' is clear.

### *Category A: No negative effect*

Only negative effects would be considered because the European Court of Justice ruled that only effects that could undermine the conservation objectives of a European site are considered likely to have significant effects (see footnote on this page).

[26] 'Negative' effects, in the context of this and all the following lists, are effects that would be likely to undermine the conservation objectives of a European site, see European Court of Justice Case C-127/02 known as the *Waddensee Ruling* 7th September 2004, paragraph 47

There are likely to be six types of options, policies and proposals in the plan that could have no negative effect at all on any European site, either alone or in combination with other policies, plans or projects, as shown in Table 2 below.

Elements of the plan can only be assigned to A4 in Table 2 where no development could occur through the policy itself, because the development is implemented through later policies in the same plan, which are more specific and therefore more appropriate to assess for their potential effects on European Sites.

These kinds of policies may be found in a plan's strategic objectives or overall strategy, for example, where it states that there is a need for housing or employment development but makes no proposal as to how or where the development is to be provided, dealing with this in a more specific policy in a later chapter or section of the ACS, which of course, will be subject to more detailed appraisal.

| **Table A1.1<br>Subdivision of Category A:<br>No Negative Effect** | |
|---|---|
| **A1** | Policies etc that will not themselves lead to development e.g. because they relate to design or other qualitative criteria for development, or they are not a land use planning policy; or because the policy would not lead to development of a kind or in a location that could affect a European site. |
| **A2** | Policies etc intended to protect, conserve or enhance the natural, built or historic environment, including biodiversity, where enhancement measures will not be likely to have any negative effect on a European Site |
| **A3** | Policies etc that positively steer development away from relevant European sites and associated sensitive areas |
| **A4** | Strategic policies implemented by more detailed policies in the same plan where the effects can be more clearly assessed |
| **A5** | General statements of policy or policies which only express general intentions or political aspirations |
| **A6** | Proposals which are referred to for completeness or as examples, or because of their importance for spatial planning in the plan area but which are not proposed by the plan itself |

***Category B: No significant effect***

The screening process may identify a policy or proposal that could, theoretically, have a potential effect, but could not have a significant (negative) effect on a European site (alone or in combination with other plans or projects) because the effects could not be significant. For example, if they occurred they would be negligible, trivial or 'de minimis', even if combined with the effects of other plans or projects; or the risk of effects is remote or hypothetical, rather than real. For a potential risk to be considered there should be credible evidence that there is a real, rather than a hypothetical, risk[27]. If there is no such evidence, significant effects can be ruled out on the basis of objective information. Such information may relate to the scale of effects; the distance from the site (where effects diminish with increasing distance); or the likelihood of the effects occurring. The circumstances prevailing at the site and in terms of the links or pathways between a proposal and the European site are taken into account. Identifying such policies or proposals needs to be approached with caution, so as to ensure compliance with the requirements for 'in-combination' effects and the application of the precautionary principle; but equally it is important not to spend appraisal resources trying to anticipate and assess every conceivable effect, but to

[27] Peter Charles Boggis, East Bavents Conservation v Natural England and Waveney District Council, Court of Appeal 20th October 2009, [2009] EWCA Civ.1061, C1/2009/0041/QBACF

concentrate on policies and proposals whose effects could be significant and cannot be ruled out objectively.

***Category C: Likely significant effect alone***

Thirdly, the screening process identifies policies or proposals that would be likely to have a significant effect alone. Once identified, such options, policies or proposals should be removed from the plan, or the plan otherwise changed, to avoid the likelihood of significant effects. If not, the plan must be taken forward for an 'appropriate assessment'.

The reasons why options, policies or proposals may affect a European site alone are summarised in the sub-divisions in Table 3.

**Table A1.2**
**Subdivision of Category C:**
**Likely Significant Effect Alone**

| | |
|---|---|
| **C1** | The option, policy or proposal could **directly affect** a European site because it provides for, or steers, a quantity or type of development onto a European site, or adjacent to it |
| **C2** | The option, policy or proposal could **indirectly affect** a European site e.g. because it provides for, or steers, a quantity or type of development that may be very close to it, or ecologically, hydrologically, biologically, chemically or physically connected to it, or it may increase disturbance or deterioration of habitat on the site as a result of increased recreational or other urban pressures |
| **C3** | Proposals for a **magnitude of development** that, no matter where it was located, the development would be likely to have a significant effect on a European site |
| **C4** | An option, or policy that makes provision for a quantity / type of development (and may indicate one or more broad locations e.g. a particular part of the plan area), but the effects are uncertain because the detailed location of the development is to be selected following **consideration of options in a later, more specific plan**. The consideration of options in the later plan will assess potential effects on European Sites, but because the development could possibly affect a European site a significant effect cannot be ruled out on the basis of objective information |
| **C5** | Options, policies or proposals for developments or infrastructure projects that could **block options or alternatives** for the provision of other development or projects in the future, which will be required in the public interest, that may lead to adverse effects on European sites, which would otherwise be avoided |
| **C6** | Options, policies or proposals which **depend on how the policies etc are implemented** in due course, for example, through the development management process. There is a possibility that if implemented in one or more particular ways, the proposal could have a significant effect on a European site |
| **C7** | Any other options, policies or proposals that would be **vulnerable to failure** under the Habitats Regulations at project assessment stage; to include them in the plan would be regarded by the EC as 'faulty planning' |
| **C8** | Any other proposal that may have an adverse effect on a European site, which might try to pass the tests of the Habitats Regulations at project assessment stage by arguing that the **plan provides the imperative reasons** of overriding public interest to justify its consent despite a negative assessment |

***Category D: Likely significant effect in combination***

Fourthly, the screening process identifies any options, policies or proposals that would be likely to have a significant effect in combination. The policies or proposals should be removed from the plan, or the plan otherwise changed, to avoid the likelihood of significant effects. If not, the plan must be taken forward for an appropriate assessment, including the relevant combination. The combination could be the cumulative effects of proposals, in the plan itself, and/or in other plans or projects.

Any element of the plan that could have an effect but would not be likely to have a significant effect alone should be checked for in combination effects with other elements of the plan (internally) and other relevant plans and projects (externally) that may add to the effects of the plan in a relevant way. Reasons why policies or proposals may affect a European site in combination are shown in Table 4.

| **Table A1.3<br>Subdivision of Category D:<br>Likely Significant Effect In Combination** | |
|---|---|
| **D1** | The option, policy or proposal alone would not be likely to have significant effects but if its effects are combined with the effects of other policies or proposals **provided for or coordinated by** the ACS (internally) the **cumulative** effects would be likely to be significant |
| **D2** | Options, policies or proposals that alone would not be likely to have significant effects but if their effects are **combined with the effects of other plans or projects**, and possibly the effects of other developments provided for in the aligned core strategies as well, the combined effects would be likely to be significant |
| **D3** | Options or proposals that are, or could be, part of a **programme or sequence of development** delivered over a period, where the implementation of the early stages would not have a significant effect on European sites, but which would dictate the nature, scale, duration, location, timing of the whole project, the later stages of which could have an adverse effect on such sites |

**Taking account of mitigation and other factors in the screening process**

During the screening process it is important to take account of any mitigation measures built into the plan[28]. However, it is not sufficient to rely on a policy protecting biodiversity, or even internationally designated sites explicitly. If another part of the plan may have a significant effect on a European site, the potential conflict or tension between the policies must be resolved in the plan, not left for future decision making.

The Waddensee ruling[29] also referred to the screening stage taking account of the characteristics and specific environmental conditions of the site concerned. Thus, the information assembled in section 2 of this record, about the site's condition and pressures acting upon it, together with information about how the site is or will be managed to reduce or eliminate adverse effects on the interest features, are relevant to the appraisal screening decisions.

Article 6.1 and 6.2 of the Habitats Directive require Member States to establish the necessary conservation measures corresponding to the ecological requirements of the interest features on the site and to take appropriate steps to avoid the deterioration of natural habitats, and the habitats of the species, as well as significant disturbance of the species, for which the sites have been designated. Thus, where a plan or project may affect a site, it may be necessary to consider whether and how Article 6.1 measures and Article 6.2 steps already being taken or to be taken, if any, may contribute to the avoidance or reduction of the effects of the plan or project; and thus, whether the effects of the plan or project would be likely to be significant in light of these measures and steps. The efficacy, reliability, duration, timing and continued deliverability of the measures should be considered if they are to be relied upon.

[28] Hart DC v Secretary of State Communities and Local Government, Luckmore Ltd, Barratt Homes Ltd, and CCW Claim No CO/7623/2007 High Court of Justice Queens Bench Division Judgment of Sullivan J 1st May 2008 [2008] EWHC 1204 Admin, 2008 WL 2148207

[29] European Court of Justice Case C-127/02 known as the ***Waddensee Ruling*** 7th September 2004, paragraph 49

## ANNEX 2

## EUROPEAN SITES ASSESSED IN THIS APPRAISAL

### 1. Birklands and Bilhaugh SAC

**Brief description**

1.1 The SAC extends to 271.84ha located in Central Nottinghamshire, in the Newark and Sherwood District Council area. It lies approximately 15km north of Greater Nottingham. The SAC is selected as one of only four known outstanding localities of old acidophilous oak woods with *Quercus robur* in the UK.

1.2 Birklands and Bilhaugh is the most northerly site selected in the UK SAC series for old acidophilous oak woods with *Quercus robur* and is notable for its rich invertebrate fauna, particularly spiders, and for a diverse fungal assemblage, including *Grifoa suphurea* and *Fistulina hepatica*. Both native oak species, *Quercus petraea* and *Quercus robur*, are present, with a mixture of age-classes, so there is good potential for maintaining the structure and function of the woodland system and a continuity of dead-wood habitats.

**Condition and current issues**

1.3 The majority (88.62%) of the site meets the Government's PSA target for site condition, but the presence of the buildings and hard standings in the country park in the SAC means that about 11% of the site remains in unfavourable condition, no change.

| % Area meeting PSA target | % Area favourable | % Area unfavourable recovering | % Area unfavourable no change | % Area unfavourable declining | % Area destroyed / part destroyed |
|---|---|---|---|---|---|
| 88.62% | 0.00% | 88.62% | 11.38% | 0.00% | 0.00% |


1.4 The site lies within Sherwood Forest which is popular for recreation. Visitor pressure can damage the fragile habitat. Historically the site would have been grazed. Cessation of this caused birch invasion, altering the open nature of the understorey and causing the scrubbing-up of the grass/heath glades. These problems are being addressed by a management committee and in the management plan and some grazing has been reintroduced.

1.5 The lack of younger trees may lead to a loss of dead wood in the future, with consequences for dead-wood invertebrates. This situation is being monitored in collaboration with Nottingham University.

1.6 Air pollution from the industrial towns causing a reduction in lichen diversity is a recognised problem. Coal-mining has been undertaken beneath the site from Welbeck and Thoresby collieries and could recur, this can cause surface subsidence which has the potential to affect woodland condition.

1.7 Although management is underway to remedy the limited age/size-class variation within stands, to manage non-native species and to reduce competitive woody growth around ancient trees, artificial buildings and hardstanding remain within the existing country park unit affecting the extent of woodland stands.

**Conservation objectives**

1.8 The conservation objectives for the Birklands and Bilhaugh SAC are to maintain, in favourable condition, the:

- ancient semi-natural wood-pasture mosaic; and
- old acidophilus oak wood on sandy plains.

Maintenance implies restoration if the feature is not currently in favourable condition.

## 2. South Pennine Moors SAC

**Brief description**

2.1 This SAC extends to 64,983.14ha in the counties of Cheshire, Derbyshire, Lancashire, Staffordshire and Yorkshire; around two-thirds is within the Peak District National Park. It lies approximately 30km from Greater Nottingham.

2.2 The SAC is selected as one of the best areas in the UK for European dry heaths, blanket bogs and old sessile oak woods with *Ilex* and *Blechnum* and for the significant presence of North Atlantic wet heath, transition mires and quaking bogs.

European dry heaths

2.3 The site is representative of upland dry heath at the southern end of the Pennine range, the habitat's most south-easterly upland location in the UK. Dry heath covers extensive areas, occupies the lower slopes of the moors on mineral soils or where peat is thin, and occurs in transitions to acid grassland, wet heath and blanket bogs. The upland heath of the South Pennines is strongly dominated by heather *Calluna vulgaris*. Its main NVC types are H9 *Calluna vulgaris – Deschampsia flexuosa* heath and H12 *Calluna vulgaris – Vaccinium myrtillus* heath. More rarely H8 *Calluna vulgaris – Ulex gallii* heath and H10 *Calluna vulgaris – Erica cinerea* heath are found. On the higher, more exposed ground H18 *Vaccinium myrtillus – Deschampsia flexuosa* heath becomes more prominent. In the cloughs, or valleys, which extend into the heather moorlands, a greater mix of dwarf shrubs can be found together with more lichens and mosses. The moors support a rich invertebrate fauna, especially moths, and important bird assemblages.

Blanket bogs*

2.4 It should be noted that this is a 'priority' habitat feature. This site represents blanket bog in the south Pennines, the most south-easterly occurrence of the habitat in Europe. The bog vegetation communities are botanically poor. Hare's-tail cottongrass *Eriophorum vaginatum* is often overwhelmingly dominant and the usual bog-building *Sphagnum* mosses are scarce. Where the blanket peats are slightly drier, heather *Calluna vulgaris*, crowberry *Empetrum nigrum* and bilberry *Vaccinium myrtillus* become more prominent. The uncommon cloudberry *Rubus chamaemorus* is locally abundant in bog vegetation. Bog pools provide diversity and often are characterised by common cottongrass *E. angustifolium*. Substantial areas of the bog surface are

eroding, and there are extensive areas of bare peat. In some areas erosion may be a natural process reflecting the great age (9000 years) of the south Pennine peats.

Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles

2.5 Around the fringes of the upland heath and bog of the south Pennines are blocks of old sessile oak woods, usually on slopes. These tend to be dryer than those further north and west, such that the bryophyte communities are less developed (although this lowered diversity may in some instances have been exaggerated by the effects of 19th century air pollution). Other components of the ground flora such as grasses, dwarf shrubs and ferns are common. Small areas of alder woodland along stream-sides add to the overall richness of the woods

2.6 There are also two Annex I habitats present as qualifying features, but not a primary reason for selection of this site. They should be equally considered in any appraisal. The first is Northern Atlantic wet heaths with *Erica tetralix*; the second is Transition mires and quaking bogs.

**Condition and current issues**

2.7 The large majority (93.78%) of the SAC meets the Government PSA target for condition. For example, the Dark Peak SSSI condition is summarised below.

| % Area meeting PSA target | % Area favourable | % Area unfavourable recovering | % Area unfavourable no change | % Area unfavourable declining | % Area destroyed / part destroyed |
|---|---|---|---|---|---|
| 93.78% | 4.78% | 89.00% | 5.06% | 1.16% | 0.00% |


2.8 Land management is primarily driven by agriculture, rough grazing for sheep, and grouse-shooting.

2.9 The South Pennine Moors SAC is largely enclosed on two sides by large industrial urban areas, which means that large numbers of people use the area for recreational activities. However, none of the 245 units of the component SSSI are recorded as being in unfavourable condition either wholly or partly because of recreational / visitor pressure. Where not in favourable condition the reasons are recorded as drainage, inappropriate or lack of managed moor burning and overgrazing. Natural England's condition assessment indicates no reference to damaging recreational pressure. Only 20.84 ha are recorded as unfavourable owing to accidental burning.

2.10 Access management has been a key issue exacerbated by the Countryside and Rights of Way Act open access provisions. Mechanisms for addressing access management issues include a range of fora, research and the role of organisations such as the Peak District National Park Authority and its Ranger Service.

2.11 Accidental fires can cause extensive damage to vegetation. The National Park Authority has produced a strategic Fire Plan and areas are closed to the public at times of high fire risk. Maintenance of the ecosystems relies primarily on appropriate grazing levels and burning regimes. There are a number of key pressures upon the site; these include overgrazing by sheep, burning as a tool for grouse moor management and inappropriate drainage through moor-gripping. All these issues are being tackled, and an integrated management strategy and conservation action programme has been produced as part of an EU funded LIFE project for the area to the north of the National Park. Within the Park, the agri-environment schemes are important mechanisms in attempts to achieve balanced and favourable management. Management of the site, especially north of the National Park, is further complicated by the large number of commons. The National Park Authority owns a significant area of moorland, as does the National Trust.

2.12 Atmospheric pollution over the last few hundred years has depleted the lichen and bryophyte flora and may be affecting dwarf-shrubs. The impact has arguably been greatest on blanket bog, wet heath and transition mire where the bog-building *Sphagnum* mosses have been largely lost. Combined with historical overgrazing, burning (accidental and deliberate), drainage and locally trampling, large areas of blanket bog have become de-vegetated and eroded. It is unclear at this stage whether the effects are irreversible. Attempts over recent decades to reverse these processes have achieved mixed and limited results.

2.13 As will be seen from the summary table and pie chart above, the combination of these effects means that most if not all of the blanket bog is not classed as favourable according to Natural England's condition assessment criteria. Whilst all efforts can be made to control current factors such as current grazing and burning patterns, current atmospheric pollutant levels and access impacts, it is unclear whether this can fully mitigate the long-term influence of the historical factors such as atmospheric pollution, past burning and overgrazing. The situation is further complicated by a view that some erosion features can be considered natural phenomena of intrinsic interest. It may not always be appropriate to try and re-vegetate bare peat even if suitable techniques exist.

2.14 The former extensive cover of woodland has declined over many centuries to the point that it is fragmented, relatively small-scale and largely restricted to steeper valley sides. There is no woodland included in the site to the north of the National Park. Remaining woods are often unfenced and open to grazing which restricts tree regeneration. In some *Rhododendron* has invaded, choking out native flora. These issues are being tackled through the Forestry Commission's grant schemes for creating new native woodland, and agri-environment schemes though more incentives and resources are probably needed. As well as restoring existing stands of woodland there is an emphasis on re-creation to expand and link fragments which inevitably involves changing existing habitats. This will raise questions over the balance of vegetation types desirable on the site but given woodland would naturally have covered much of the area it's expansion needs to be considered seriously.

2.15 The flora of woodlands, as with bog and heath, has suffered from poor air quality. Again, it is less clear what can be done to reverse this situation other than to try and ensure continued improvements in air quality to allow affected species to re-colonise if they can.

**Conservation objectives**

2.16 The conservation objectives for the European interests are: to maintain, in favourable condition, the:

- blanket bog (active only);
- dry heaths;
- northern Atlantic wet heaths with *Erica tetralix*;
- transition mires and quaking bogs;
- old oak woods with *Ilex* and *Blechnum* in the British Isles.

Maintenance implies restoration if the feature is not currently in favourable condition.

## 3. The Peak District Dales SAC

**Brief description**

3.1 This SAC extends to 2,326.33ha in the counties of Derbyshire and Staffordshire; around two-thirds is within the Peak District National Park. It lies approximately 30km from Greater Nottingham.

3.2 The SAC is selected as one of the best areas in the UK for semi-natural dry grasslands and scrubland facies on calcareous substrates; *Tilio-Acerion* forests of slopes, screes and ravines; and white-clawed (or Atlantic stream) crayfish. It is also selected for the significant presence of European dry heaths; Calaminarian grasslands; alkaline fens; calcareous and calcshist screes of the montane to alpine levels (of which there is less than 1000ha in the UK); calcareous rocky slopes with chasmophytic vegetation (of which there is less than 1000ha in the UK); brook lamprey and bullhead.

Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)

3.3 Peak District Dales is one of the most extensive surviving areas in England of CG2 *Festuca ovina – Avenula pratensis* grassland. Grasslands at this site range from hard-grazed short turf through to tall herb-rich vegetation, with transitions through to calcareous scrub and 9180 *Tilio-Acerion* forests – a diversity of structural types unparalleled in the UK. There is also a great physical diversity due to rock outcrops, cliffs, screes and a variety of slope gradients and aspects. In contrast to examples of *Festuca – Avenula* grassland on chalk to the south, these grasslands are less at risk from the threat of invasion by upright brome *Bromopsis erecta* and tor-grass *Brachypodium pinnatum*, which are at the edge of their range here and have limited vigour. The relatively cold oceanic nature of the climate means that there is enrichment with northern floristic elements, such as limestone bedstraw *Galium sterneri* and globeflower *Trollius europaeus*.

*Tilio-Acerion* forests of slopes, screes and ravines * Priority feature

3.4 Representing the north-central part of its UK range, this site in the English Midlands contains a large area of *Tilio-Acerion*, dominated by ash *Fraxinus excelsior*. Locally, sycamore *Acer pseudoplatanus* is abundant. The Dales provide good examples of woodland-scrub-grassland transitions, with associated rich invertebrate populations and plant communities. Among the uncommon plants present in the woods are mezereon *Daphne mezereum* and green hellebore *Helleborus viridis*, as well as whitebeams *Sorbus* spp. on the crags.

3.5 There are also five Annex I habitats present as qualifying features, but not a primary reason for selection of this site. They should be equally considered in any appraisal. They are:

a) 4030 European dry heaths
b) 6130 Calaminarian grasslands of the *Violetalia calaminariae*

c) 7230 Alkaline fens
d) 8120 Calcareous and calcshist screes of the montane to alpine levels (T*hlaspietea rotundifolii*)
e) 8210 Calcareous rocky slopes with chasmophytic vegetation.

3.6 The site contains the following Annex II species that is a primary reason for selection of this SAC: 1092 White-clawed (or Atlantic stream) crayfish *Austropotamobius pallipes.* The River Dove represents white-clawed crayfish in a high-quality, upland limestone river, in the north-east of the species' UK range.

3.7 There are also two Annex II species present as qualifying features, but not a primary reason for selection of this site. They should be equally considered in any appraisal. They are:
a) 1096 Brook lamprey *Lampetra planeri*
b) 1163 Bullhead *Cottus gobio*

**Condition and current issues**

3.8 The large majority (e.g. 97.05% of the Wye Valley component) of the SAC meets the Government PSA target for condition. For example the condition assessment of the Wye Valley SSSI component is as follows

| % Area meeting PSA target | % Area favourable | % Area unfavourable recovering | % Area unfavourable no change | % Area unfavourable declining | % Area destroyed / part destroyed |
|---|---|---|---|---|---|
| 97.05% | 50.62% | 46.43% | 2.30% | 0.65% | 0.00% |


3.9 None of the 71 units of the component SSSI are recorded as being in unfavourable condition either wholly or partly because of recreational / visitor pressure.

3.10 The main threat to the limestone grasslands of the Peak District Dales is inappropriate grazing management. The ideal management for nature conservation purposes - light grazing throughout most of the year, with a break in grazing during the spring and early summer - tends to conflict with modern agricultural regimes. The result is either: neglect and invasion by scrub; or overgrazing and the loss of the important vegetation communities. A number of the daleside grasslands are managed as part of a larger grazing unit with the richer improved plateau lands, with the result that any regulation of stocking levels in the dales becomes difficult. Some of the dalesides are now managed under agri-environment schemes, which have brought about considerable improvements in their management, particularly since the mid-1990's.

3.11 Proposed developments such as quarrying can have the potential to interfere with drainage patterns within the site and dust deposition from quarrying is also an issue.

3.12 The woodlands within the SAC occupy very steeply-sloping dalesides, where access is always going to be problematic, and development pressures are therefore limited. Existing permission for limestone or mineral extraction is a potential threat to some of the woodlands on one part of the site. Neglect has resulted in invasion by non-native species in some woods. This is now being addressed where possible through management. In some areas access by grazing livestock to some of the woodlands has resulted in a degraded ground flora, and limited regeneration of the shrub and canopy species. Once again, this is to be addressed, wherever practicable, through management. The dominance of sycamore and its regeneration potential are a problem whilst it is considered a non-native part of the woodland. Removal of sycamore with the eventual aim of eradication would be a very long-term goal. Some mature sycamore should be left as veterans. This will in part make up for the fact that there are few veteran trees in the woods. To have a natural and diverse age structure is therefore a long-term aspiration.

3.13 In addition to grassland and woodland there are a range of scrub communities some of which are valuable for nature conservation. They are a key part of a natural woodland and an open daleside. The scrub also illustrates how neglected grassland will revert to woodland whilst grazed woodland may not regenerate. A balance between woodland, grassland and scrub needs to be struck. There is a continuing need to work closely with game fishing interests to ensure that fishery management does not adversely affect the freshwater features of the SAC. Shooting may impact on the overall ecology of the woodland.

**Conservation objectives**

3.14 The conservation objectives for the European interests are: to maintain, in favourable condition, the:

- Semi-natural dry grasslands and scrubland facies on calcareous sub-strates
- Tilio – Acerion forests of skopes, screes and ravines;
- European dry heaths;
- Calaminarian grasslands;
- Alkaline fens;
- Calcareous and calcshist screes of the montane to alpine levels;
- Calcareous rocky slopes with chasmophytic vegetation

And to maintain, in favourable condition, the habitats of the White-clawed (or Atlantic stream) crayfish, Brook lamprey and Bullhead.

Maintenance implies restoration if the feature is not currently in favourable condition.

## 4. South Pennine Moors (Phases 1 and 2) SPA

**Brief description**

4.1 The South Pennine Moors SPA includes the major moorland blocks of the South Pennines from Ilkley in the north to Leek and Matlock in the south. It covers extensive tracts of semi-natural moorland habitats including upland heath and blanket mire. The site is of European importance for several upland breeding species, including birds of prey and waders. Both Merlin *Falco columbarius* and Golden Plover *Pluvialis apricaria* spend some of their time feeding outside the SPA on adjacent areas of in-bye land. The northern end of the South Pennine Moors SPA is within 10 km of the North Pennine Moors SPA which supports a similar assemblage of upland breeding

**Condition and current issues**

4.2 About 99% of the Eastern Peak District Moors component SSSI meets the Government's PSA target for condition as indicated below.

| % Area meeting PSA target | % Area favourable | % Area unfavourable recovering | % Area unfavourable no change | % Area unfavourable declining | % Area destroyed / part destroyed |
|---|---|---|---|---|---|
| 99.33% | 30.95% | 68.38% | 0.41% | 0.25% | 0.00% |


4.3 Approximately two-thirds of the moorlands are open to public access. Habitat damage through physical erosion or fire, combined with disturbance of breeding birds, can be significant. Initiatives for sustainable recreation are being developed. Many habitats are sub-optimal (in vegetation terms) as a consequence of historic air pollution, high grazing pressure and wildfire burns. Grazing pressure is generally being lowered and appropriate burning encouraged by two separate ESAs which encourage and support habitat restoration. Notwithstanding these schemes, evidence suggests that breeding birds in the south-west of the area may be declining on both open moorland and enclosed rough grazing land, possibly due to general agricultural improvement of the surrounding areas which are used by some species for some of their habitat requirements; e.g. golden plover feed on in-bye land off the moor.

4.4 The South Pennine Moors (Phase 2) is flanked on two sides by large industrial urban areas, which means that large numbers of people use the area for recreational activities. Maintenance of the ecosystems on which the birds depend relies on appropriate grazing levels and burning regimes, and overgrazing by sheep is a key pressure on the site. Management of grazing is further complicated by the presence of a large number of commons within the SPA. Pressures outside the site, in particular the loss of bird feeding areas through agricultural intensification, increase the vulnerability of the bird populations. All these issues are being tackled through the production of an integrated management strategy and conservation action programme as part of EU-funded LIFE project, which has brought together statutory and voluntary bodies and the private sector in a wide-ranging partnership.

**Conservation objectives**

4.5 The conservation objectives for the European interests are: to maintain, in favourable condition, the habitats for the populations of Golden Plover, Merlin and Short Eared Owl of European importance, with particular reference to:

- blanket mire;
- dwarf shrub heath;
- acid grassland;
- gritstone edges.

Maintenance implies restoration if the feature is not currently in favourable condition.

## 5. Rutland Water SPA

### Brief Description

5.1 The SPA extends to about 1,555ha and the Ramsar site to about 1333ha. Rutland Water is located in the county of Rutland. It is a man-made pump storage reservoir created by the damming of the Gwash Valley in 1975 and is the largest reservoir in the United Kingdom. In general the reservoir is drawn down in the summer and filled during the autumn and winter months when river levels are high. The main habitats are open water and a mosaic of lagoons, reedswamp, marsh, old meadows, scrub and woodland. The lagoons are one of the most important areas for wintering wildfowl.

### Condition and current issues

5.2 The whole SPA and Ramsar site meets the Government's PSA target.

| % Area meeting PSA target | % Area favourable | % Area unfavourable recovering | % Area unfavourable no change | % Area unfavourable declining | % Area destroyed / part destroyed |
|---|---|---|---|---|---|
| 100.00% | 7.58% | 92.42% | 0.00% | 0.00% | 0.00% |


5.3 The SPA is vulnerable to pressures from recreation, nutrient inputs, and changes in water level. The site is one of the most popular tourist attractions in the East Midlands. Fishing, walking water sports and cycling currently take place and the reservoir has been zoned to allow this to take place. Management of the site for its SPA interests is currently compatible with these recreation uses except in periods of drawdown. A revised strategy with Anglian Water Supplies (AWS) is intended to address this problem.

5.4 The reservoir is filled from the River Nene and the River Welland. In the past phosphate levels have led to algal blooms. Although these have currently had little visible effects on the wildfowl, continued eutrophication could lead to an algal dominated system that may reduce the value of the area for both plant feeding and invertebrate feeding wildfowl. Phosphate inputs are being tackled through implementation of the Urban Waste Water Treatment Directive in the Nene catchment which contributes the major phosphate load to the reservoir. If necessary, monitoring will be introduced to show if the reduction in phosphate level is adequate and to investigate the contribution of agricultural sources to this problem.

5.5 Rutland water is a major source of urban water supply. Increased abstraction in the summer up to the current licensed limit may cause further and more extensive periods of drawdown which can effect populations of invertebrates on which some species depend, whilst rapid filling can render other food sources unavailable for dabbling ducks. Drawdown may also increase disturbance through recreation uses.

These issues will be tackled through discussions with AWS and the Environment Agency.

**Conservation Objectives**

5.6 The conservation objective for the European site interest features are to maintain, in favourable condition, the habitats for the internationally important populations of the regularly occurring migratory bird species (see bullet points below), with particular reference to open water and surrounding marginal habitats:

- Wintering population of gadwall;
- Wintering population of shoveler; and
- Over 20,000 over-wintering waterfowl: In addition to shoveler and gadwall, the over-wintering waterfowl population is made up of nationally important populations of wigeon, coot, great crested grebe, cormorant, mute swan, wigeon, teal, pochard, tufted duck and goldeneye.

Maintenance implies restoration if the feature is not currently in favourable condition.

## 6. Prospective Sherwood Forest SPA

**Brief description**

6.1 The area comprises mainly dry acid heathlands, oak and birch woodland and coniferous plantations in Sherwood Forest. The 'indicative core area' identified by Natural England and shown on Map 2.2 is likely to comprise the core areas of the prospective SPA for nightjar and woodlark. The RSPB have considered a larger area of Sherwood Forest as an 'important bird area' taking account of other breeding species, this is also shown on Map 2.2. The 5km 'buffer zone' shown on the plan has been proposed by the Nottinghamshire Wildlife Trust.

6.2 The potential boundaries of the prospective SPA are yet to be determined. Two datasets exist which give a good indication of the areas which are likely to be included; the RSPB Important Bird Area (IBA) boundaries and the Natural England indicative core area boundaries. The Natural England core area boundaries are based on 2004 and 2006 datasets, whilst those of the IBA are based on all records, and can be argued therefore to present a broader picture. In light of the uncertainties in where the final boundaries will lie, and with regard to the review provisions of Regulation 63 (if a block of land was included which had not previously been assessed), for the purposes of this HRA the boundary is assumed to incorporate all areas within both the IBA and NE core area boundaries. This is considered to be a precautionary approach that should future proof the HRA and reduce the likelihood of any review being required should a pSPA be listed for Sherwood Forest.

**Condition and current issues**

6.3 No condition assessment has been carried out for this prospective site, so comparable data to the above sites are not available.

6.4 Little is known about the effects of recreation or other urban related pressures on the bird populations of the prospective SPA. No recreation survey information is available for most of the area. No systematic habitat or land use survey is available.

6.5 The distribution of breeding territories of Nightjar and Woodlark for the core areas has been obtained from Natural England. An initial analysis, based on desk study and a brief field visit, indicates that both Nightjar and Woodlark territories appear to be determined primarily by the location and availability of suitable habitat and there is no prima facie evidence that recreation 'hot-spots' in the forest areas closest to

Greater Nottingham displace breeding Nightjar or Woodlark. Indeed there are records of the species breeding in relatively intensively used areas of the Sherwood Forest, Sherwood Pines and Clumber Country Parks; though they are notably absent from Rufford Country Park which may sustain a higher density of visitors.

6.6 Habitats occupied by the two Annex 1 species at the time of the survey appear to be robust and comprise mainly clear-felled, or recently clear-felled, coniferous plantations, or relatively open dry acid grassland and heathland, some invaded or being invaded by birch and locally by *Rhododendron*. Bracken too is locally invasive. There is public access to most of the areas close to Nottingham almost all of which (outside Ashfield) is in Forestry Commission or Nottinghamshire Wildlife Trust management. However, in the majority of the area outside the main country parks, public access is predominantly dog walking, with visitors having arrived at the site by car. Occasional walkers and cyclists are encountered and there is evidence of widespread, but not intensive horse riding. Visitors and dogs appear to keep to the paths and the deep layers of litter and brash of clear-felled areas can be relatively impenetrable for people and dogs.

6.7 All evidence of public access observed on site relates to a car parking opportunity, many of which are single, or perhaps two or three, informal and opportunistic roadside spaces. There is some, localised, evidence of fly tipping, mainly at the parts of the site closest to Nottingham and occasionally elsewhere. Evidence of fire is rare. No evidence of encroachment from residential properties was evident on the site visit but the areas around Ravenshead were not all accessible. Otherwise no significant habitat damage or disturbance is evident from ad hoc observation.

**Conservation objectives**

6.8 The following draft conservation objectives were presented by Natural England to a recent public inquiry. They have been used in this appraisal but may not be the final objectives if the site is taken forward for classification.

**Cover Note**

**These conservation objectives have been issued by Natural England expressly for the purpose of informing a shadow Habitat Regulations assessment should it be decided that an area of Sherwood Forest is to be treated as a potential Special Protection Area (pSPA), with breeding nightjar and woodlark as Qualifying Interest Features, or that the Secretary of State decides that the application under consideration should be determined in accordance with the Habitats Regulations and Directive.**

**Conservation Objectives**

Conservation Objectives are used to define the desired state for designated Sites of Special Scientific Interest (SSSIs) in terms of the features for which they have been designated. When these features are being managed in a way which maintains their nature conservation value, then they are said to be in 'favourable condition'. It is a Government target that 95% of the total area of SSSIs should be in favourable condition by 2010.

**Definitions of Favourable Condition**

The Conservation Objectives for a site are generally accompanied by one or more habitat extent and quality definitions for the special interest features of the site. These are subject to periodic reassessment and may be updated to reflect new information or knowledge; they are used by Natural England and other relevant authorities to determine if a site is in favourable condition. The standards for favourable condition have been developed by the statutory conservation agencies and are applied throughout the UK.

**Use under the Habitats Regulations**

The Conservation Objectives and definitions of favourable condition for features on a SSSI may also inform the scope and nature of any 'appropriate assessment' under the Habitats Regulations. An appropriate assessment will also require consideration of issues specific to the individual plan or project. The habitat quality definitions do not by themselves provide a comprehensive basis on which to assess plans and projects as required under Regulations 20-21, 24, 48-50 and 54 - 85. The scope and content of an appropriate assessment will depend upon the location, size and significance of the proposed project. Natural England will advise on a case by case basis.

Following an appropriate assessment, competent authorities are required to ascertain the effect on the integrity of the site. The integrity of the site is defined in paragraph 20 of ODPM Circular 06/2005 (DEFRA Circular 01/2005) as 'the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified'. The determination of favourable condition is separate from the judgement of effect upon integrity. For example, there may be a time-lag between a plan or project being initiated and a consequent adverse effect upon integrity becoming manifest in the condition assessment. In such cases, a plan or project may have an adverse effect upon integrity even though the site remains in favourable condition.

The following table sets out the measures of condition to use to provide evidence to support the assessment of whether features are in favourable condition. They are derived from a set of generic guidance on favourable condition prepared by Natural England specialists, and have been tailored by local staff to reflect the particular characteristics and site-specific circumstances of individual sites.

**Draft Conservation Objectives for breeding nightjar and woodlark populations of the Sherwood Forest Area***

| | |
|---|---|
| **Conservation Objective for species features** | **To maintain the species features in favourable condition, which is defined in part in relation to their population attributes.** On this site favourable condition requires the maintenance of the population of each species feature. Maintenance implies restoration if evidence from condition assessment suggests a reduction in size of population. Favourable condition is defined at this site in terms of the following site-specific standards: |

| Species feature | Attributes and methods of assessment | Site Specific Targets | Comments |
|---|---|---|---|
| **Aggregation of breeding birds:**<br><br>**Nightjar** | **Population Size**<br><br>Counts or estimates (ideally on annual basis) between May-July of either numbers of breeding individuals, pairs or calling males, occupied breeding sites or occupied territories.<br><br>Monitoring and species-specific survey methodologies are listed in Part 2 of CSM for Birds Guidance (available on JNCC website). | Subject to natural change, maintain the breeding population of nightjars at or above that population present at the time of designation (i.e. the baseline population).<br><br>**Baseline population = 64 calling males** | A formal site designation process is not yet underway.<br><br>It is expected that species populations be maintained/ enhanced to ensure the qualifying numbers are maintained.<br><br>Baseline Population is based on Natural England's Indicative Core Area (PI document NE11) and derived from Natural England (2010). *A review of numbers of breeding nightjar and woodlark in the Sherwood Forest National Character Area (NCA), Nottinghamshire 2004 – 2006. (*PI document NE7). |
| | **Habitat extent**<br>Record extent of habitat types used, primarily;<br><br>Lowland heath<br>Lowland acid grassland<br>Clear-fell and young restock within coniferous plantation woodland<br><br>Recognised recording methods can include Phase I habitat mapping, vegetation classification mapping, use of aerial photographs, etc | Maintain the area of habitat used by breeding nightjars within the site. | The extent of the Indicative Core Area is 4344.85 hectares.<br><br>There is currently no accurate baseline data available to determine the current extent of habitat types . |

| Species feature | Attributes and methods of assessment | Site Specific Targets | Comments |
|---|---|---|---|
| **Aggregation of breeding birds:**<br><br>**Woodlark** | **Population Size**<br><br>Counts or estimates (ideally on annual basis) between March-July of either numbers of breeding individuals, pairs or calling males, occupied breeding sites or occupied territories<br><br>Recommended monitoring and species-specific survey methodologies are listed in Part 2 of CSM for Birds Guidance (available on JNCC website). | Subject to natural change, maintain the breeding population of woodlarks at or above that population present at the time of designation (i.e. the baseline population).<br><br>**Baseline population = 39 occupied territories** | A formal site designation process is not yet underway.<br>It is expected that species populations be maintained/ enhanced to ensure the qualifying numbers are maintained.<br><br>Baseline Population is based on Natural England's Indicative Core Area (PI document NE11) and derived from Natural England (2010). *A review of numbers of breeding nightjar and woodlark in the Sherwood Forest National Character Area (NCA), Nottinghamshire 2004 – 2006. (*PI document NE7). |
| | **Habitat extent**<br>Record the extent of habitat types used, primarily;<br><br>Lowland heath<br>Lowland acid grassland<br>Clear-fell and young restock within coniferous plantation woodland<br><br>Recognised recording methods include Phase I habitat mapping, vegetation classification mapping, use of aerial photographs, etc | Maintain the area of habitat used by breeding woodlark within the site. | The extent of the Indicative Core Area is 4344.85 hectares.<br><br>There is currently no accurate baseline data available to determine the current extent of habitat types. |

*(2)*

# *GREATER NOTTINGHAM ALIGNED CORE STRATEGIES*

# *HABITATS REGULATIONS APPRAISAL SCOPING FOR FURTHER ASSESSMENT*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**SCOPING FOR AN 'APPROPRIATE ASSESSMENT' UNDER REGULATION 102 OF THE CONSERVATION OF HABITATS AND SPECIES REGULATIONS 2010**

1. The screening record of the Greater Nottingham Aligned Core Strategies (ACS) concluded that, on the basis of objective information, it is not possible to rule out the likelihood of a significant effect on the Park Forest part of the prospective Sherwood Forest SPA, as a result of increased Nitrogen deposition affecting the habitats of the birds for which the site may be classified, arising from the Top Wighay Farm allocation in the ACS, in combination with other plans or projects. Therefore, if the prospective SPA is advanced with the intention of it being classified as a SPA, the ACS will need to be subject to further assessment. Depending on the stage the prospective SPA has progressed to, this may involve an 'appropriate assessment' before the ACS is adopted.

2. This note summarises the timing, status, application of the law and policy, and thus the implications for the next stages of the ACS, on the assumption that the prospective SPA is progressed. It then considers the possible scope of an 'appropriate assessment', if one should be undertaken. It is necessary to make a number of assumptions as follows.

    a. The prospective Sherwood Forest SPA is progressed through the normal classification process, via pSPA and classified SPA status;

    b. The prospective Sherwood Forest SPA is progressed to classification for breeding nightjar and woodlark, as currently advised by Natural England;

    c. The prospective Sherwood Forest SPA has not been fully classified by the time any of the relevant Core Strategy DPDs is examined and even when considered for adoption;

    d. The proposed allocation for development at Top Wighay Farm remains in the ACS;

    e. The predicted traffic flows on the northbound arm of the A611 past Park Forest are not significantly reduced as a result of further modelling;

    f. Park Forest remains closed to general public access except for rights of way.

**Alternative scenarios depending on timing of an assessment and status of the prospective SPA**

| Time | Status of SPA | Application of the Directive / Regs | Implications for the ACS |
|---|---|---|---|
| Present, and until Secretary of State announces a pSPA and Natural England launches formal consultations | 'Prospective' SPA, no legal or policy status | 2010 Regulations do not apply because the site is not a European site, either as a matter of law or Government policy. | 1. There are no immediate implications, but in order to 'future-proof' the ACS the LPAs may choose to apply the Regulations, voluntarily, so that if the site does become a pSPA, or SPA, during the life of the plan, none of the plan's key provisions, e.g. Top Wighay Farm, will become incapable of implementation, as a result of the assessment of their potential effects on the new pSPA or SPA when assessed at project level.<br><br>2. Also, should the Top Wighay Farm planning permission remain incomplete when the site becomes a SPA, the permission would be subject to review under regulation 63, see implication 15 at the end of this table for more detail.<br><br>3. The LPAs can decide which test to apply: either [a] that under the Habitats Directive and Regulations, which is whether the LPAs can ascertain that the Top Wighay Farm allocation would not adversely affect the integrity of the pSPA/SPA when it reaches that stage; OR [b] that under the Birds Directive, whether the allocation would cause significant pollution, deterioration or disturbance in the 'should be' SPA in advance of it being a pSPA (see further detail in implication 5 and 6 below); in either case, firmly proposed mitigation measures should be taken into account in applying the tests.<br><br>4. The case for carrying out some kind of further assessment of the potential effects of Top Wighay Farm on the Park Forest area, in combination with other plans or projects, is further strengthened by the duty, in Article 4(3) of the Birds Directive, for all Member States to "strive to avoid pollution or deterioration of habitats" affecting the birds for which there is a duty to classify SPAs, even outside the protected areas. |
| | | Alternatively, it may be argued that UK should already classify the site, because it 'should be' an SPA, if so, the Basses Corbieres ruling applies. Given the area has been identified by RSPB as an IBA this argument may be considered to have some merit, albeit the evidence base for the IBA may be considered to be incomplete, and the UK Government would not agree that it is yet a 'should be' SPA. | 5. Owing to judgments in the European Court of Justice, a plan may only be adopted if it is certain that the plan will not cause significant pollution or significant deterioration of the habitats of a 'should be' SPA, or significant disturbance of the bird species for which a 'should be' SPA has been proposed. The derogation provisions of Article 6.4 (regulation 103) do not apply.<br><br>6. This is a stricter protection than that in regulations 102 and 103 of the Habitats Regulations applying to classified SPAs. The effect of the court applying the stricter requirements of the initial provisions of the Birds Directive, as opposed to the less strict provisions of the Habitats Directive, was to ensure that no Member State gained advantage from not classifying a SPA and to incentivise Member States to proceed expediently with SPA classification, even where they were reluctant to do so. |

| Time | Status of SPA | Application of the Directive / Regs | Implications for the ACS |
|---|---|---|---|
| When Secretary of State announces a pSPA and Natural England launches formal consultations | Potential SPA (pSPA) no legal, but important policy, status | Site is still not a European site as a matter of law, but as a matter of Government policy, PPS9 says a pSPA must be treated as if it is a fully designated SPA. | 7. The Habitats Regulations should be applied for the pSPA, as if it was fully classified; regulations 102, 103 etc would be relevant and applicable to the ACS if it is not adopted by the time the site becomes a pSPA.<br><br>8. The test to be applied is whether the LPAs can ascertain that the Top Wighay Farm allocation would not adversely affect the integrity of the pSPA, alone or in combination with other plans or projects; firmly proposed mitigation measures should be taken into account.<br><br>9. Even if adopted by the time the site becomes a pSPA, the risks of allocations failing to pass the Habitats Regulations at project application stage; and the risk of incomplete permissions being modified on review would apply in this scenario too, see implication 1 above. |
| | | Alternatively, the Basses Corbieres ruling could apply, if it is argued that UK should classify the site as a 'should be' SPA. DEFRA is thought to believe that Basses Corbieres does not apply once a Member State has initiated the formal classification procedures, because it is not avoiding classification, and is in the process of classifying the site. This view has not been tested in the Courts and the recently published TAN 5 in Wales (Sept 2009) clearly implies that the Basses Corbieres ruling applies to a pSPA. | 10. If the ACS is not adopted at the time the site becomes a pSPA, and if it is assumed that the Basses Corbieres ruling applies to a pSPA, the LPAs cannot adopt the ACS unless they are certain that the plan will not cause significant pollution or significant deterioration of a pSPA or significant disturbance of the bird species for which a pSPA has been proposed. The derogation provisions of Article 6.4 (regulation 103) do not apply.<br><br>11. Even if adopted by the time the site becomes a pSPA, the risks of allocations failing to pass the Habitats Regulations at project application stage; and the risk of incomplete permissions being modified on review would apply in this scenario too, see implication 1 above. |

| Time | Status of SPA | Application of the Directive / Regs | Implications for the ACS |
|---|---|---|---|
| When site becomes a fully classified SPA | SPA has full legal status | Site is a European site as a matter of law. | 12. If the ACS is not adopted at the time the site becomes a fully classified SPA, the Habitats Regulations must be applied, regulations 102, 103 etc would be relevant and applicable to the ACS before it is adopted.<br><br>13. The test to be applied is whether the LPAs can ascertain that the Top Wighay Farm allocation would not adversely affect the integrity of the SPA, alone or in combination with other plans or projects; firmly proposed mitigation measures should be taken into account.<br><br>14. The Basses Corbieres ruling is irrelevant and the test of no significant pollution, deterioration or disturbance is not applicable.<br><br>15. **If adopted, there are no statutory requirements to review the unimplemented provisions of the ACS upon classification of the SPA**. However, under regulation 63, if the Top Wighay Farm planning permission remained outstanding (incomplete) it would be subject to review to see if its completion would have a significant effect on the SPA. If it cannot be ascertained that the implementation of the permission would not adversely affect the integrity of the SPA, it must be revoked or modified in such a way that the completion of the permission would not have an adverse effect on the integrity of the SPA, subject to the provisions of regulations 62 and 66 (no alternative solutions and imperative reasons of overriding public interest and compensatory measures). |

3. Consequently, the LPAs must decide whether, and if so, when, to undertake a further assessment of the effects of the Top Wighay Farm proposal. This may be a more detailed assessment generally to assess the likelihood of significant pollution or deterioration in the context of the requirements of the Birds Directive, or it may be an 'appropriate assessment' or shadow 'appropriate assessment' under the Habitats Directive.

4. If before the Secretary of State announces the pSPA, in this context, it will be necessary to demonstrate that the allocation would not lead to significant pollution or significant deterioration of the habitats on which the nightjar and woodlark rely. If after the site becomes a pSPA it is likely that the test will be whether the LPAs can ascertain that the Top Wighay Farm allocation would not adversely affect the integrity of the SPA, alone or in combination with other plans or projects. However, two points become clear.

a) Firstly, owing to the uncertainty of legal interpretations between Circular 6/2005 and TAN 5, it would be wise to ensure that the Birds Directive test of no significant pollution or deterioration is met as well as the Habitats Directive test of ascertaining no adverse effect on site integrity; and

b) Whatever test is applied to the ACS, the planning application at Top Wighay Farm will need to demonstrate clearly that it can be ascertained it will not have an adverse effect on the integrity of the prospective, or pSPA, or classified SPA, because this test will be applied either before it is granted permission or, on review, after it is granted, when the site is classified..

5. In all scenarios firmly proposed mitigation measures should be taken into account. It is therefore recommended that mitigation measures be considered at the earliest possible stage so that they can be taken into account at both ACS HRA stage and planning application stage.

6. Considering the above analysis it is clear that the only reason a further assessment of the ACS is required is because of the potential effect of the Top Wighay Farm allocation in combination with other plans or projects. If the ACS dropped the allocation, the ACS would not need further assessment. The work required to demonstrate that the ACS is capable of adoption, with Top Wighay Farm in it, is of direct benefit to the Top Wighay Farm development.

7. No matter when Top Wighay Farm planning application is made it will need to satisfy the relevant planning authority (LPA or Secretary of State) that it would not be likely to have a significant effect on the prospective SPA (alone or in combination), and that it can be ascertained it would not adversely affect the integrity of the SPA, and / or it would not lead to significant pollution or deterioration of bird habitats. This is necessary even at this prospective SPA stage, because otherwise, when the SPA is formally classified, if the permission is not fully implemented Gedling BC will need to review it; and if it cannot at that stage ascertain it would not have an adverse effect on the integrity of the SPA it would need to revoke or modify the unimplemented part of the permission under the Planning Acts, in accordance with the 2010 Habitats Regulations, at Gedling BC's expense. If the application is made after the site becomes a pSPA it has to be assessed as if it is a fully classified SPA. There is no doubt that the proposed development must be assessed before it can be given permission. The assessment must be that of the planning authority as competent authority under the Regulations, but the authority can require the applicant to provide any information reasonably necessary to undertake the assessment. The cost of the further analysis work will fall to the developer of the site.

8. If the ACS were to reduce its housing provision by 500 dwellings and reduce the employment provision by the amount currently allocated at Top Wighay Farm, (or otherwise adjust its allocations away from the prospective SPA) it could proceed to adoption without Top Wighay Farm as an allocation, with no likelihood of a significant effect on a European site.

9. We would therefore suggest that it would be fair for the assessment work for Top Wighay Farm to be done by the parties who may benefit from the planning permission, rather than at the expense of the ACS. The work needs to be done very soon, in order to give everyone the necessary confidence that the development can meet the tests of the Regulations at project application stage. If the work is done now it will enable the ACS HRA to take it into account at the next stage.

10. The scope of the further assessment should consider the following.

**Scope of further assessment on air pollution: Top Wighay Farm**

11. The further assessment will need to provide sufficient information that is 'appropriate' to enable the competent authority to determine whether it is possible to ascertain no adverse effect on integrity of the prospective SPA as a result of the ACS.

12. In considering the potential impacts on Park Forest part of the prospective SPA associated with air pollution, the relevant information would need to include:

    a. Relevant modelling to assess the contribution from both existing and predicted traffic flows along both the M1 and A611 to atmospheric concentrations of $NO_x$ and $NH_3$ and both wet and dry deposition of nitrogen at various locations within the boundary of the site.

    b. The locations should include the nearest boundary of the site to the road, and at regular intervals along a transect towards the middle of the site for a distance of 500m. A further location could be selected at a central location of the site to show the 'minimum' contribution.

    c. Existing atmospheric concentration of $NO_x$ and $NH_3$ at selected locations close to both the M1 and A611 should be sampled, on which to assess the reliability of the modelled APIS background levels.

Whilst sampling of N deposition would be useful, it is inherently difficult to do this accurately. We would advise that this is discussed with the people undertaking the modelling/sampling and regard is given to their opinion of the reliability of such data. It is our current opinion that N deposition sampling would not necessarily be required as part of the further assessment due to these inherent difficulties.

David Tyldesley and Associates
30th September 2010

Date: 24 November 2010
Our ref:
Your ref:

Matt Gregory
Nottingham City Council

Block 7
Government Buildings
Chalfont Drive
Nottingham
NG8 3SN

T 0300 060 0789

Dear Matt,

**Greater Nottingham Aligned Core Strategy (GNACS) – Habitats Regulation Assessment**

Thank you for your consultation Natural England on the above, your correspondence was received by Natural England via email on 28 October 2010.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development. We are working towards the delivery of four strategic outcomes:

- A healthy natural environment;
- People are inspired to value and conserve the natural environment;
- Sustainable use of the natural environment;
- A secure environmental future

As a member of the Steering Group, Natural England has been involved in the preparation of the Habitats Regulation Assessment (HRA) of the GNACS 'Option for Consultation' Document, however we welcome the opportunity to formally comment on the work undertaken to date and offer advice in respect of the next stages.

**Screening**

We consider the screening assessment, *Habitats Regulations Appraisal Screening Record* (Sept 2010), has rigorously tested the proposed plan for its potential effects on European sites in accordance with the legislation, Conservation of Habitats and Species Regulations 2010, and is consistent with government guidance on HRA of development plans.

We agree with the list of identified European sites that have potential to be affected by this plan, Section 2.5. In addition we are pleased that the appraisal has had regard to a prospective SPA in the Sherwood Forest area.

Natural England recommends that those Local Planning Authorities within and in close proximity to the Sherwood Forest region of Nottinghamshire, in the course of exercising

their statutory functions, are mindful of the ongoing Public Inquiry into the Rufford Energy Recovery Facility (ERF) development and the matter arising as to whether the substantial breeding population of nightjar and woodlark in the Sherwood Forest region warrants its classification as a Special Protection Area ("SPA") under the EU Birds Directive, or at least its identification as a potential SPA ("pSPA").

It is our view that there is currently no pSPA in Sherwood and therefore the Conservation of Habitats and Species Regulations 2010 and statutory policy governing pSPAs does not apply. However there is the possibility that it might occur in the future and this is presently been considered as part of a UK wide Review of the SPA Series being led by Government. We recognise that the consequences of a possible future classification of an SPA in the Sherwood area places a difficulty on Local Planning Authorities with regard to how they should consider land allocations and policies in forward plans and individual applications for planning consent.

How local authorities choose to confront this issue is a matter for them, however Natural England would advocate a 'risk based approach' or similar be adopted to provide a degree of future-proofing for decision-taking until such a time that it is clear whether or not the statutory policies concerning potential SPAs apply to an area of Sherwood Forest.

Therefore in view of our advice we are pleased the Authority has chosen to adopt a risk-based approach and, on a precautionary basis, the appraisal has treated the prospective Sherwood Forest SPA as if it was a pSPA. We believe this represents good planning practice and will assist your Authority should the site be classified as SPA in limiting the requirement for the plan to be re-considered as part of the review of consents process required by the 2010 Regulations.

In order to undertake a rigorous assessment of the implications of an emerging plan for European wildlife sites, it is necessary to consider the European sites; their current sensitivities, the interest features (habitats or species) for which it was designated or conservation objectives, the possible effects of each individual policy, and the key impacts that will stem from the plan, that are considered against the European site's sensitivities. The screening assessment presented encompasses all aspects of assessment, and therefore represents a very thorough approach, and provides a robust record of how the screening assessment was undertaken.

The discussions regarding the key issues relevant to the ACS are particularly important. The assessment systematically tests each element of the ACS; vision, objectives, spatial strategy, policies and proposals and the effects of the plan as a whole for the likelihood of significant effects, either alone or in combination with other plans or projects and provides good justification of the conclusions drawn.

We concur with the findings and recommendations of the appraisal described in the conclusion, section 6, including the suggested modification of policies to avoid potentially significant effects of the ACS.

However we note at 6.9, on the basis of objective information, it has not been possible to rule out the likelihood of a significant effect on the Park Forest part of the prospective Sherwood Forest SPA, as a result of increased Nitrogen deposition affecting the habitats of the birds for which the site may be classified, arising from the Top Wighay Farm allocation in the ACS, in combination with other plans or projects.

Therefore, if the prospective SPA is advanced with the intention of it being classified as a SPA, the ACS will need to be subject to further assessment. Depending on the stage the

prospective SPA has progressed to, this may involve an “appropriate assessment” before the ACS is adopted.

**Next stage**

The scoping report, *Habitats Regulations Appraisal Scoping for Further Assessment* (September 2010), explains that due to the potential effect of Top Wighay allocation on Park Forest further assessment is required in order to ascertain no likely significant effect and to future proof the plan and to ensure its soundness. However as the prospective SPA is not formally classified Natural England wishes to inform the Authority that any such assessment will be undertaken voluntarily and is not a formal requirement at this stage.

The report also makes clear that if the Top Wighay allocation were removed or the inclusion deferred then this would avoid the risk of effect and enable the ACS to proceed without the need for further assessment.

The scoping report helpfully outlines the different scenarios based on the timings of the assessment and status of the prospective SPA and the options for further assessment. The more detailed assessment is essentially a bespoke assessment required to consider the likely effects and demonstrate no adverse effect on the integrity of the site.

In the case of Top Wighay allocation the potential effects are associated with air pollution. Increased nitrogen deposition near to a sensitive site can cause severe localised impacts on semi-natural habitats as well as contributing to regional nitrogen deposition. This can lead to nitrogen enrichment, eutrophication, acidification of soils and freshwaters and affect species composition.

Park Forest, and the bird species it supports, nightjar and woodlark, are potentially sensitive to changes in air pollution. This is because the birds require vegetation mosaics including bare ground and short, sparse vegetation. Woodlarks need bare ground and/or very short, sparse ground vegetation to allow them to forage effectively for invertebrates, whereas nightjars need patches of bare ground for nesting, particularly among bracken, tall heather or young trees.

Clearly, any acceleration in vegetation growth leading to the replacement of bare ground and low-growing, sparse vegetation by taller, faster growing vegetation could be detrimental to these species. In the context of forestry, these changes could reduce the time that such features are present following replanting, a problem which would be exacerbated by changes in forest management. In the case of heathland, there might be changes in species composition (i.e. from heath to grass) which could eliminate the essential mosaics of bare ground and vegetation.

Such impacts could affect the conservation objectives through the attributes of favourable condition that relate to the “proportion of open ground and mix of shrub/ tree cover within the heathland and woodland habitats”.

Therefore the scope of the more detailed assessment will require expert understanding to consider the current levels of pollution and the likely effects of further potential increases, either alone, cumulatively or in combination with other activities, on the composition of those habitats likely to support breeding nightjar and woodlark. The principal possible effect is the acceleration of the ‘natural’ growth of vegetation within the large area of bare ground created by clear-felling, resulting in this habitat being suitable for the birds for a shorter period of time. The nature and resilience of the habitat at Park Forest, and its future management, would need to be taken into account as part of any assessment.

The advice given by Natural England in this letter is made for the purpose of the present consultation only. In accordance with Section 4 of the Natural Environment and Rural Communities Act 2006, Natural England expects to be included as a consultee in relation to any additional matters that may arise as a result of, or are related to, the present proposal. Natural England retains its statutory discretion to modify its present advice or opinion in view of any and all such additional matters or any additional information related to this consultation that may come to our attention.

I hope this information is useful however if you require any additional assistance please do not hesitate to contact me.

Yours sincerely,

Elizabeth Newman
Planning Adviser
Nottinghamshire Team – East Midlands
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URS

# A Screening Assessment of Additional Nitrogen Deposition from the Development at Top Wighay Farm, Hucknall on the Proposed Sherwood Forest Special Protection Area (SPA) for Birds and the Integrity of the Habitat for Woodlark and Nightjar

**By Prof Neil Humphries, Dr David Deakin & Jonathan Gorstige**

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# A Screening Assessment of Additional Nitrogen Deposition from the Development at Top Wighay Farm, Hucknall on the Proposed Sherwood Forest Special Protection Area (SPA) for Birds and the Integrity of the Habitat for Woodlark and Nightjar

**By Prof Neil Humphries, Dr David Deakin & Jonathan Gorstige**

## 1 Background

The proposed development site at Top Wighay Farm is located to the north of the urban conurbation of Hucknall and sits between the A611 to the west, the Mansfield-Nottingham railway line to the east and the B6011 to the south.

The 27ha site is owned by Nottinghamshire County Council and is strategically important for Gedling Borough Council to meet the Borough's housing needs (Top Wighay Farm, Hucknall, Nottinghamshire Development Brief December 2008). The development would comprise of about 500 homes (18ha), a business area (6ha), both with road access from the A611 to the west, and green infrastructure and land seta side for nature conservation.

Natural England has advised the Local Authorities that whilst the Sherwood Forest area supports substantial populations of woodlark and nightjar, it had not yet advised the Secretary of State on any selection of any part as a Special Protection Area (SPA). As such the Habitats Regulations 2010 do not apply (see Natural England advice Note 28th June 2010, East Midlands Region), however, Natural England recommends that the Local Authorities proactively adopt a risk-based approach in any planning consent decisions taken in order to satisfy subsequent statutory reviews of consents should a SPA be proposed.

Both Natural England and the RSPB have during the course of the recent Rufford Energy Recovery Facility Inquiry indicated specific 'core' nightjar and woodlark areas that might be designated as a SPA and a 5km buffer boundary within which developments should be screened for their potential direct and indirect effects.

The Top Wighay Farm site is well within the RSPB 5km buffer boundary and lies within 0.5km of a Natural England 'indicative core area' at Park Forest for nightjar and/or woodlark. This lies to the west of the A611 with a RSPB 'important bird area' (Freckland Wood) to the north (Figure 1).

Natural England has identified a number of potential adverse impacts on the SPA by developments such as proposed at Top Wighay Farm. Specifically in respect of the last bullet point, DTA in their Habitats Regulations Appraisal Scoping for Further Assessment (September 2010) concluded that there could be a significant potential impact of nitrogen deposition (acting as a fertiliser and increasing plant growth, thus degrading woodlark and nightjar breeding habitat) at Park Forest from the development of Top Wighay Farm. They recommended that modelling and sampling should be undertaken to assess the implications of the development.

Nottingham County Council appointed URS Scott Wilson Ltd in February 2011 to assess the potential impact of deposition from the additional traffic created by the development at Top Wighay Farm. In the absence of information at the present time relating to other developments, the assessment is as a stand alone development and not in combination with any others.

This report sets out the methods used, the results and outcomes, and incorporates the outcomes of a meeting (dated 22nd June 2011) with Natural England (NE) and Nottinghamshire Wildlife Trust, and the written response of Natural England dated 27th July 2011.

## 2 Methodology and Results

The methodology utilised for the Top Wighay Farm Development is based on the Annex F – Assessment of Designated Sites in the Highways Agency Design Manual for Roads and Bridges (DMRB), Volume 11 Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 1, HA207/07 Air Quality, May 2007. The HA207/07 Annex F approach was agreed with statutory bodies, such as the Joint Nature Conservation Committee (JNCC) and Natural England to assess road emissions at sensitive ecosystem sites. There is no other appropriate Environment Agency (EA) approach. This includes the EA H1 air quality guidance document (Environment Agency, 2010, Annex f) which focuses on large industrial and power sector point source emissions only and not road traffic emissions.

The methodology includes 8 steps as listed below (although not all steps are required if initial steps identify no likely significant effects):

- Step 1: Identify Sensitive Sites (Sections 2.1, 2.2 and 2.3)

- Step 2: Obtain total average N deposition for 5km grid square (Section 3.2)
- Step 3: Obtain background $NO_2$ and $NO_x$ concentrations
- Step 4: Calculate $NO_2$ Concentrations in a transect near the road
- Step 5: Estimate Dry Deposition of $NO_2$ and road increment $NO_2$ dry deposition
- Step 6: Determine road increment $NO_2$ dry deposition
- Steps 7 and 8: Compare with critical loads and reporting

## 2.1 Development Traffic Screening

The Development Brief for Top Wighay Farm sets out the potential to generate traffic and increase nitrogen deposition by the traffic from:

- 500 Dwellings – population 1250 people.
- 34,000 $m^2$ business space – business (B1) and small warehousing uses (B8).
- A 1.7 ha primary school site including playing fields.

Other land-use types were also identified including retail, healthcare and leisure. However, there was insufficient data to quantify the potential traffic associated with these and other land-uses (eg an energy centre).

In the absence of specific traffic data for the development, the TRICS data base (http://www.trics.org/default.cfm) was used to assess that likely to be generated: this was estimated to be 6,200 Annual Average Weekday Traffic (AAWT), including 140 heavy goods vehicles (HGVs). The increase in traffic volume due to the development is over the 1,000 Annual Average Daily Traffic (AADT) change above which significant changes in air quality could be expected along a route (Highways Agency, 2007). However, not all the additional traffic would be expected to use the same route and would be expected to be distributed spatially.

The changes in spatial distribution in traffic over 1,000 AADT was undertaken using the Highways Agency approved ODYSSEUS model (Anderton, 2008) and as deployed by the Agency in the form of their PENELOPE Model. The ODYSSEUS / PENELOPE model is based on the National Census Ward-level journey-to-work data in conjunction with a link-based 'gravity model' driven by travel cost. In this model trips are distributed through one entry/exit point at a development. In this case there are two potential entry exit points: A611/B6011 entrance and A611/Hucknall Road T Junction. Two sets of predictions have therefore been prepared for this development.

Gravity models use a function of travel time and distance to provide a relative weighting reflecting the cost of travelling between each competing origin-destination pair. These weightings are used to provide factors to enable the predicted total travel demand to be distributed proportionately. The results give calculated Ward-

level travel demands and estimates of link flows on the most attractive routes between the development site and surrounding Wards. The results of the gravity model are expressed as a percentage of outgoing traffic and incoming traffic along the routes around the proposed development are presented in the Figure 4. (Specific results are also discussed as appropriate in relation to specific pSPA receptors in Section 2.3.)

## 2.2 Identification of SPA Receptors

Nitrogen dioxide from road sources is indistinguishable from background pollutant concentrations beyond 200m (Highways Agency, 2007) and hence significant changes in nitrogen deposition from road contributions of nitrogen dioxide would also not be expected beyond 200m. In this respect only the pSPA (woodlark and nightjar habitat) within 200m of roads receiving the additional traffic will be potentially affected and need be considered. Hence, it is possible to assess the implication of the development of Top Wighay Farm by mapping the overlap of the 200m deposition corridor over the indicative SPA boundaries.

Three potential receptors were identified along the A611 Hucknall to Mansfield (Derby) Road (Figures 2 & 3), these were:

- Wighay Wood (eastern outlier of Park Forest) juxtaposed to the A611
- Robin Hood Hills (western point of part of Kirby Woods/Nottinghamshire Golf Course) set 170m or more back from A611
- Stone Hills Farm juxtaposed to the A611

## 2.3 Screening SPA Receptors

In this section the need to consider any of the SPA receptors further is assessed. The assessment is based on aerial photography and a site visit to Wighay Wood alongside the A611.

The Wighay Wood is part of Park Forest (an indicative core area for nightjar and woodlark) but it is broad leaved woodland and is not habitat of the woodlark or nightjar. Suitable habitat occurs much further afield within the Park Forest and well beyond the 200m road corridor. It is concluded that there is no potential adverse impact on this particular core area from additional traffic generated by the development of the Top Wighay Farm site.

The Robin Hood Hills indicative area appears to be in part conifer habitat. The intersection with the core area lies within 10-30m of the outer fringe of the 200m corridor, just clipping the westernmost promontory. This too is likely to be not significant in habitat terms, but the habitat and use by woodlark and nightjar within the affected zone should be checked by a suitably qualified ecologist.

A conifer block and possibly some open felled areas at the Stone Hills Farm indicative core area lie within the 200m corridor along the A611 near to Mansfield and potentially might be affected by additional deposition if more than a 1,000 AADT increase in traffic was associated with the proposed Top Wighay Farm development along this section of the A611. However, the gravity model results for inbound and outbound trips (See Table 1) indicates that the increase in AADT anticipated with the proposed development is well below the 1,000 AADT threshold (with predicted flows of 280).

The gravity model results indicate that the greatest flows to and from the site are distributed along the A611, with around approximately 50% travelling in each direction, with a large percentage of traffic utilising the A608 and the M1. The draw of the M1 along with the dilution in traffic along the B-road network along the A611 is the reason why flows are reduced to levels well below the DMRB criteria at Stone Hills Farm. Therefore, no likely significant air quality impacts would be anticipated at this location and no further air quality assessment is required for Stone Hills Farm.

**Table 1 Traffic Generation along the A611 north of the B6139 adjacent to Stone Hills Farm**

| **Scenario **** | **Entrance/Exit** | **Direction** | **Percentage flow A611 north of B6139** | **AADT Flow A611 north of B6139** |
|---|---|---|---|---|
| Scenario 1a | A611/B6011 entrance | In | 3.22 | 99 |
| Scenario 1b | A611/B6011 entrance | Out | 2.08 | 65 |
| Scenario 1c | A611/Hucknall Road T Junction | In | 4.97 | 153 |
| Scenario 1d | A611/Hucknall Road T Junction | Out | 4.06 | 127 |
| | | | **Total Worst Case (Scenario 1c & 1d)** | **280** |

*** Note: Scenarios 1a and 1b are one set of flows calculated assuming all trips from the site are made through the A611/B6011 entrance/exit. Scenarios 1c and 1d are one set of flows calculated assuming all trips from the site are made through the A611/Hucknall Road T junction entrance/exit. This approach has been utilised as the traffic model distributes development flows via one entry/exit point.*

# 3 Assessment of Enrichment of Breeding Habitats

In accordance with the DMRB methodology (HA207/07) the absence of a significant change in traffic with the proposed Top Wighay Farm development means that no further air quality assessment is required for Stone Hills Farm area. Therefore, no likely significant air quality effects are anticipated with the development. However, to put the potential deposition into context, the sections below have been provided concerning nitrogen loads and plant physiology.

## 3.1 Breeding Habitats

Woodlark habitat in the UK is typically short and open vegetation of clear felled forestry plantations and lowland heath (www.forestry.gov.uk/forestry/woodlark). Replanted clear felled areas remain suitable until the new trees are around 7 years old. Thereafter, the new plantations become too dense.

Nightjar habitat in the UK is similar to woodlark, but also extends to 'scrubby' habitat including older replanted stands of around 15 years old (www. forestry.gov.uk/forestry/nightjar).

## 3.2 Sensitivity of Habitats to Nitrogen Deposition

In circumstances where there is a deficiency in soil nitrogen, an input of nitrogen will usually result in enhanced plant growth, but only to a point where soil nitrogen reaches 'luxurious' levels and the concomitant tissue saturation is associated with no further growth and typically a depression of growth in response to additional inputs of nitrogen (Mengel & Kirkby, 1978).

Atmospheric nitrogen pollution in the UK has increased over the past 70 years whereby forestry productivity has increased to an extent that soil levels for forestry crops have reached luxurious levels with no further detectable growth responses to nitrogen inputs (Gundersen, 1999; Cannell, 2002). Where atmospheric deposition rates are greater than 10 – 20 kg N/ha/yr, folia nitrogen content (indicative of soil nitrogen status) for Scots pine, Norway spruce and Sitka spruce are above optimal levels and levels associated with imbalances in other nutrients and increased insect damage resulting in reduced growth (Kennedy, 2003). Slightly lower threshold deposition rates of 5 -15 kg N/ha/yr are currently cited by the Air Pollution Information System (APIS) partnership on their website (www.apis.ac.uk/overview/issues/overview_Noordwijkerhout_text) as being the critical nitrogen loads for coniferous woodland whereby growth process and responses to nitrogen are disrupted.

Given the background levels for the Hucknall and Mansfield areas already exceed these critical levels (e.g. Total N Deposition Rate of 41.1 kg N $ha^{-1}$ $y^{-1}$)[1] it is reasonable to conclude that even if the DMRB screening criteria had been exceeded and significant additional inputs of nitrogen were predicted that these would have been unlikely to increase growth rates of replanted conifer crops. Therefore, the development at Top Wighay Farm would not have an adverse effect by further acceleration of tree growth and reducing the extent of suitable habitat for woodlark and nightjar.

The same principles apply to the herbaceous (eg braken and grasses) and shrubby (eg bramble) ground flora that may regenerate following felling and cleared areas, and any open heath / heathy / short grassland areas. Some species groups such as the grasses may have a competitive advantage and predominate at luxury soil levels as is typical of lowland heath, rush and short grassland vegetation (where deposition is at or above the lower critical range of 10 – 20 kg N/ha/yr (www.apis.ac.uk/overview/issues/overview_Noordwijkerhout_text)). In addition, felled areas typically have significantly larger flushes of additional nitrogen released than deposited from roads over the first few years of clearance from the decomposition of the 'brash' (Ring, 1996).

The possibility that luxurious levels would not persist at a later date have also been considered as it is predicted that with the reduction in use of fossil fuels the background nitrogen deposition will decrease over coming years at a rate of around 2%/yr (Highways Agency, 2007). It is conceivable that over time the background will reduce to below the critical levels referred to above, although at 2%/year and with background deposition rates of 41.1 kg N/ha/year (2011) at Stone Hills Farm this situation would not be anticipated until around 2050 (using the higher critical load of 20 kg N/ha/yr and assuming the anticipated 2% drop off rate extends beyond 2025).

## 4 Outcome

Based on the available information for the stand alone Top Wighay Farm development there will be no likely significant effects on the pSPA from additional nitrogen deposition. This is certain to be the case for both replanted tree crop and ground vegetation owing to the current background already exceeding their critical nitrogen load thresholds in this part of the UK and the low amounts of traffic are anticipated to be generated along the A611.

[1] A total average N deposition value was obtained from the Air Pollution Information System (APIS) for National Grid Reference 453000, 357000. This is the closest available point to edge of Stone Hills Farm adjacent to the A611 (National Grid Reference: 453465, 357683). The three year 2006 to 2008 average N deposition from APIS was reduced by 2% per year, as advised in the DMRB guidance document to reflect 2011 rates of deposition.

The situation might change over the longer time frame as the background deposition reduces over the next 40 years and critical soil and tissue levels are no longer exceeded by the background deposition. However, given that the levels of traffic anticipated to be generated along the A611 are well below the levels requiring air quality assessment, no likely significant effects are anticipated, irrespective of the year of assessment.

Therefore, Top Wighay Farm as a stand alone development is assessed to be compliant with the Habitats Regulations (without mitigation) in respect of the pSPA and in the longer term. Even, if in time, it was decided there was a need for mitigation this could be achieved through standard habitat management.

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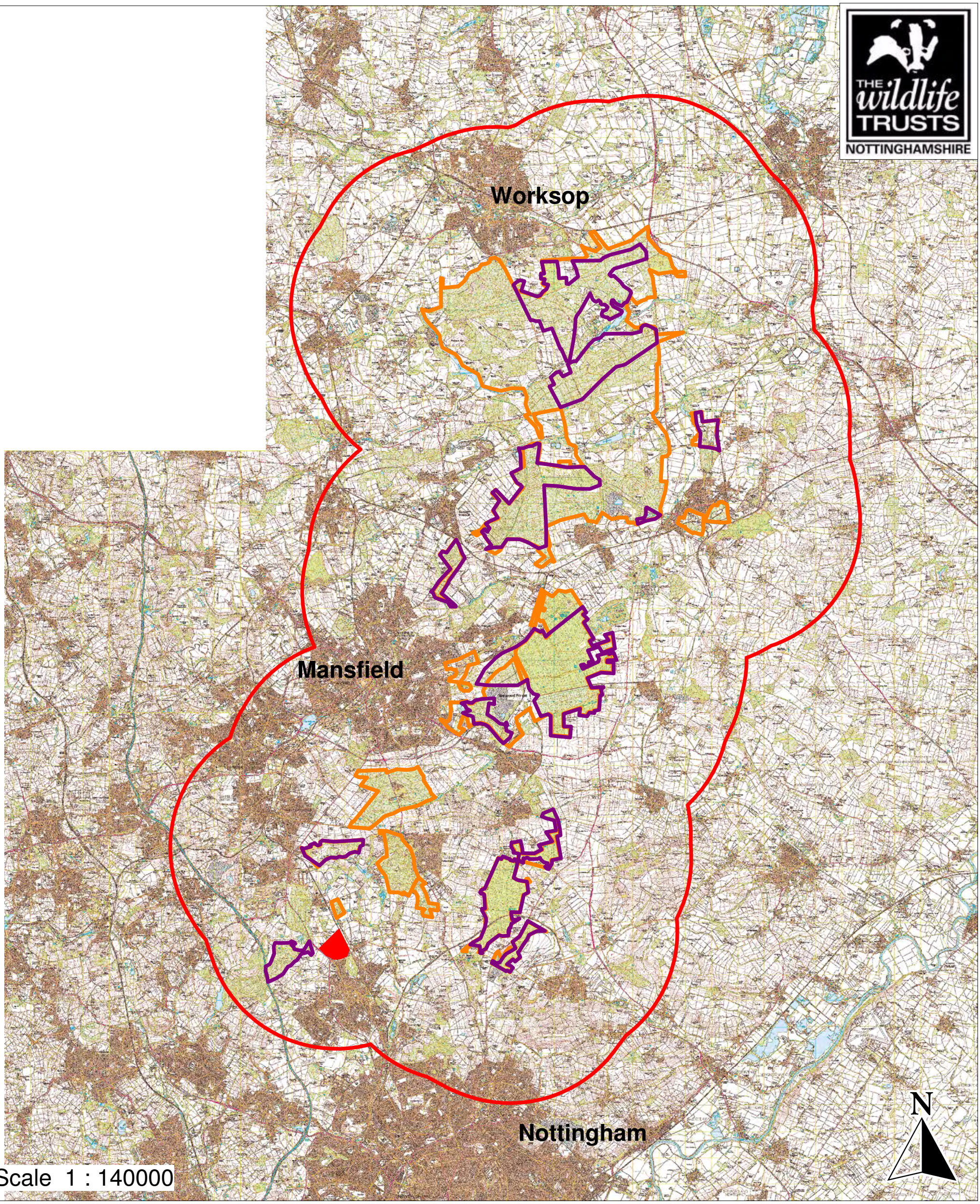
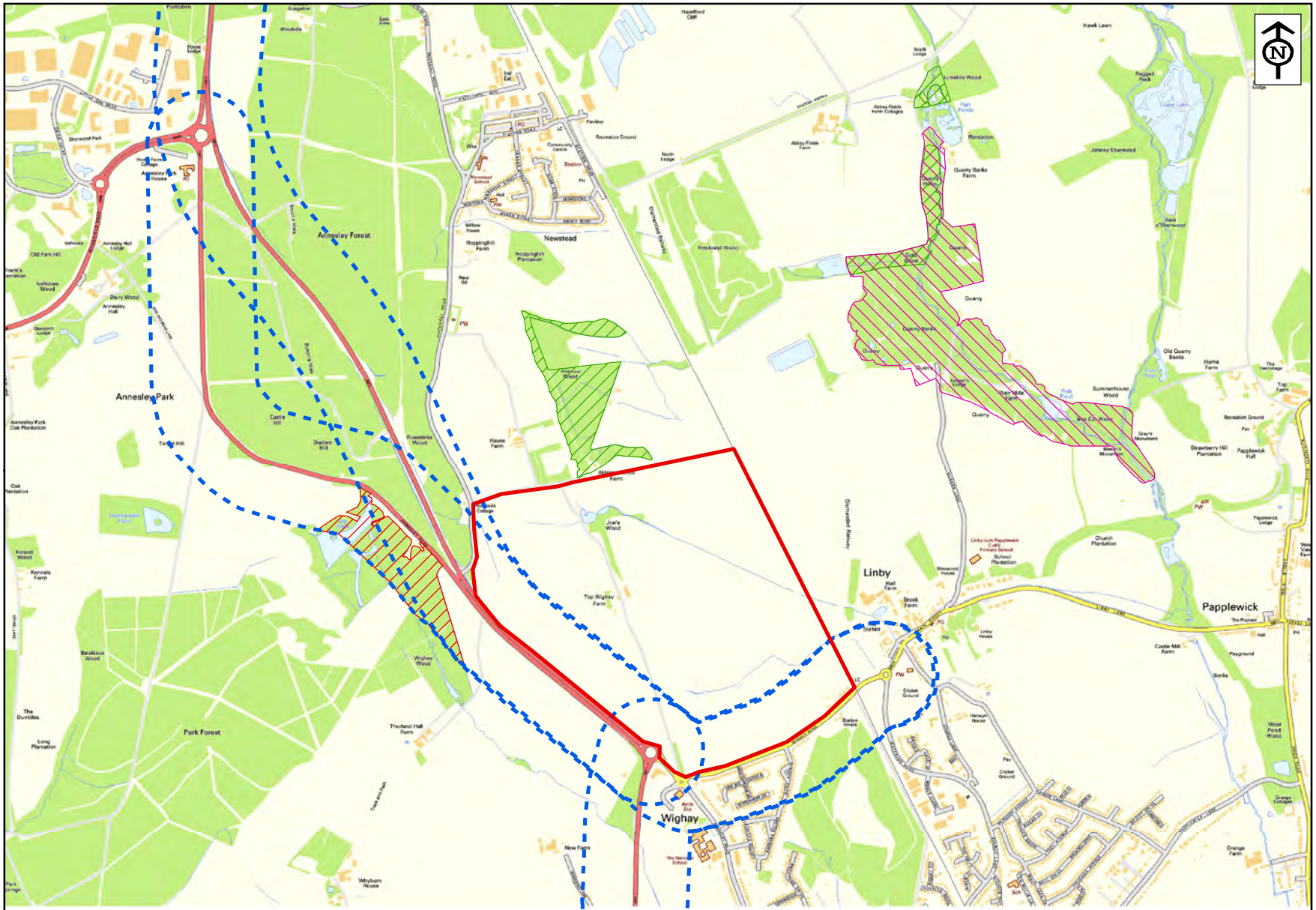



Key

- RSPB IBA Boundary with 5Km buffer
- NE Indicative Core Area
- RSPB IBA Boundary
- Top Wighay

Figure 1 v2

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**Key:**

- Site Boundary
- 200m from Centre of Road
- SSSI
- Ancient Woodland
- NE Indicative Core Area
- Air Quality Receptor

0 120 240 360 480

Metres

| | |
|---|---|
| Title | Constraints Figure |
| Project | Top Wighay Farm, Hucknall |
| Client | Nottingham County Council |

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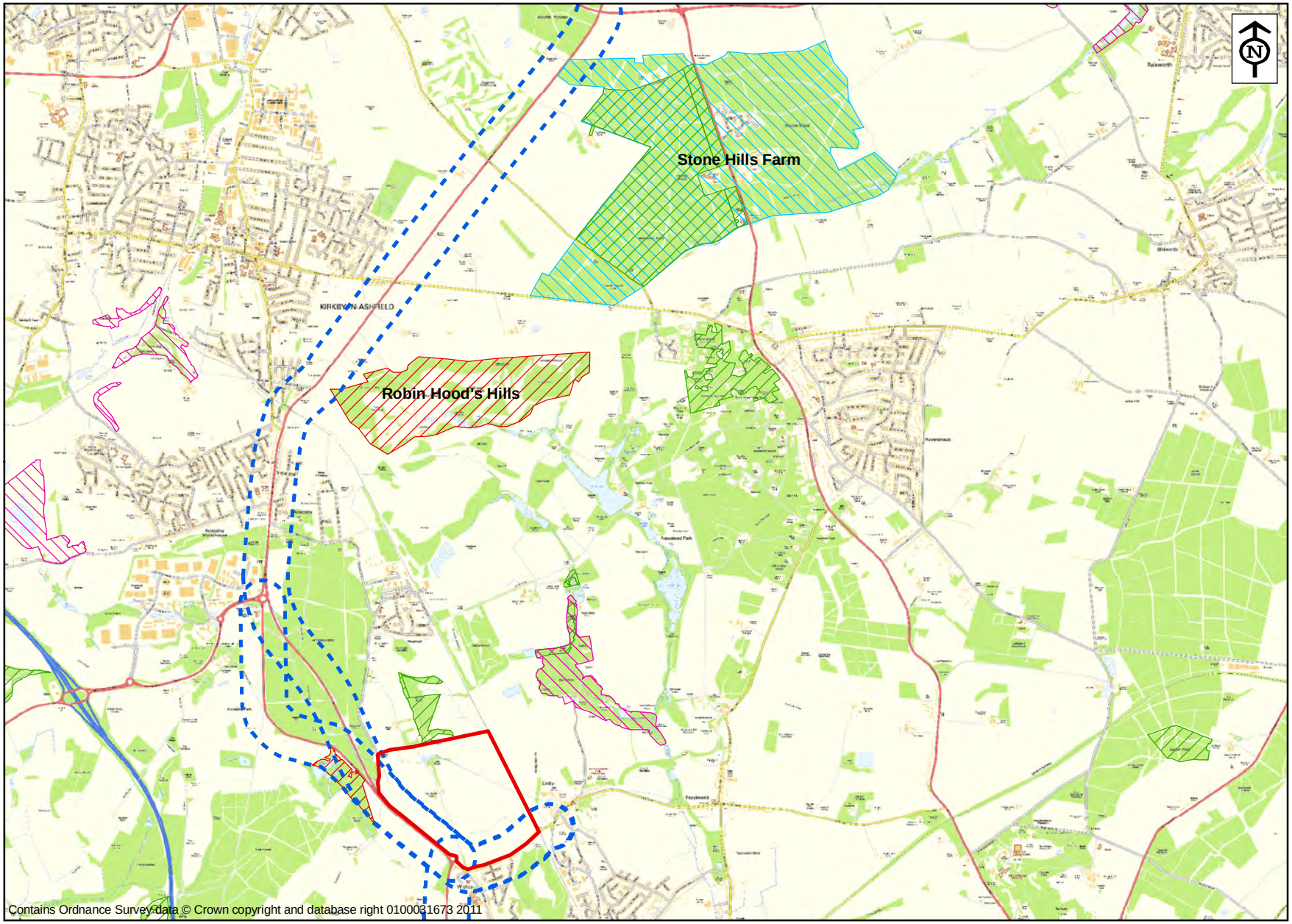
| App'd: | Drawn: | Ch'kd: | Drg.Size: A3 |
|---|---|---|---|
| Version: 1 | | Ref: 01/KC/LON | |
| Scale: 1:21,500 | | Job No: XXXXXXXX | |
| Date: 05/04/2011 | | FIGURE 2 | |






**Key:**

- Site Boundary
- 200m from Centre of Road
- SSSI
- Ancient Woodland
- RSPB IBA Boundary
- NE Indicative Core Area
- Air Quality Receptor

0 275 550 825 1,100

Metres

| | |
|---|---|
| Title | Constraints Figure - 2 |
| Project | Top Wighay Farm, Hucknall |
| Client | Nottingham County Council |

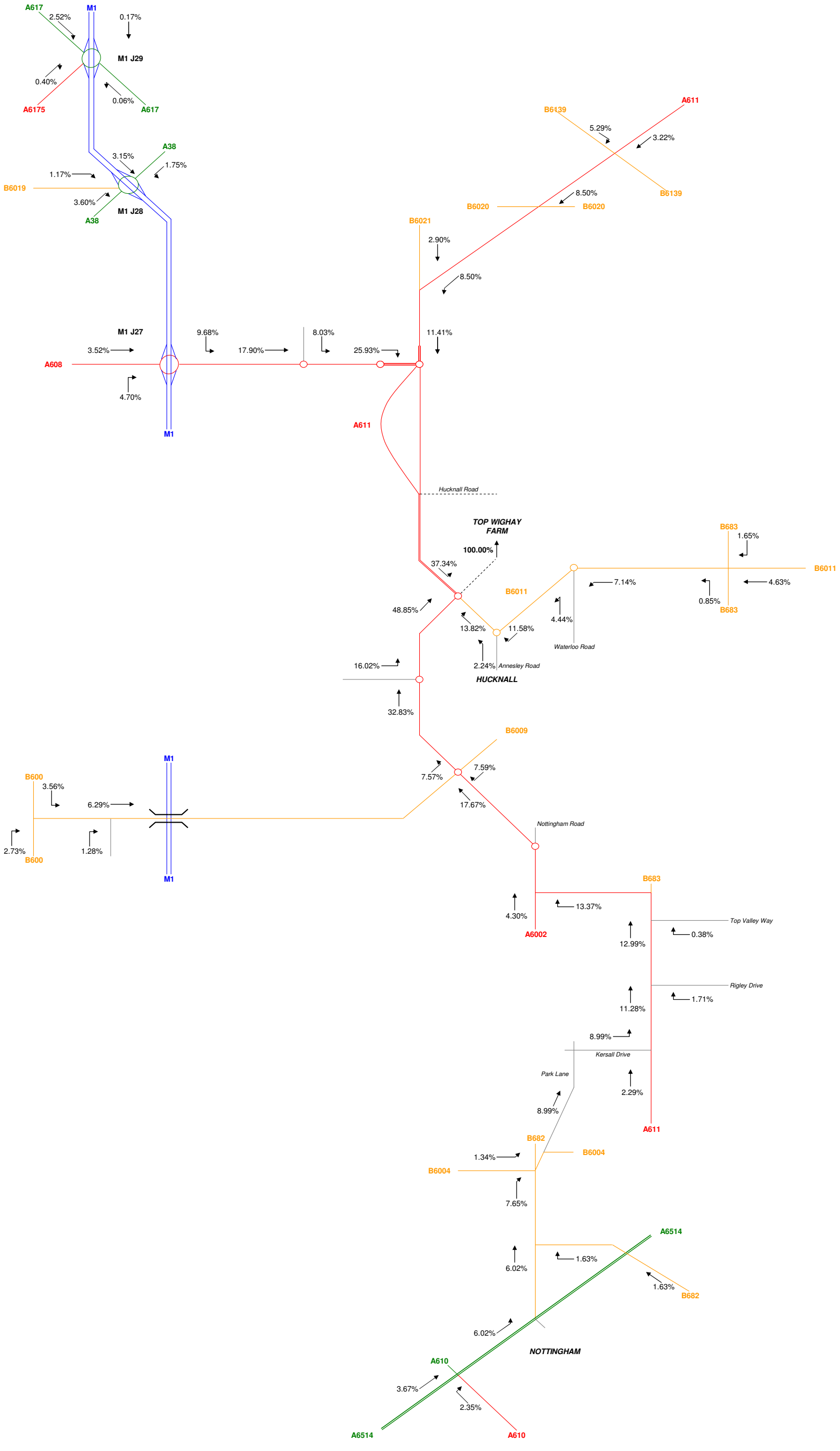
URS

| App'd: | Drawn: | Ch'kd: | Drg.Size: A3 |
|---|---|---|---|
| Version: 1 | | | Ref: 01/KC/LON |
| Scale: 1:50,000 | | | Job No: XXXXXXXX |
| Date: 05/04/2011 | | | FIGURE 3 |

Figure 4

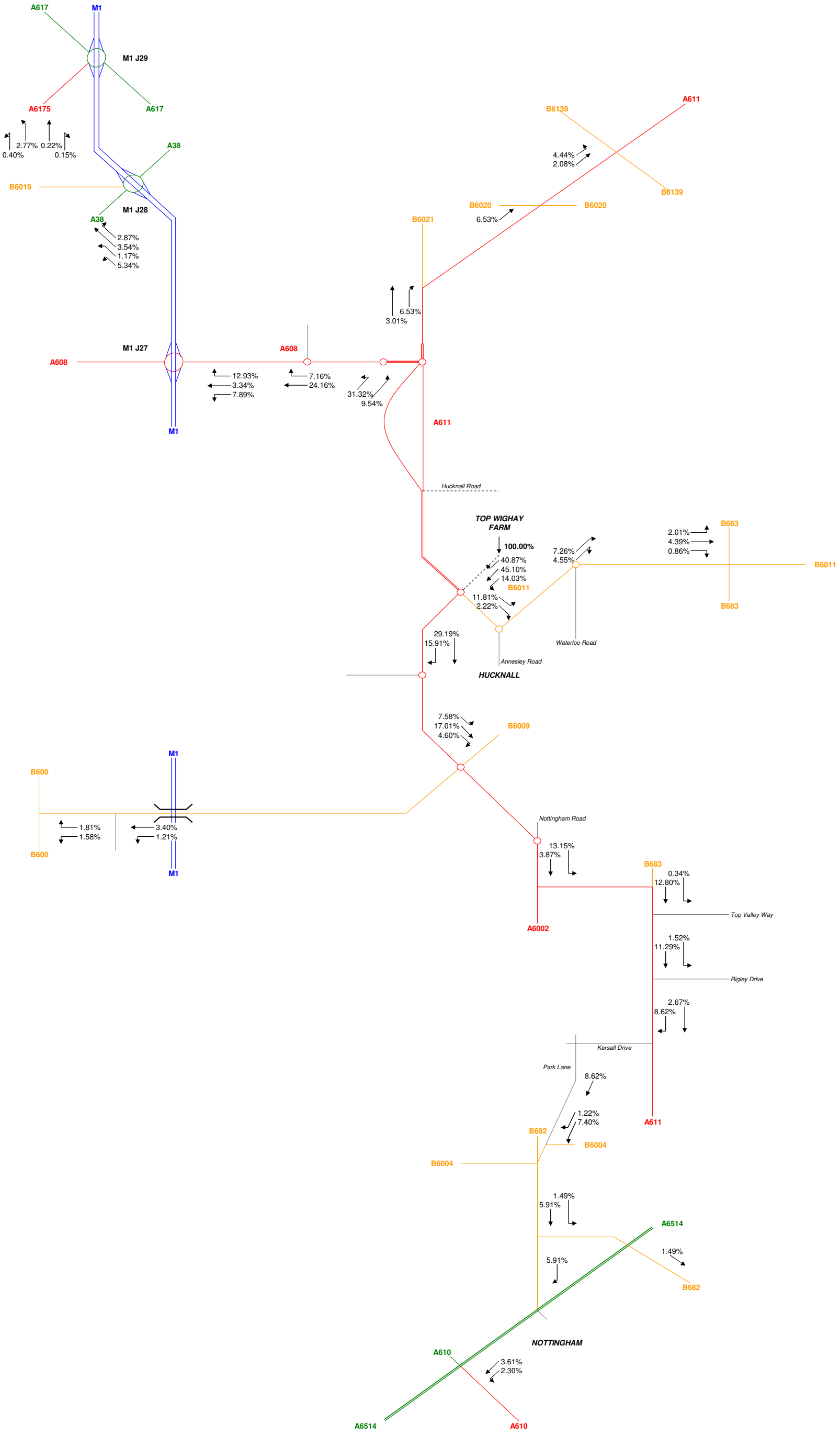
**Scenario 1a:**

**Isochrone = 30 minutes**
**Gravity fn = travel time$^2$**
**Site access = A611 / B6011 roundabout**
**Direction = Inbound**



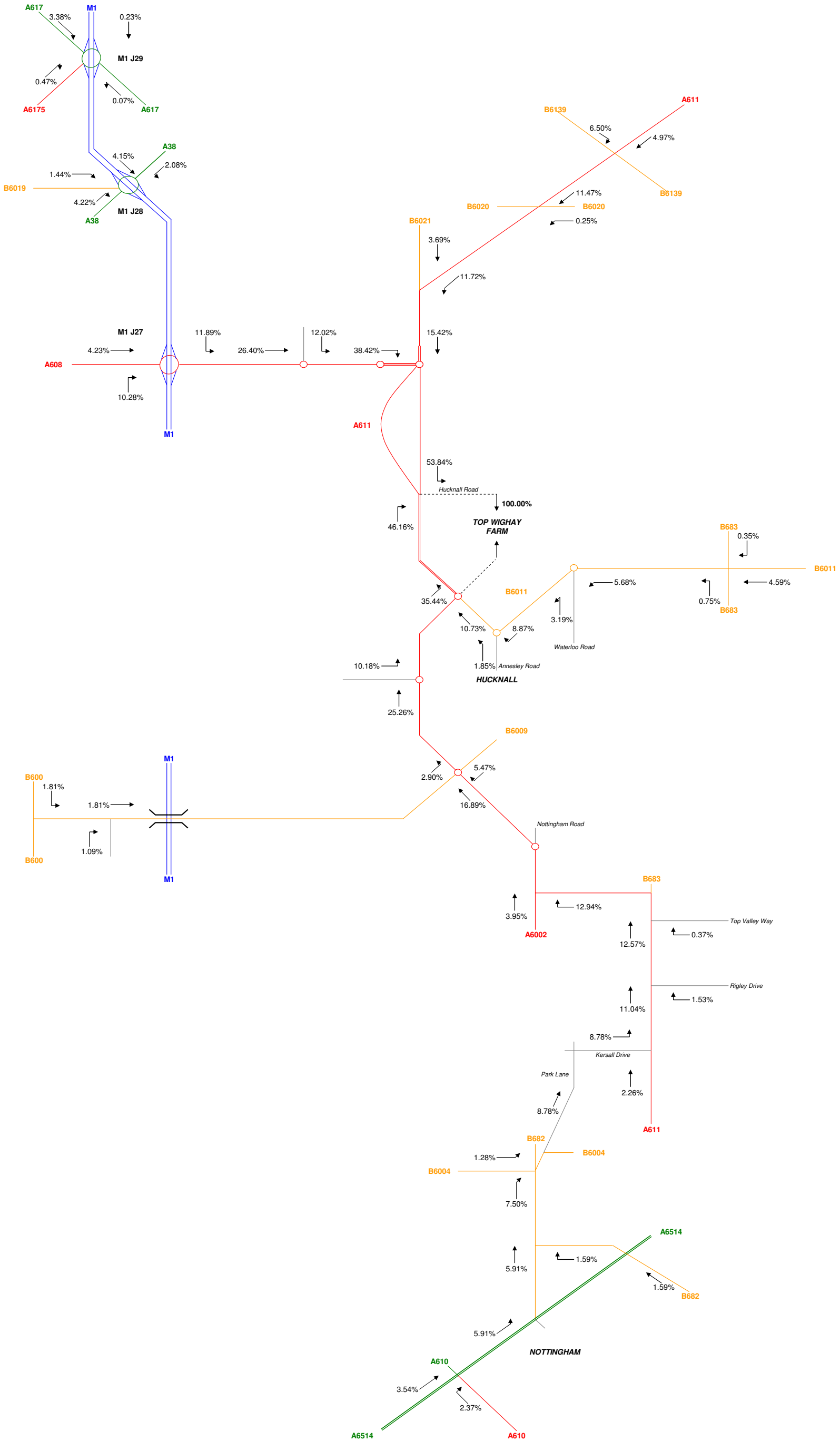
## Scenario 1b:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / B6011 roundabout
**Direction =** Outbound



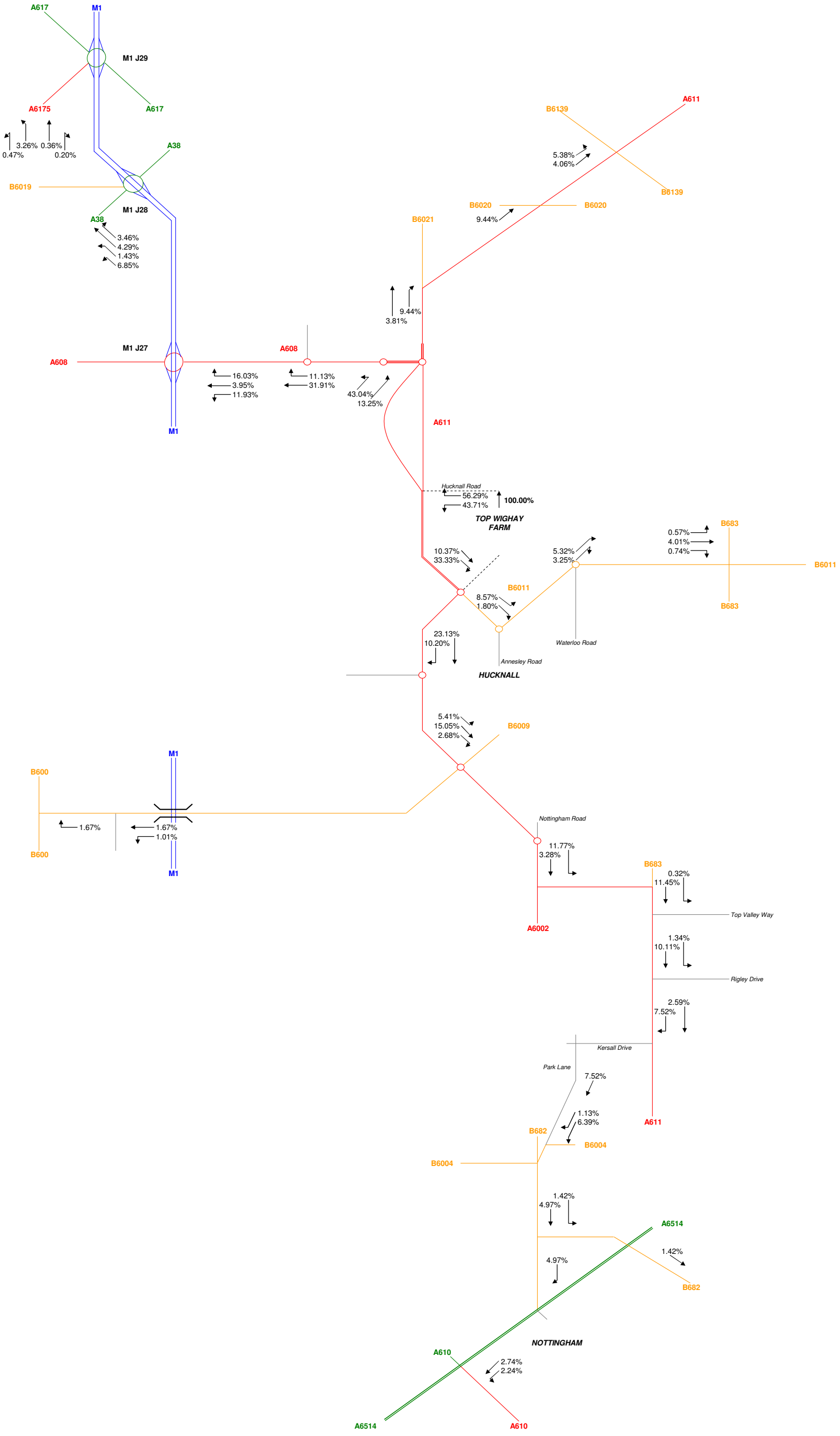
## Scenario 1c:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / Hucknall Road T-junction
**Direction =** Inbound



## Scenario 1d:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / Hucknall Road T-junction
**Direction =** Outbound



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# A Screening Assessment of Additional Noise from the Development at Top Wighay Farm, Hucknall on the Proposed Sherwood Forest Special Protection Area (SPA) for Birds and the Integrity of the Habitat for Woodlark and Nightjar

**By Prof Neil Humphries, Dr David Deakin, Suzanne Scott & Jonathan Gorstige**

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Nottingham

NG9 6RZ

Issue No 1 / 30th September 2011

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| **Project No:** | 46404409 |
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| Issue No | Date | Details of Revisions |
|---|---|---|
| 1 | 30/09/1011 | Final |
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# A Screening Assessment of Additional Noise from the Development at Top Wighay Farm, Hucknall on the Proposed Sherwood Forest Special Protection Area (SPA) for Birds and the Integrity of the Habitat for Woodlark and Nightjar

**By Prof Neil Humphries, Dr David Deakin, Suzanne Scott & Jonathan Gorstige**

## 1 Background

The proposed development site at Top Wighay Farm is located to the north of the urban conurbation of Hucknall and sits between the A611 to the west, the Mansfield-Nottingham railway line to the east and the B6011 to the south.

The 27ha site is owned by Nottinghamshire County Council and is strategically important for Gedling Borough Council to meet the Borough's housing needs (Top Wighay Farm, Hucknall, Nottinghamshire Development Brief, December 2008). The development would comprise of about 500 homes (18ha), a business area (6ha), both with road access from the A611 to the west, and green infrastructure and land seta side for nature conservation.

Natural England has advised the Local Authorities that whilst the Sherwood Forest area supports substantial populations of woodlark and nightjar, it had not yet advised the Secretary of State on any selection of any part as a Special Protection Area (SPA). As such the Habitats Regulations 2010 do not apply (see Natural England advice Note 28th June 2010, East Midlands Region), however, Natural England recommends that the Local Authorities proactively adopt a risk-based approach in any planning consent decisions taken in order to satisfy subsequent statutory reviews of consents should a SPA be proposed. Whilst some guidance is given (as to the proximity of houses (predation by cats and recreational activity) and the maintenance of nightjar in heathland SPAs) by the Thames Basin Joint Strategic Planning Partnership Board (2009), none is given in respect of traffic noise.

Both Natural England and the RSPB have during the course of the recent Rufford Energy Recovery Facility Inquiry indicated specific 'core' nightjar and woodlark areas that might be designated as a SPA and a 5km buffer boundary within which developments should be screened for their potential direct and indirect effects.

The Top Wighay Farm site is well within the RSPB 5km buffer boundary and lies within 0.5km of a Natural England 'indicative core area' at Park Forest for nightjar and/or woodlark (Figure 1). This lies to the west of the A611 with a RSPB 'important bird area' (Freckland Wood) about 300m to the north of the site boundary.

Natural England has identified a number of potential adverse impacts on SPA birds by developments such as proposed at Top Wighay Farm, these include additional noise from traffic (Natural England, 2010). DTA in their Habitats Regulations Appraisal Scoping for Further Assessment (September 2010) did not seem to consider noise which appears then to have been scoped-out.

The potential effect of an increase in noise was brought up verbally at a meeting on the 22nd June, 2011 with Natural England (NE) and Nottinghamshire Wildlife Trust. Following the meeting, the County Council asked URS Scott Wilson Ltd in August 2011 to assess the potential impact of noise from the additional traffic created by the development at Top Wighay Farm. In the absence of information at the present time relating to other developments, this assessment is as a stand alone development and not in combination with any others. This report sets out the methods used, the results and outcomes.

## 2 Sensitivity of Birds to Increase Noise Levels

The Highways Agency recognises that noise from traffic can adversely affect the behaviour of a range of bird species and cites research undertaken in Holland in the late 1980s (paras A5.19 – 5.20). Reijnen et al (1996) found that seven out of twelve species responded by reduced breeding density alongside heavily used roads, and particularly ground nesting species at distances up to about 1,500m. A relatively low threshold of 47dB(A) was suggested by the study and above which disturbance through noise might occur. However, for open habitats such as grassland and heathland, Reijnen et al suggested that other traffic related factors (such as lights) might be a cause of the longer distance disturbance effects.

Experimental studies by Dooling and Popper (2007) confirmed the sensitivity of birds to noise and suggested a higher threshold of 60dB(A) is more likely as a general rule due to behavioural adaptation, with some species being less sensitive (ie a higher threshold of 70 dB(A)) and others more so (a lower threshold of 50 dB(A)). It is noted that the species they studied were neither ground nesting species such as woodlark or nightjar. From Figure A3.1 (Highways Agency, 2011) for a noise level of 60 dB(A), this equates with a disturbance zone of about 400m (the local traffic volumes being in the order 50,000 vehicles per day), well within the Agency's screening distance of 600m. In terms of bird responses to noise levels, there is some correspondence between that cited generally for humans and traffic noise levels, and distances (Figure A3.1) and hence the recommended calculation area (600m). It is certain that the areas within 400m and possibly 600m (depending on topography, presence of noise absorbent features such as woodland) will be experiencing a level of noise from traffic and other sources. The issue in the case of Top Wighay Farm is whether the level of noise increases significantly due to the proposed development. The following method of assessment uses this approach.

## 3 Methodology and Results

The methodology used for assessing the Top Wighay Farm development and noise is based on the Annex F – Assessment of Designated Sites in the Highways Agency's Design Manual for Roads and Bridges, Volume 11 Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 7, Noise & Vibration, HD213/11, 2011. HD213/11 is agreed with statutory bodies, such as the Joint Nature Conservation Committee (JNCC) and Natural England to assess road noise at sensitive ecosystem sites. There is no other appropriate Environment Agency (EA), Natural England (NE) or other published overarching approach to the assessment of noise from traffic in the UK and that is also relevant to birds.

The Highways Agency's methodology includes three sequential stages, from *Scoping* through *Simple* to *Detailed Assessments* (see Highways Agency, 2011, Figure A1.1). The need for the *Detailed* Stage depends on the circumstance and a likely significant increase in noise levels, in other cases the *Simple Assessment* is more the appropriate and sufficient for the needs of the assessment.

### 3.1 Development Traffic Screening

Baseline Traffic Flows

Existing base year traffic flows (2010) were obtained from The Department for Transport's 'matrix' web-page (http://www.dft.gov.uk/matrix/). In particular, traffic count data has been obtained for four count locations on the A611 (Figures 2a - 2c) nearest to where the noise assessments are needed to be assessed, as follows:-

| Count No. | Region | LA Name | Count Point | Road | Road Sequence |
|---|---|---|---|---|---|
| 1 | East Midlands | Nottinghamshire County Council | 81204 | A611 | 73 |
| 2 | East Midlands | Nottinghamshire County Council | 58397 | A611 | 70 |
| 3 | East Midlands | Nottinghamshire County Council | 77403 | A611 | 65 |
| 4 | East Midlands | Nottinghamshire County Council | 99040 | A611 | 60 |

The traffic data available from the above locations were in the form of 24 hour Annual Average Daily Traffic flows (AADT), together with HGV numbers. These were factored into Annual Average Weekly

Traffic flows (AAWT) formats suitable for noise assessments by using local factors obtained from a year's full traffic count data on the nearby A46(T) trunk road, just east of Nottingham (Appendix 1).

Change in Traffic Flows Due to Top Wighay Farm

The Development Brief for Top Wighay Farm (Nottinghamshire County Council, 2008) sets out the potential to generate traffic and increase noise levels by the traffic from:

- 500 Dwellings – population 1250 people.
- 34,000 $m^2$ business space – business (B1) and small warehousing uses (B8).
- A 1.7 ha primary school site including playing fields.

Other activity types were also identified including retail, healthcare and leisure. However, there was insufficient data to quantify the potential traffic associated with these and other land-uses (e.g. an energy centre).

In the absence of specific traffic data for the development, the nationally accepted TRICS database (http://www.trics.org/default.cfm) was used to assess the generated traffic from the development. The resulting Annual Average Weekday Traffic (AAWT) flow was 6,200, including 140 heavy goods vehicles (HGVs). Development flows suitable for the noise assessments were then derived from this TRICS data (18 hour AAWT flows for noise) using a gravity flow model as not all the additional traffic would be expected to use the same route and would be expected to be distributed spatially.

The changes in spatial distribution in traffic was undertaken using the Highways Agency approved ODYSSEUS model (Anderton, 2008) and as deployed by the Agency in the form of their PENELOPE Model. The ODYSSEUS / PENELOPE model is based on the National Census Ward-level journey-to-work data in conjunction with a link-based 'gravity model' driven by travel cost. In this model trips are distributed through one entry/exit point at a development. Gravity models use a function of travel time and distance to provide a relative weighting reflecting the cost of travelling between each competing origin-destination pair. These weightings are used to provide factors to enable the predicted total travel demand to be distributed proportionately. The results give calculated Ward-level travel demands and estimates of link flows on the most attractive routes between the development site and surrounding Wards. Using this gravity distribution model, the development flows were assigned to the surrounding highway network, so that additional development traffic flows on each road link could be quantified. In the Top Wyghay Farm case there are two potential entry exit points: the A611/B6011 entrance and the A611/Hucknall Road T Junction.

The results of the gravity model are expressed as a percentage of *outgoing traffic* and *incoming traffic* along the routes around the proposed development are presented in the Annex 1.

### 3.2 Identification of SPA Receptors

Paragraph A1.12 of HD213/11 (Highways Agency, 2011) requires at least a *Simple Assessment* if sensitive receptors such as SPAs occurs within the calculation area (600m from carriageway edge). Hence, significant changes in noise levels from road contributions would also not be expected beyond 600m. In this respect only the pSPA (woodlark and nightjar habitat) within 600m of roads receiving the additional traffic might be potentially affected and need be considered. Hence, as a screening exercise, it is possible to

assess the implication of the development of Top Wighay Farm by mapping the overlap of the 600m calculation area over the indicative pSPA boundaries.

Three potential receptors were identified along the A611 Hucknall to Mansfield (Derby) Road (Figures 3 & 4), these were:

- North eastern par of Park Forest and Wighay Wood, juxtaposed with the A611 (Figure 3)
- Western point of part of Kirby Woods/Nottinghamshire Golf Course on Robin Hood Hills set back from A611 (Figure 4)
- North western part of Stone Hills Farm, juxtaposed with the A611 (Figure 4)

### 3.3 Screening SPA Receptors

In this section the pSPA receptors are considered further. The assessment is based on aerial photography and a site visit to Wighay Wood alongside the A611. Woodlark habitat in the UK is typically short and open vegetation of clear felled forestry plantations and lowland heath (www.forestry.gov.uk/forestry/woodlark). Replanted clear felled areas remain suitable until the new trees are around 7 years old. Thereafter, the new plantations become too dense. Nightjar habitat in the UK is similar to woodlark, but also extends to 'scrubby' habitat including older replanted stands of around 15 years old (www. forestry.gov.uk/forestry/nightjar).

Park Forest

The Wighay Wood is part of the Park Forest indicative core area for nightjar and woodlark, but the wood is broad leaved woodland and is not habitat of the woodlark or nightjar. Potentially suitable habitat occurs much further afield within the Park Forest. Only a very small part of the potential habitat is within the 600m radius of the A611 kerb edge, but none within the 400m radius which envelops Wighay Wood: the deciduous woodland will act as an acoustic screen with respect to birds and the effects of noise further afield (Reijnen et al, 1996).

Robin Hood Hills

Some of the western part of Robin Hood Hills indicative area lies within the 400 & 600m radii, mainly conifer habitat with open habitat (golf course). This too is likely to be not significant in habitat terms, but the potential habitat and use by woodlark and nightjar within the affected zone should be checked by a suitably qualified ecologist.

Stone Hills Farm

A conifer block and possibly some open felled areas at the Stone Hills Farm 'indicative' core area near to Mansfield lie within the 400 & 600m radii along the A611 and potentially might be affected by additional noise levels if the roadside conifers were felled and not replanted.

## 4 Assessment of Increase in Noise Levels

In terms of the change in traffic noise level at 10m from the kerb (for both the background and with the development scenarios in each assessment year at each site (Table 1), the estimated change (using the

Highways Agency method) is very small at all the sensitive receptor locations. For example, the change in each assessment year (2010, 2011 and 2012) is +0.1 dB at sites 1-3 and +0.6 dB at site 4. The magnitude falls into the 'negligible' classification (Highways Agency, 2011), and is regarded as 'imperceptible level of change' at 10m from the kerb side (ie not extending to within the screened receptor areas potentially used for breeding by woodlark and nightjar.

The gravity model indicated that the greatest flows to and from the site are distributed along the A611, with around approximately 50% travelling in each direction, with a large percentage of traffic utilising the A608 and the M1. The draw of the M1 along with the dilution in traffic along the B-road network along the A611 is the reason why flows are reduced to levels well below the Highways Agency screening zones at all the three pSPA receptor sites. Therefore, no likely significant increases in noise levels would occur within the pSPA locations, and no further *Detailed Assessment* is required.

## 5 Outcome

Based on the small magnitude of the likely change in total traffic flows and HGVs due to the Top Wighay Farm development, the corresponding change in traffic noise levels along the affected road links is very small (ie <+1 dB(A) for all the road links under consideration (Highways Agency, 2011)). Given that the levels of traffic anticipated to be generated along the A611 are well below the levels requiring a detailed noise assessment, no likely significant effects are anticipated, irrespective of the year of assessment. Also, it is worth noting that noise levels might reduce significantly over the longer time frame through the adoption of electric motors to propel vehicles.

Based on the available information for the stand-alone Top Wighay Farm development, even in the absence of mitigation, there will be no likely significant adverse effects on the Sherwood pSPA from additional noise. Therefore, Top Wighay Farm as a stand alone development is assessed to be compliant with the Habitats Regulations (without mitigation) in respect of the pSPA and noise. Even, if it was decided there was a need for mitigation this could be achieved through standard methods such as acoustic fencing etc (Highways Agency, 2011).

## 6 References

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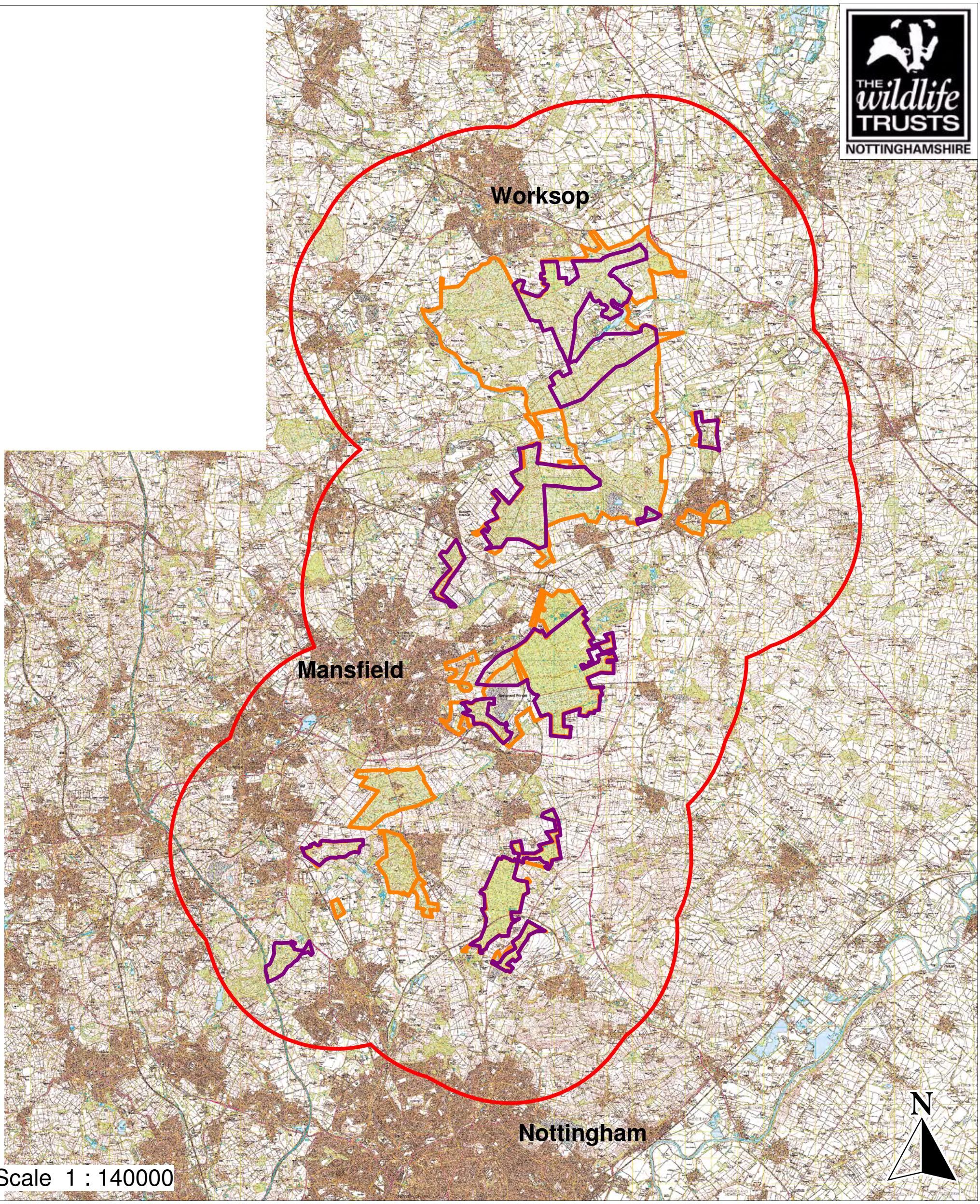
Reijnen R, Foppen R & Meeuwsen H, 1996. The Effects of Traffic Density of Breeding Birds in Dutch Agricultural Grasslands. Biological Conservation 75, 255-26.

Thames Basin Joint Strategic Planning Partnership Board, 2009. Thames Basin Heaths Special Protection Area Delivery Framework. South East England Regional Assembly, Guildford.

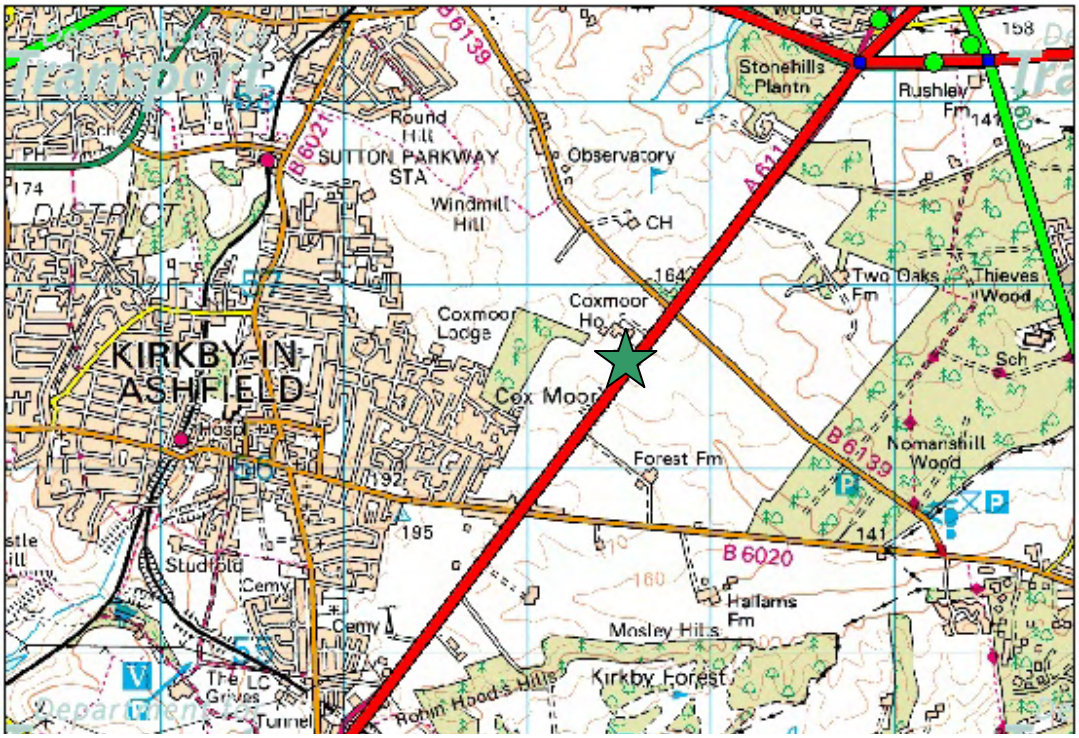
# Figures




Key

- RSPB IBA Boundary with 5Km buffer
- NE Indicative Core Area
- RSPB IBA Boundary

Plan 1 v2



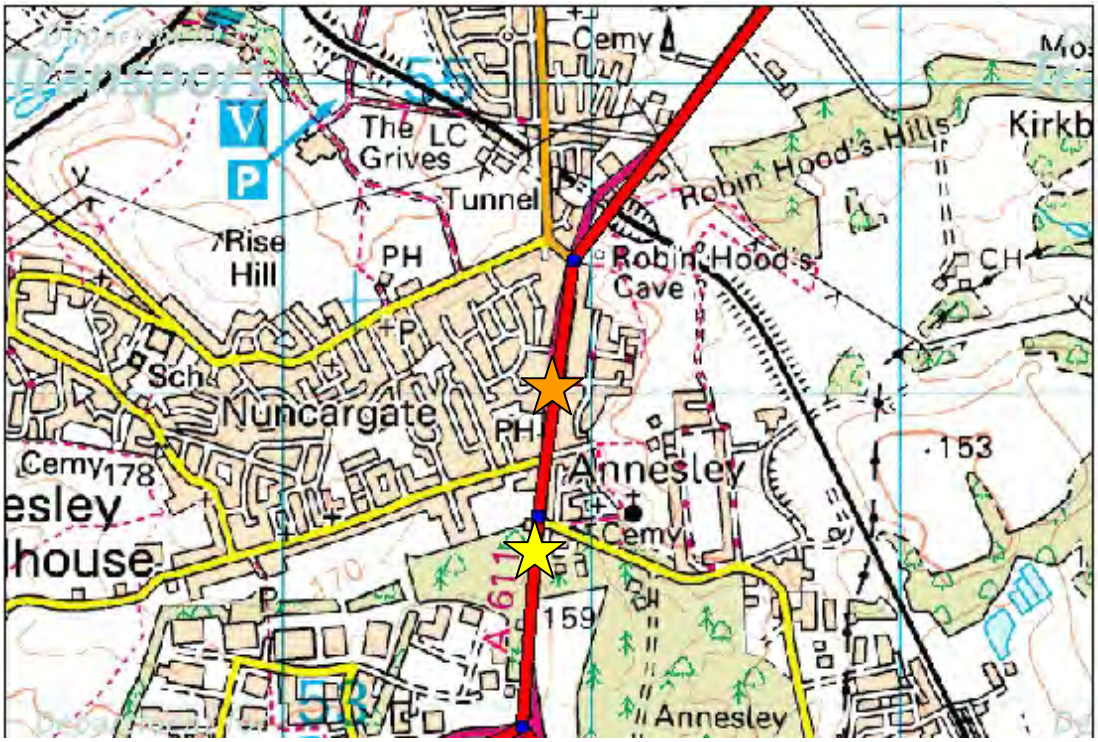

**Location 1**

URS CORPORATION
12 Regan Way
Chetwynd Business Park
Chilwell
Nottingham
NG9 6RZ

**TOP WIGHAW FARM, HUKNALL**

**Figure 2a: Count Location 1, A611**

| PC Ref: | Drawn by: PB | Checked by: | Date: 03/03/10 |
|---|---|---|---|




**Location 2**

**Location 3**

URS CORPORATION
12 Regan Way
Chetwynd Business Park
Chilwell
Nottingham
NG9 6RZ

**TOP WIGHAY FARM HUCKNALL**

**Figure 2b: Count Locations 2 & 3 A611**

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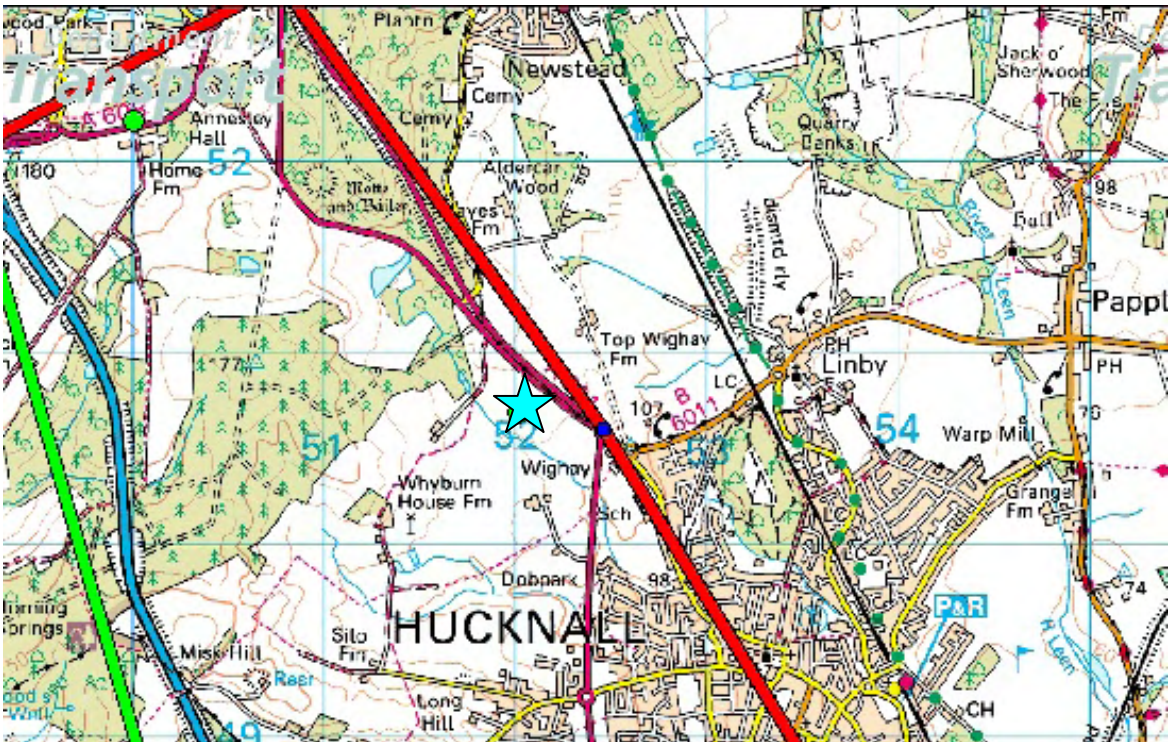
|---|---|---|---|



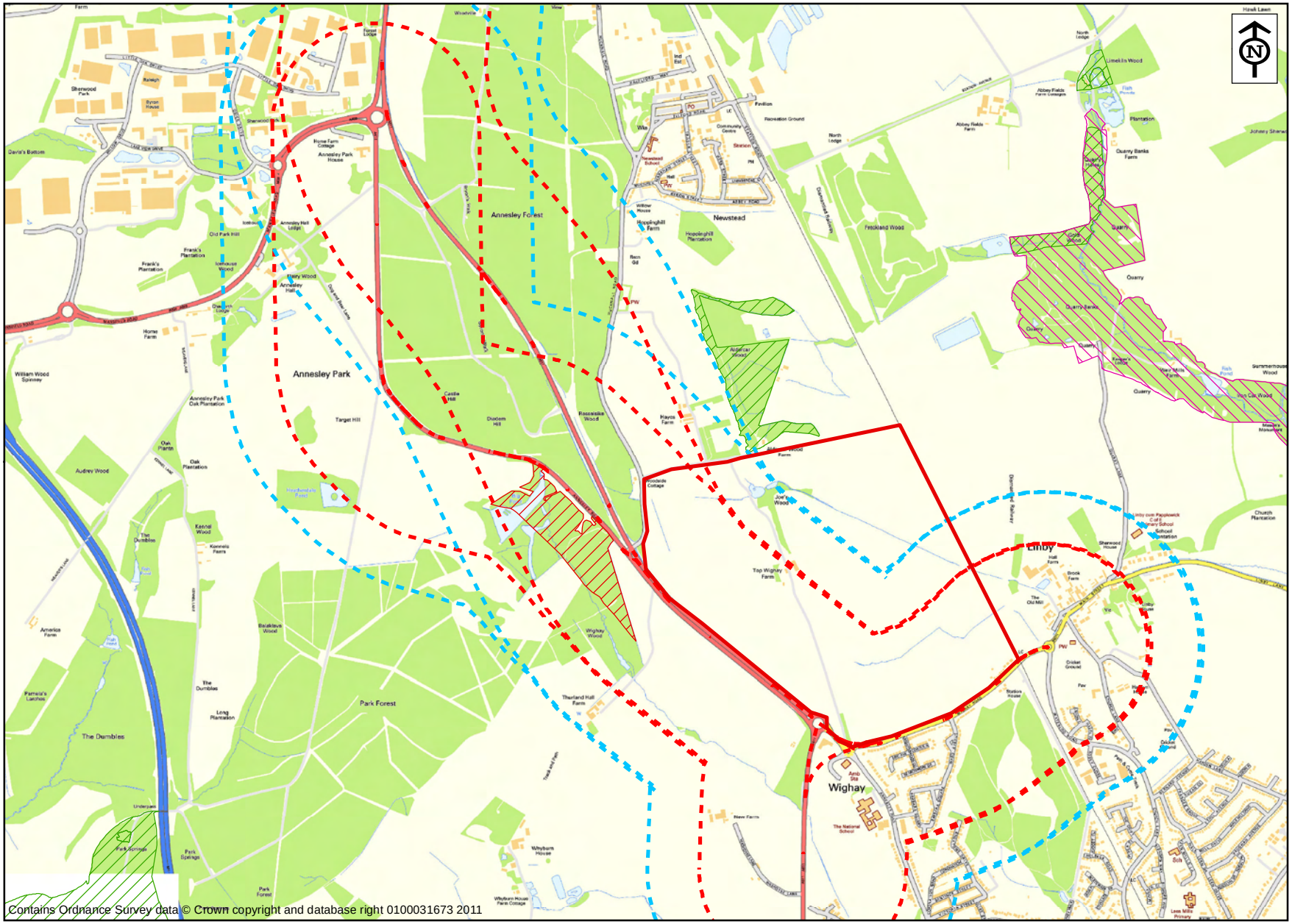

**Location 4**

URS CORPORATION
12 Regan Way
Chetwynd Business Park
Chilwell
Nottingham
NG9 6RZ

**TOP WIGHAY FARM HUCKNALL**

**Figure 2c: Count Location 4 A611**

| PC Ref: | Drawn by: PB | Checked by: | Date: 03/03/10 |
|---|---|---|---|

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**Key:**

- Site Boundary
- 400m from Centre of Road
- 600m from Centre of Road
- SSSI
- Ancient Woodland
- NE Indicative Core Area
- Noise Receptor

0 120 240 360 480

Metres

| | |
|---|---|
| Title | Constraints Plan |
| Project | Top Wighay Farm, Hucknall |
| Client | Nottingham County Council |

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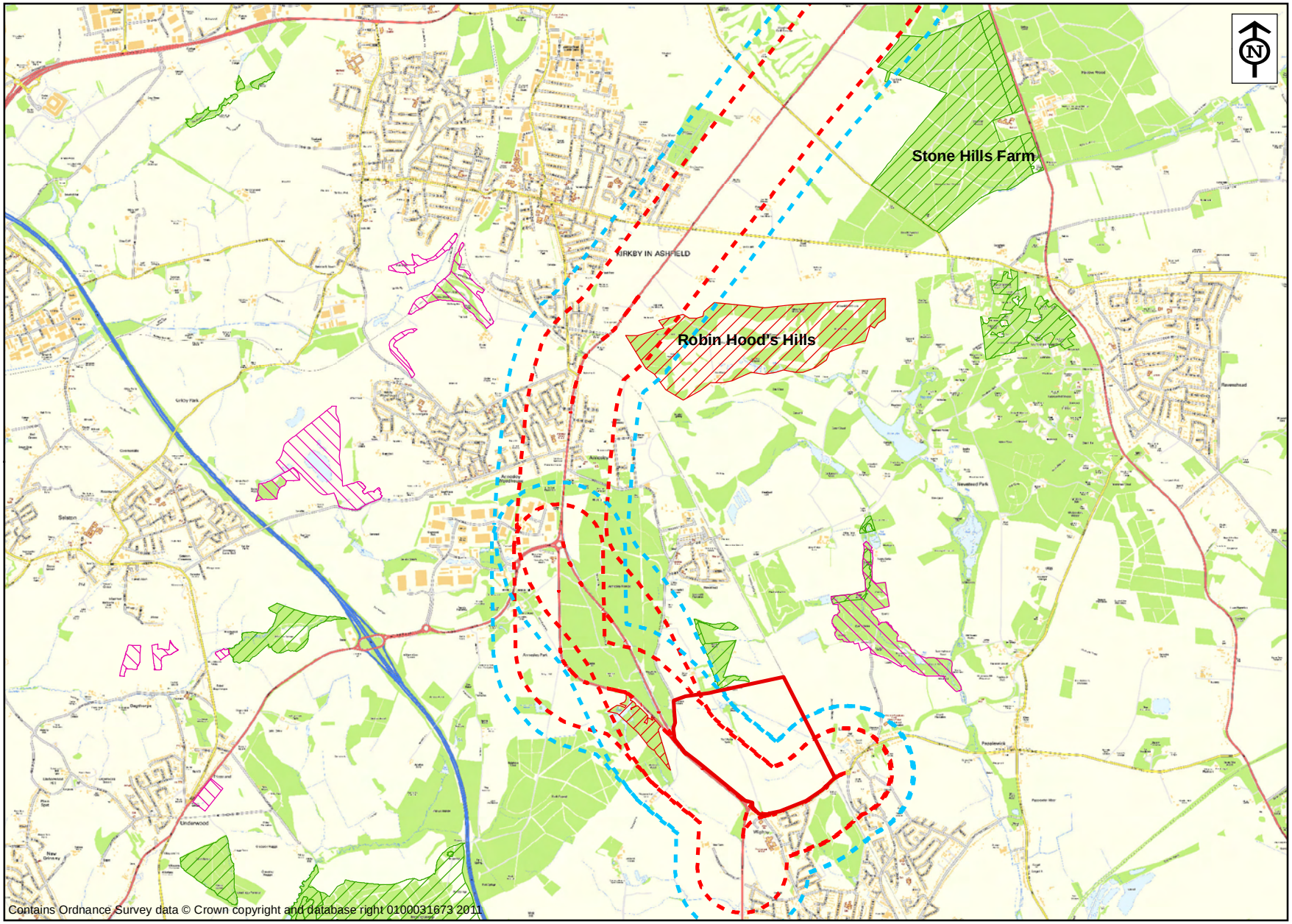
| App'd: | Drawn: | Ch'kd: | Drg.Size: A3 |
| Version: 1 | | Ref: 01/KC/LON | |
| Scale: 1:21,500 | | Job No: XXXXXXXX | |
| Date: 05/04/2011 | | FIGURE 3 | |




**Key:**

- Site Boundary
- 400m from Centre of Road
- 600m from Centre of Road
- SSSI
- Ancient Woodland
- NE Indicative Core Area
- Noise Receptor

0 270 540 810 1,080

Metres

| | |
|---|---|
| Title | Constraints Plan |
| Project | Top Wighay Farm, Hucknall |
| Client | Nottingham County Council |

URS

| | | | |
|---|---|---|---|
| App'd: | Drawn: | Ch'kd: | Drg.Size: A3 |
| Version: 1 | | | Ref: 01/KC/LON |
| Scale: 1:50,000 | | | Job No: XXXXXXXX |
| Date: 05/04/2011 | | | **FIGURE 4** |

# Appendix 1 – Predicted Noise Traffic Flows & Indicative Levels

## Appendix 1: Predicted Noise Traffic Flows & Indicative Levels

### 2010 AADT to AAWT Counts

*2010 18 hr AAWT from A46 HistoricTraffic Count Data*
*Factor* 1
*HGV % Factor* 1

| | 2010 24 Hr AADT | | | 2010 24 18Hr AAWT | | | 2010 18 Hr AAWT Development Traffic | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Count** | **AADT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **In** | **Out** | **In Dev** | **Out Dev** | **Tot Dev.** | | **HGVs** | | **% HGV's** |
| **1** | **18023** | **745** | **0.04** | **18819** | **843** | **0.04** | **0** | **0** | **352.70** | **295** | **648** | | **15** | | **2.26%** |
| **2** | **22677** | **876** | **0.04** | **23678** | **991** | **0.04** | **0** | **0** | **474.17** | **414** | **888** | | **20** | | **2.26%** |
| 3 | 22904 | 885 | 0.04 | 23915 | 1002 | 0.04 | 0 | 0 | 474.17 | 414 | 888 | | 20 | | 2.26% |
| 4 | 21668 | 650 | 0.03 | 22625 | 736 | 0.03 | 1 | 1 | 1655.58 | 1759 | 3415 | | 77 | | 2.26% |

### Summary of AAWT Counts 2010

| | 2010 24 18Hr AAWT | | | 2010 18hr AAWT Dev. Traffic | | | 2010 18hr AAWT Base+Dev | | | % Increases | | **Assumed** | **Indicative Noise Level at 10m from kerb dB(A)** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Count** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **Speed kph** | **Base** | **With Dev** | **Change** |
| **1** | **18819** | **843** | **4.48** | **648** | **15** | **2.26** | **19467** | **858** | **4.41** | **3.4%** | **1.7%** | 112 | 76.3 | 76.4 | **0.1** |
| **2** | **23678** | **991** | **4.19** | **888** | **20** | **2.26** | **24567** | **1012** | **4.12** | **3.8%** | **2.0%** | 112 | 77.2 | 77.4 | **0.1** |
| **3** | 23915 | 1002 | 4.19 | 888 | 20 | 2.26 | 24804 | 1022 | 4.12 | 3.7% | 2.0% | 112 | 77.2 | 77.4 | **0.1** |
| **4** | 22625 | 736 | 3.25 | 3415 | 77 | 2.26 | 26040 | 813 | 3.12 | 15.1% | 10.5% | 112 | 76.9 | 77.4 | **0.6** |

**TEMPRO Growth Factors**

2010 to 2011 = 1

### Summary of AAWT Counts 2011

| **Count** | 2011 24 18Hr AAWT | | | 2011 18hr AAWT Dev. Traffic | | | 2011 18hr AAWT Base+Dev | | | % Increases | | **Assumed** | **Indicative Noise Level at 10m from kerb dB(A)** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **Speed kph** | **Base** | **With Dev** | **Change** |
| **1** | **19009** | **852** | **4.48** | **648** | **15** | **2.26** | **19657** | **866** | **4.41** | **3.4%** | **1.7%** | 112 | 76.3 | 76.4 | **0.1** |
| **2** | **23918** | **1002** | **4.19** | **888** | **20** | **2.26** | **24806** | **1022** | **4.12** | **3.7%** | **2.0%** | 112 | 77.2 | 77.4 | **0.1** |
| **3** | 24157 | 1012 | 4.19 | 888 | 20 | 2.26 | 25045 | 1032 | 4.12 | 3.7% | 2.0% | 112 | 77.3 | 77.4 | **0.1** |
| **4** | 22853 | 743 | 3.25 | 3415 | 77 | 2.26 | 26268 | 820 | 3.12 | 14.9% | 10.4% | 112 | 76.9 | 77.5 | **0.6** |

**TEMPRO Growth Factors**

2010 to 2012 = 1

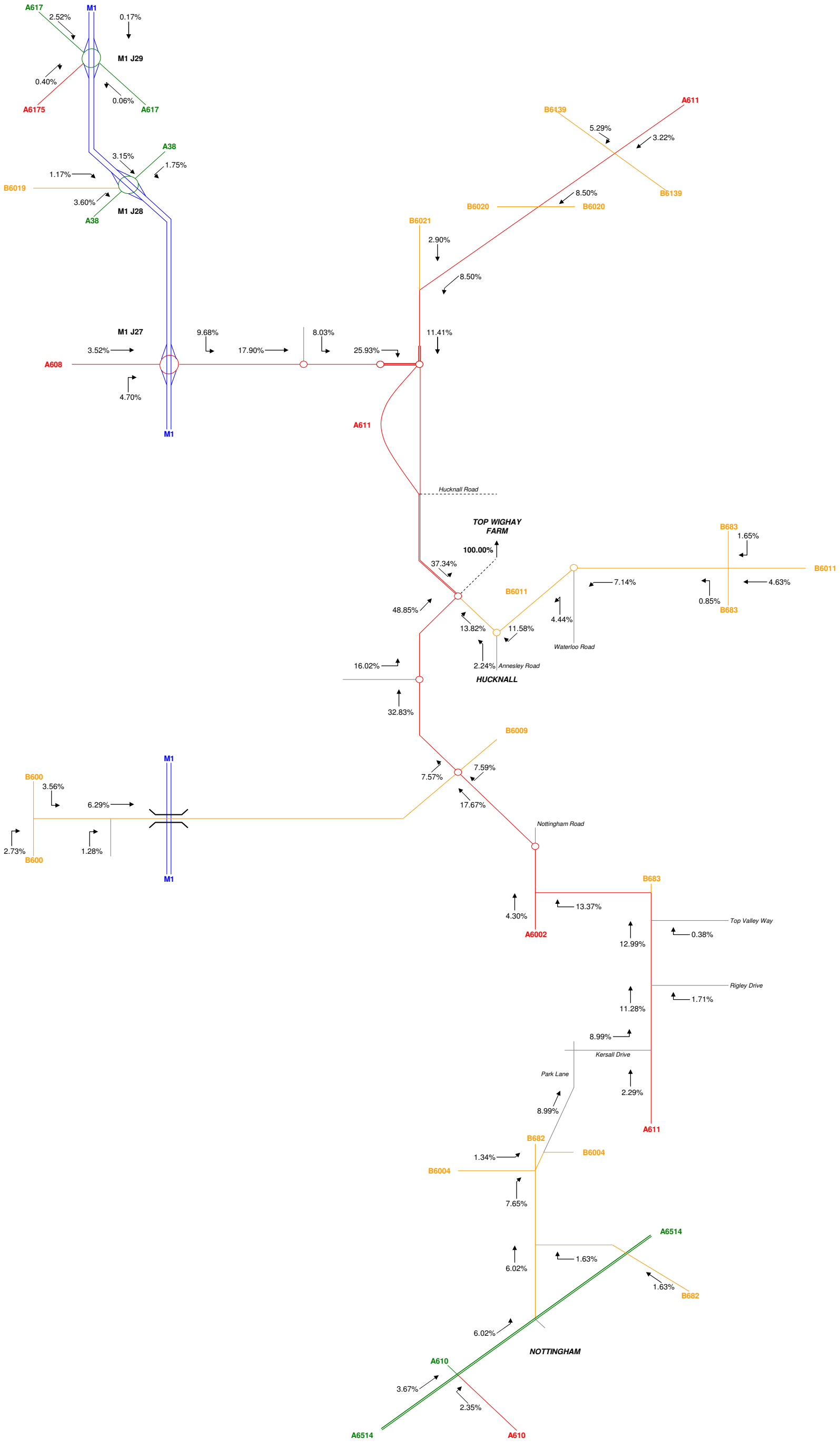
### Summary of AAWT Counts 2012

| | 2011 24 18Hr AAWT | | | 2011 18hr AAWT Dev. Traffic | | | 2011 18hr AAWT Base+Dev | | | % Increases | | **Assumed** | **Indicative Noise Level at 10m from kerb dB(A)** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Count** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **Speed kph** | **Base** | **With Dev** | **Change** |
| **1** | 19186 | 860 | 4.48 | 648 | 15 | 2.26 | 19834 | 874 | 4.41 | 3.4% | 1.7% | 112 | 76.3 | 76.5 | **0.1** |
| **2** | 24140 | 1011 | 4.19 | 888 | 20 | 2.26 | 25028 | 1031 | 4.12 | 3.7% | 2.0% | 112 | 77.3 | 77.4 | **0.1** |
| **3** | 24382 | 1021 | 4.19 | 888 | 20 | 2.26 | 25270 | 1041 | 4.12 | 3.6% | 2.0% | 112 | 77.3 | 77.5 | **0.1** |
| **4** | 23066 | 750 | 3.25 | 3415 | 77 | 2.26 | 26481 | 827 | 3.12 | 14.8% | 10.3% | 112 | 76.9 | 77.5 | **0.6** |

# Annex 1 - Gravity Model Scenarios

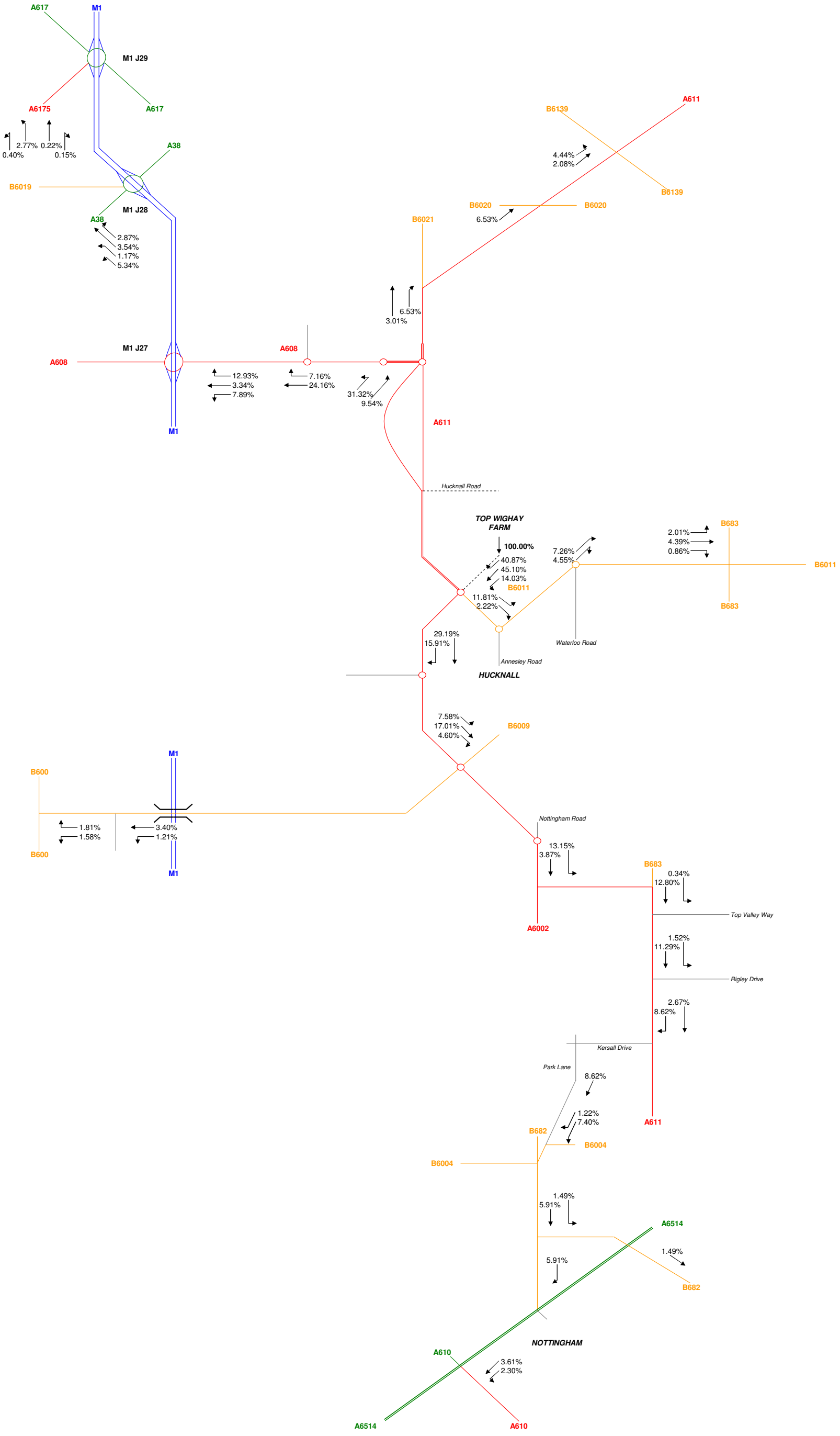
## Scenario 1a:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / B6011 roundabout
**Direction =** Inbound



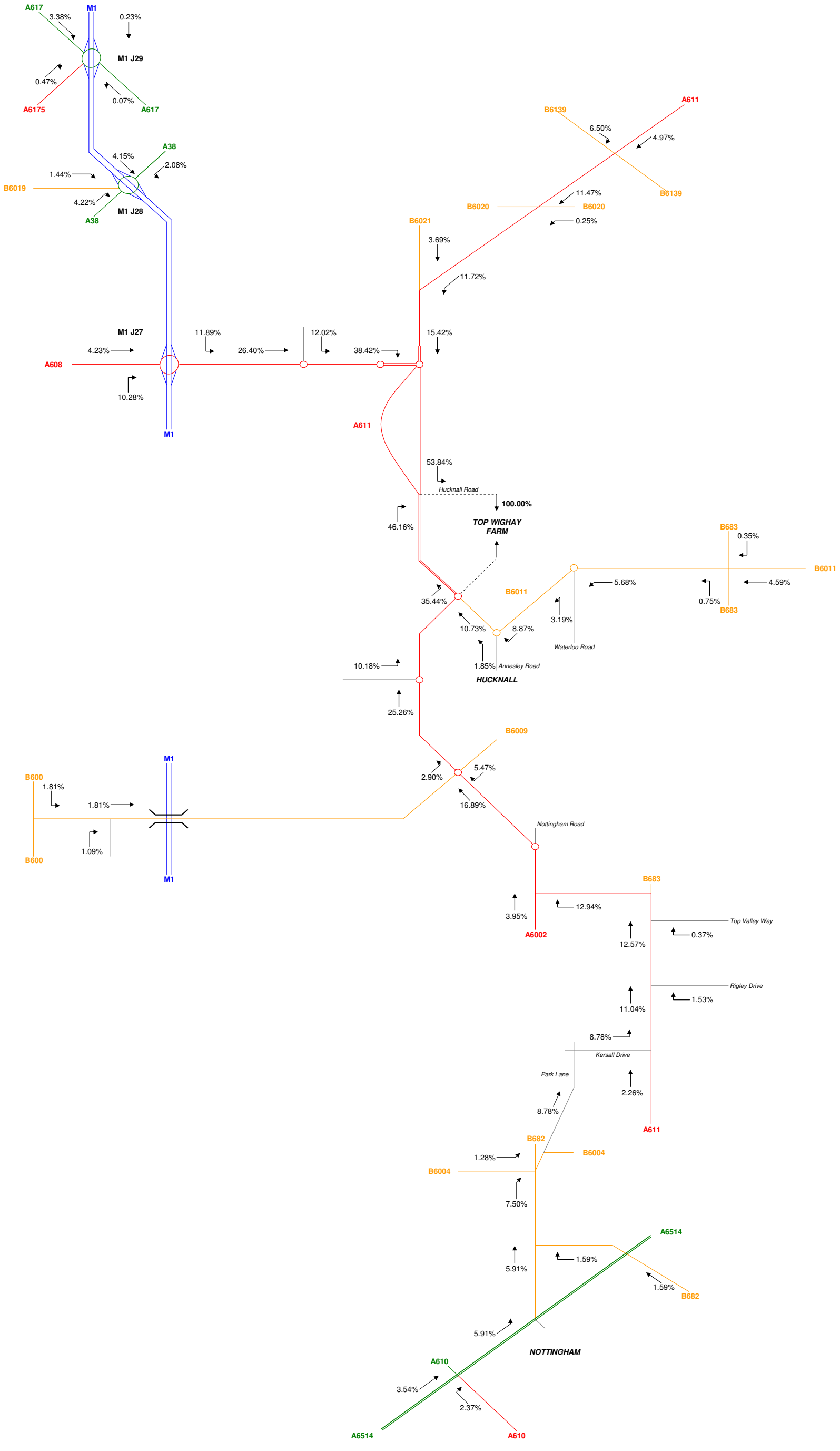
## Scenario 1b:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / B6011 roundabout
**Direction =** Outbound



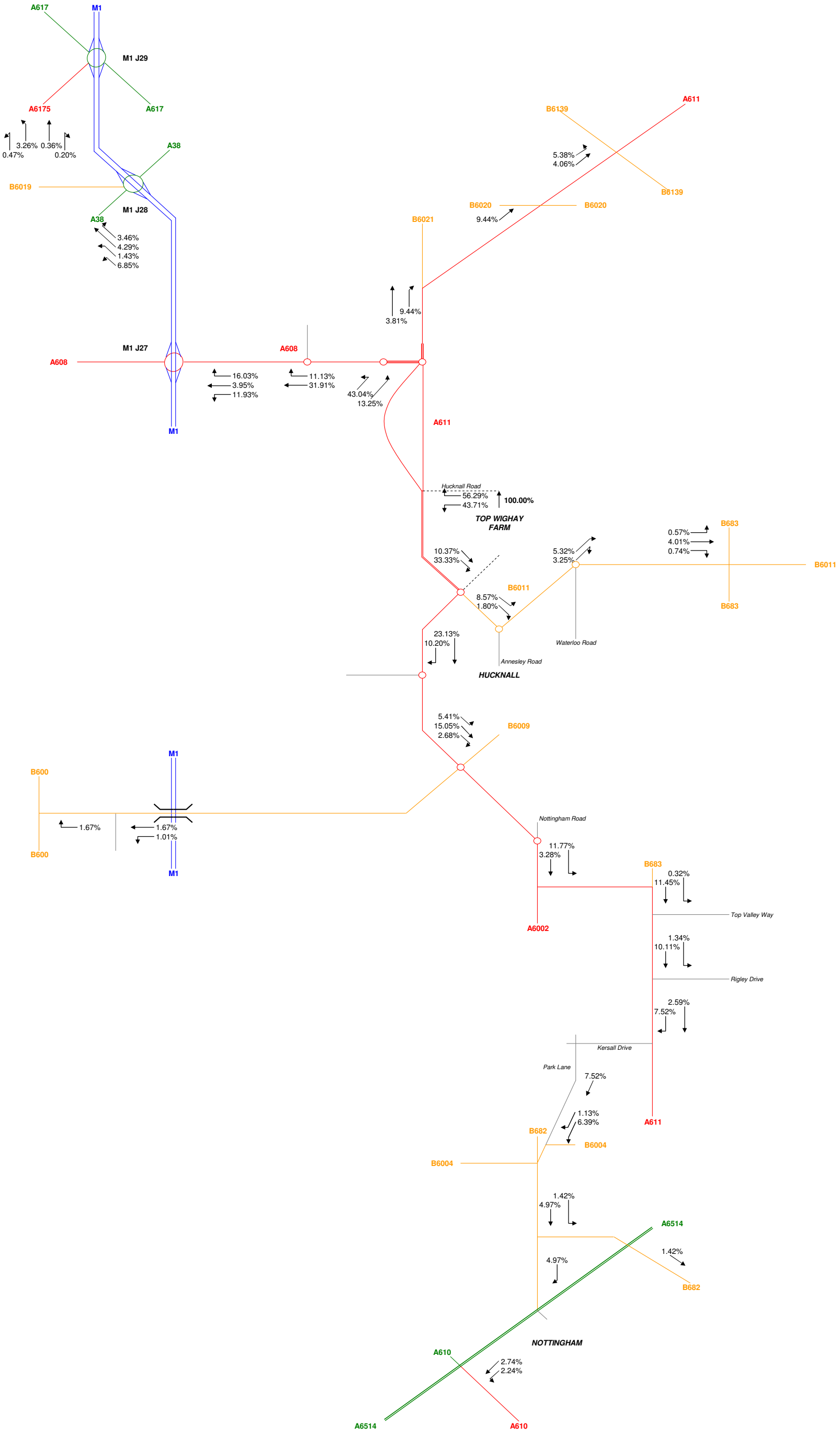
## Scenario 1c:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / Hucknall Road T-junction
**Direction =** Inbound



## Scenario 1d:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / Hucknall Road T-junction
**Direction =** Outbound



Date: 1 December 2011
Our ref: 35457 & 38272
Your ref:

Nick Crouch
Nottinghamshire County Council

Consultation Service
Hornbeam House
Electra Way
Crewe Business Park
CREWE
CW1 6GJ

T: 0300 060 3900

**BY EMAIL ONLY**

Dear Nick,

**Greater Nottingham Aligned Core Strategy – Proposed Top Wighay Allocation**
**Assessment of potential noise and air pollution impacts on breeding nightjar and woodlark**

Thank you for consulting Natural England in relation to the above proposal. Your correspondence was received by email on 10 October 2011.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the bene□t of present and future generations, thereby contributing to sustainable development.

We have considered the information in relation to Natural England's interests but our comments are focused on the following matters:

We are pleased the Authority have chosen to adopt a 'risk based approach', as advocated in our Advice Note (July 2011), in order to future proof the Greater Nottingham Aligned Core Strategy. This has involved considering the potential impacts on breeding nightjar and woodlark as a result of land allocations included in the forward plan . We believe this represents good planning practice.

We acknowledge receipt of the noise and air pollution impact assessments that have been undertaken which we believe have been done in accordance with acceptable methodology and appear to be robust.

**Noise Impact Assessment**

We note the noise impact assessment has followed the methodology within the Highways Agency's Design Manual for Roads and Bridges (HD213/11).

The potential e□ects on fauna are discussed within Annex 5 of HD213/11 . At paragraph A5.20 it states "*the effects of traffic noise showed an increasing impact with increasing noise levels above about 45 dB LAeq*".

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Indicative baseline noise level is currently estimated between 76.3 – 77.3 dB(A).

The assessment has predicted the change in noise of between 0.1 – 0.6 dB at the receptor sites and according to the HA guidance for this level of change the magnitude of impact is negligible.

**Air pollution impact assessment**

We acknowledge receipt of the final air quality information which we received by email on 2 November 2011. We thank the consultants for providing this additional data which has provided calculations of the N deposition Process Contribution (PC) in terms of Critical Loads (CLo) for the different habitat types, which is consistent with the format Natural England use to assess the potential impacts of air pollution on ecological habitats.

The results of the assessment have predicted a PC of 0.001 N/ha/kg which represents;
Conifer Plantation - 0.01 – 0.02 % of CLo
Lower Heathland – 0.005 – 0.01% of CLo

Natural England consider that where the process contribution to deposition is less than 1% of the critical load, the emission is unlikely to have a significant effect.

**Conclusion**

Both the air pollution and noise impact assessments have concluded no significant effect.

On the issue of the possibility of a future SPA, Natural England can only advise that it is for the Council to take a risk based approach when considering the effects of the plan, and it is hoped that the information Natural England has been able to give is of some assistance to the Council in this regard. Unfortunately, whilst understanding the difficulty local planning authorities face with regard to how they should consider forward planning and development management applications within the Sherwood Forest area, Natural England is unable to support or object to proposals in terms of their potential effects upon an SPA that has not yet been formally proposed.

We refer you once again to the Advice Note which states Local Planning Authorities should seek to satisfy themselves that forward plans and planning applications contain sufficient objective information to ensure that all potential impacts on the breeding nightjar and woodlark populations have been adequately avoided or minimised as far as is possible using appropriate measures and safeguards.

In line with Natural England's Advice Note we acknowledge that Nottinghamshire County Council has obtained appropriate information to consider the potential impacts of the plan on breeding nightjar and woodlark at this strategic level based on the level of information available for the proposed Top Wighay allocation. None the less we recommend any subsequent development proposals coming forward should be encouraged to include mitigation measures to reduce the potential adverse effects on breeding nightjar and woodlark as far as possible.

For any correspondence or queries relating to this consultation only, please contact Liz Newman at the Nottingham Office on 0300 060 0789/ 07900 608387. For all other correspondence, please contact the address above.

Yours sincerely,

E Newman

Elizabeth Newman

Lead Adviser
Land Use Operations Team
Elizabeth.newman@naturalengland.org.uk

# A Screening Assessment of Additional Nitrogen Deposition from the Development of 500 to 1,500 Houses at Top Wighay Farm, Hucknall on the Proposed Sherwood Forest Special Protection Area (SPA) for Birds and the Integrity of the Habitat for Woodlark and Nightjar

**By Prof Neil Humphries, Dr David Deakin & Jonathan Gorstige**

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Issue No 2 / 13th January 2012

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# A Screening Assessment of Additional Nitrogen Deposition from the Development of 500 to 1,500 Houses at Top Wighay Farm, Hucknall on the Proposed Sherwood Forest Special Protection Area (SPA) for Birds and the Integrity of the Habitat for Woodlark and Nightjar

**By Prof Neil Humphries, Dr David Deakin & Jonathan Gorstige**

## 1 Background

The proposed development site at Top Wighay Farm is located to the north of the urban conurbation of Hucknall and sits between the A611 to the west, the Mansfield-Nottingham railway line to the east and the B6011 to the south.

The 27ha site is owned by Nottinghamshire County Council and is strategically important for Gedling Borough Council to meet the Borough's housing needs (Top Wighay Farm, Hucknall, Nottinghamshire Development Brief December 2008). The development would comprise of about 500 homes (18ha), a business area (6ha), both with road access from the A611 to the west, and green infrastructure and land seta side for nature conservation. The site also has the potential to accommodate further housing up to a total of 1,500 homes.

Natural England has advised the Local Authorities that whilst the Sherwood Forest area supports substantial populations of woodlark and nightjar, it had not yet advised the Secretary of State on any selection of any part as a Special Protection Area (SPA). As such the Habitats Regulations 2010 do not apply (see Natural England advice Note 28th June 2010, East Midlands Region), however, Natural England recommends that the Local Authorities proactively adopt a risk-based approach in any planning consent decisions taken in order to satisfy subsequent statutory reviews of consents should a SPA be proposed.

Both Natural England and the RSPB have during the course of the recent Rufford Energy Recovery Facility Inquiry indicated specific 'core' nightjar and woodlark areas that might be designated as a SPA and a 5km buffer boundary within which developments should be screened for their potential direct and indirect effects (Figure 1).

The Top Wighay Farm site is well within the RSPB 5km buffer boundary and lies within 0.5km of a Natural England 'indicative core area' at Park Forest for nightjar and/or woodlark. This lies to the west of the A611 with a RSPB 'important bird area' (Freckland Wood) to the north (Figure 1).

Natural England has identified a number of potential adverse impacts on the SPA by developments such as proposed at Top Wighay Farm. Specifically in respect of the last bullet point, DTA in their Habitats Regulations Appraisal Scoping for Further Assessment (September 2010) concluded that there could be a significant potential impact of nitrogen deposition (acting as a fertiliser and increasing plant growth, thus

degrading woodlark and nightjar breeding habitat) at Park Forest from the development of Top Wighay Farm. They recommended that modelling and sampling should be undertaken to assess the implications of the development.

Nottinghamshire County Council appointed URS Infrastructure & Environment UK Ltd in February 2011 to assess the potential impact of deposition from the additional traffic created by the development at Top Wighay Farm. In the absence of information at the present time relating to other developments, the assessment is as a stand alone development and not in combination with any others.

This report sets out the methods used, the results and outcomes, and incorporates the outcomes of a meeting (dated 22nd June 2011) with Natural England (NE) and Nottinghamshire Wildlife Trust, and the written response of Natural England dated 27th July 2011.

## 2 Methodology and Results

The methodology utilised for the Top Wighay Farm Development is based on the Annex F – Assessment of Designated Sites in the Highways Agency Design Manual for Roads and Bridges (DMRB), Volume 11 Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 1, HA207/07 Air Quality, May 2007. The HA207/07 Annex F approach was agreed with statutory bodies, such as the Joint Nature Conservation Committee (JNCC) and Natural England to assess road emissions at sensitive ecosystem sites. There is no other appropriate Environment Agency (EA) approach. This includes the EA H1 air quality guidance document (Environment Agency, 2010, Annex f) which focuses on large industrial and power sector point source emissions only and not road traffic emissions.

The methodology includes 8 steps as listed below (although not all steps are required if initial steps identify no likely significant effects):

- Step 1: Identify Sensitive Sites (Sections 2.1, 2.2 and 2.3)
- Step 2: Obtain total average N deposition for 5km grid square (Section 3.2)
- Step 3: Obtain background $NO_2$ and $NO_x$ concentrations
- Step 4: Calculate $NO_2$ Concentrations in a transect near the road
- Step 5: Estimate Dry Deposition of $NO_2$ and road increment $NO_2$ dry deposition
- Step 6: Determine road increment $NO_2$ dry deposition
- Steps 7 and 8: Compare with critical loads and reporting

### 2.1 Development Traffic Screening

The Development Brief for Top Wighay Farm sets out the potential to generate traffic and increase nitrogen deposition by the traffic from:

- 500 Dwellings – population 1250 people.
- 34,000 $m^2$ business space – business (B1) and small warehousing uses (B8).
- A 1.4 ha primary school site including playing fields.

Other land-use types were also identified including retail, healthcare and leisure. However, there was insufficient data to quantify the potential traffic associated with these and other land-uses (eg an energy centre).

In the absence of specific traffic data for the development, the TRICS data base (http://www.trics.org/default.cfm) was used to assess that likely to be generated: this was estimated to be 6,200 Annual Average Weekday Traffic (AAWT), including 140 heavy goods vehicles (HGVs). The increase in traffic volume due to the development is over the 1,000 Annual Average Daily Traffic (AADT) change above which significant changes in air quality could be expected along a route (Highways Agency, 2007). However, not all the additional traffic would be expected to use the same route and would be expected to be distributed spatially.

The changes in spatial distribution in traffic over 1,000 AADT was undertaken using the Highways Agency approved ODYSSEUS model (Anderton, 2008) and as deployed by the Agency in the form of their PENELOPE Model. The ODYSSEUS / PENELOPE model is based on the National Census Ward-level journey-to-work data in conjunction with a link-based 'gravity model' driven by travel cost. In this model trips are distributed through one entry/exit point at a development. In this case there are two potential entry exit points: A611/B6011 entrance and A611/Hucknall Road T Junction. Two sets of predictions have therefore been prepared for this development.

Gravity models use a function of travel time and distance to provide a relative weighting reflecting the cost of travelling between each competing origin-destination pair. These weightings are used to provide factors to enable the predicted total travel demand to be distributed proportionately. The results give calculated Ward-level travel demands and estimates of link flows on the most attractive routes between the development site and surrounding Wards. The results of the gravity model are expressed as a percentage of outgoing traffic and incoming traffic along the routes around the proposed development are presented in the Appendix 1, 1a-d, 2a-d, 3a-d).

The assessment, using the same approach, was repeated for the scenario of larger housing developments comprising 1,000 and 1,500 dwellings, but keeping the same development profile for the business space.

## 2.2 Identification of SPA Receptors

Nitrogen dioxide from road sources is indistinguishable from background pollutant concentrations beyond 200m (Highways Agency, 2007) and hence significant changes in nitrogen deposition from road contributions of nitrogen dioxide would also not be expected beyond 200m. In this respect only the pSPA (woodlark and nightjar habitat) within 200m of roads receiving the additional traffic will be potentially affected and need be considered. Hence, it is possible to assess the implication of the development of Top Wighay Farm by mapping the overlap of the 200m deposition corridor over the indicative SPA boundaries.

Three potential receptors were identified along the A611 Hucknall to Mansfield (Derby) Road (Figures 2 & 3), these were:

- Wighay Wood (eastern outlier of Park Forest) juxtaposed to the A611

- Robin Hood Hills (western point of part of Kirby Woods/Nottinghamshire Golf Course) set 170m or more back from A611
- Stone Hills Farm juxtaposed to the A611

## 2.3 Screening SPA Receptors

In this section the need to consider any of the SPA receptors further is assessed. The assessment is based on aerial photography and a site visit to Wighay Wood alongside the A611.

Wighay Wood

The Wighay Wood is part of Park Forest (an indicative core area for nightjar and woodlark) but it is broad leaved woodland and is not habitat of the woodlark or nightjar. Suitable habitat occurs much further afield within the Park Forest and well beyond the 200m road corridor. It is concluded that there is no potential adverse impact on the particular core area from additional traffic generated by the development of the Top Wighay Farm site.

Robin Hood Hills

The Robin Hood Hills indicative area appears to be in part conifer habitat. The intersection with the core area lies within 10-30m of the outer fringe of the 200m corridor, just clipping the westernmost promontory. This is not likely to be significant in habitat terms for woodlark and nightjar.

Stone Hills Farm

A conifer block and possibly some open felled areas at the Stone Hills Farm indicative core area lie within the 200m corridor along the A611 near to Mansfield and potentially might be affected by additional deposition if more than a 1,000 AADT increase in traffic was associated with the proposed Top Wighay Farm development along this section of the A611. However, the gravity model results for inbound and outbound trips indicates that the increase in AADT anticipated with the proposed development is well below the 1,000 AADT threshold (with predicted flows of 280, 398, & 517 for 500, 1,000 & 1,500 homes respectively (Table 1)).

**Table 1: Traffic Generation along the A611 north of the B6139 adjacent to Stone Hills Farm**

**Table 1a: 500 Homes**

| Scenario ** | Entrance/Exit | Direction | Percentage flow A611 north of B6139 | AADT Flow A611 north of B6139 |
|---|---|---|---|---|
| Scenario 1a | A611/B6011 entrance | In | 3.22 | 99 |
| Scenario 1b | A611/B6011 entrance | Out | 2.08 | 65 |
| Scenario 1c | A611/Hucknall Road T Junction | In | 4.97 | 153 |
| Scenario 1d | A611/Hucknall Road T Junction | Out | 4.06 | 127 |
| | | | **Total Worst Case (Scenario 1c & 1d)** | **280** |

**Table 1b: 1,000 Homes**

| Scenario ** | Entrance/Exit | Direction | Percentage flow A611 north of B6139 | AADT Flow A611 north of B6139 |
|---|---|---|---|---|
| Scenario 1a | A611/B6011 entrance | In | 3.22 | 141 |
| Scenario 1b | A611/B6011 entrance | Out | 2.08 | 93 |
| Scenario 1c | A611/Hucknall Road T Junction | In | 4.97 | 217 |
| Scenario 1d | A611/Hucknall Road T Junction | Out | 4.06 | 181 |
| | | | **Total Worst Case (Scenario 1c & 1d)** | **398** |

**Table 1c: 1,500 Homes**

| Scenario ** | Entrance/Exit | Direction | Percentage flow A611 north of B6139 | AADT Flow A611 north of B6139 |
|---|---|---|---|---|
| Scenario 1a | A611/B6011 entrance | In | 3.22 | 182 |
| Scenario 1b | A611/B6011 entrance | Out | 2.08 | 121 |

| Scenario ** | Entrance/Exit | Direction | Percentage flow A611 north of B6139 | AADT Flow A611 north of B6139 |
|---|---|---|---|---|
| Scenario 1c | A611/Hucknall Road T Junction | In | 4.97 | 281 |
| Scenario 1d | A611/Hucknall Road T Junction | Out | 4.06 | 235 |
| | | | **Total Worst Case (Scenario 1c & 1d)** | **517** |

*** Note: Scenarios a and b are one set of flows calculated assuming all trips from the site are made through the A611/B6011 entrance/exit. Scenarios c and d are one set of flows calculated assuming all trips from the site are made through the A611/Hucknall Road T junction entrance/exit. This approach has been utilised as the traffic model distributes development flows via one entry/exit point.*

The gravity model results indicate that the greatest flows to and from the site are distributed along the A611, with around approximately 50% travelling in each direction, with a large percentage of traffic utilising the A608 and the M1 (Appendix 1). The draw of the M1 along with the dilution in traffic along the B-road network along the A611 is the reason why flows are reduced to levels well below the DMRB criteria at Stone Hills Farm. Therefore, no likely significant air quality impacts would be anticipated at this location and no further air quality assessment is required for Stone Hills Farm.

## 3 Assessment of Enrichment of Breeding Habitats

In accordance with the DMRB methodology (HA207/07) the absence of a significant change in traffic with the proposed Top Wighay Farm development means that no further air quality assessment is required for Stone Hills Farm area. Therefore, no likely significant air quality effects are anticipated with the development. However, to put the potential deposition into context, the sections below have been provided concerning nitrogen loads and plant physiology.

### 3.1 Breeding Habitats

Woodlark habitat in the UK is typically short and open vegetation of clear felled forestry plantations and lowland heath (www.forestry.gov.uk/forestry/woodlark). Replanted clear felled areas remain suitable until the new trees are around 7 years old. Thereafter, the new plantations become too dense.

Nightjar habitat in the UK is similar to woodlark, but also extends to 'scrubby' habitat including older replanted stands of around 15 years old (www. forestry.gov.uk/forestry/nightjar).

### 3.2 Sensitivity of Habitats to Nitrogen Deposition

In circumstances where there is a deficiency in soil nitrogen, an input of nitrogen will usually result in enhanced plant growth, but only to a point where soil nitrogen reaches 'luxurious' levels and the concomitant tissue saturation is associated with no further growth and typically a depression of growth in response to additional inputs of nitrogen (Mengel & Kirkby, 1978).

Atmospheric nitrogen pollution in the UK has increased over the past 70 years whereby forestry productivity has increased to an extent that soil levels for forestry crops have reached luxurious levels with no further detectable growth responses to nitrogen inputs (Gundersen, 1999; Cannell, 2002). Where atmospheric deposition rates are greater than 10 – 20 kg N/ha/yr, folia nitrogen content (indicative of soil nitrogen status) for Scots pine, Norway spruce and Sitka spruce are above optimal levels and levels associated with imbalances in other nutrients and increased insect damage resulting in reduced growth (Kennedy, 2003). Slightly lower threshold deposition rates of 5 -15 kg N/ha/yr are currently cited by the Air Pollution Information System (APIS) partnership on their website (www.apis.ac.uk/overview/issues/overview_Noordwijkerhout_text) as being the critical nitrogen loads for coniferous woodland whereby growth process and responses to nitrogen are disrupted.

Given the background levels for the Hucknall and Mansfield areas already exceed these critical levels (e.g. Total N Deposition Rate of 41.1 kg N $ha^{-1}$ $y^{-1}$)[1] it is reasonable to conclude that even if the DMRB screening criteria had been exceeded and significant additional inputs of nitrogen were predicted that these would have been unlikely to increase growth rates of replanted conifer crops. Therefore, the development at Top Wighay Farm would not have an adverse effect by further acceleration of tree growth and reducing the extent of suitable habitat for woodlark and nightjar.

The same principles apply to the herbaceous (e.g. bracken and grasses) and shrubby (e.g. bramble) ground flora that may regenerate following felling and cleared areas, and any open heath / heathy / short grassland areas. Some species groups such as the grasses may have a competitive advantage and predominate at luxury soil levels as is typical of lowland heath, rush and short grassland vegetation (where deposition is at or above the lower critical range of 10 – 20 kg N/ha/yr (www.apis.ac.uk/overview/issues/overview_Noordwijkerhout_text)). In addition, felled areas typically have significantly larger flushes of additional nitrogen released than deposited from roads over the first few years of clearance from the decomposition of the 'brash' (Ring, 1996).

The possibility that luxurious levels would not persist at a later date have also been considered as it is predicted that with the reduction in use of fossil fuels the background nitrogen deposition will decrease over coming years at a rate of around 2%/yr (Highways Agency, 2007). It is conceivable that over time the background will reduce to below the critical levels referred to above, although at 2%/year and with background deposition rates of 41.1 kg N/ha/year (2011) at Stone Hills Farm this situation would not be

[1] A total average N deposition value was obtained from the Air Pollution Information System (APIS) for National Grid Reference 453000, 357000. This is the closest available point to edge of Stone Hills Farm adjacent to the A611 (National Grid Reference: 453465, 357683). The three year 2006 to 2008 average N deposition from APIS was reduced by 2% per year, as advised in the DMRB guidance document to reflect 2011 rates of deposition.

anticipated until around 2050 (using the higher critical load of 20 kg N/ha/yr and assuming the anticipated 2% drop off rate extends beyond 2025).

## 4 Outcome

Based on the available information for the stand alone Top Wighay Farm development there will be no likely significant effects on the pSPA from additional nitrogen deposition from a scheme with 500, 1,000 or 1,500 dwellings. This is certain to be the case for both replanted tree crop and ground vegetation owing to the current background already exceeding their critical nitrogen load thresholds in this part of the UK and the relatively low amounts of traffic are anticipated to be generated along the A611.

The situation might change over the longer time frame as the background deposition reduces over the next 40 years and critical soil and tissue levels are no longer exceeded by the background deposition. However, given that the levels of traffic anticipated to be generated along the A611 are well below the levels requiring air quality assessment, no likely significant effects are anticipated, irrespective of the year of assessment.

Therefore, Top Wighay Farm as a stand alone development is assessed to be compliant with the Habitats Regulations (without mitigation) in respect of the pSPA and in the longer term. Even, if in time, it was decided there was a need for mitigation this could be achieved through standard habitat management.

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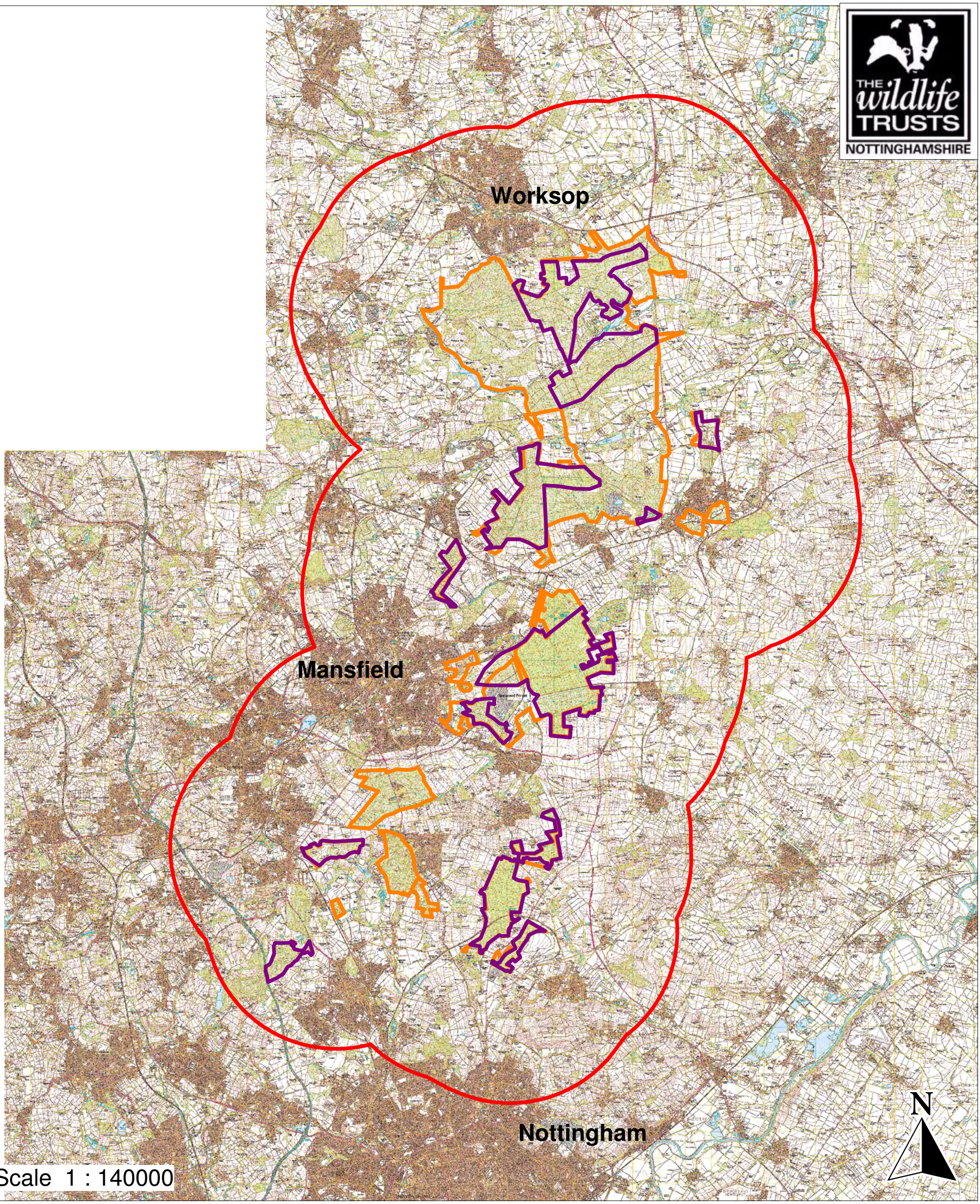
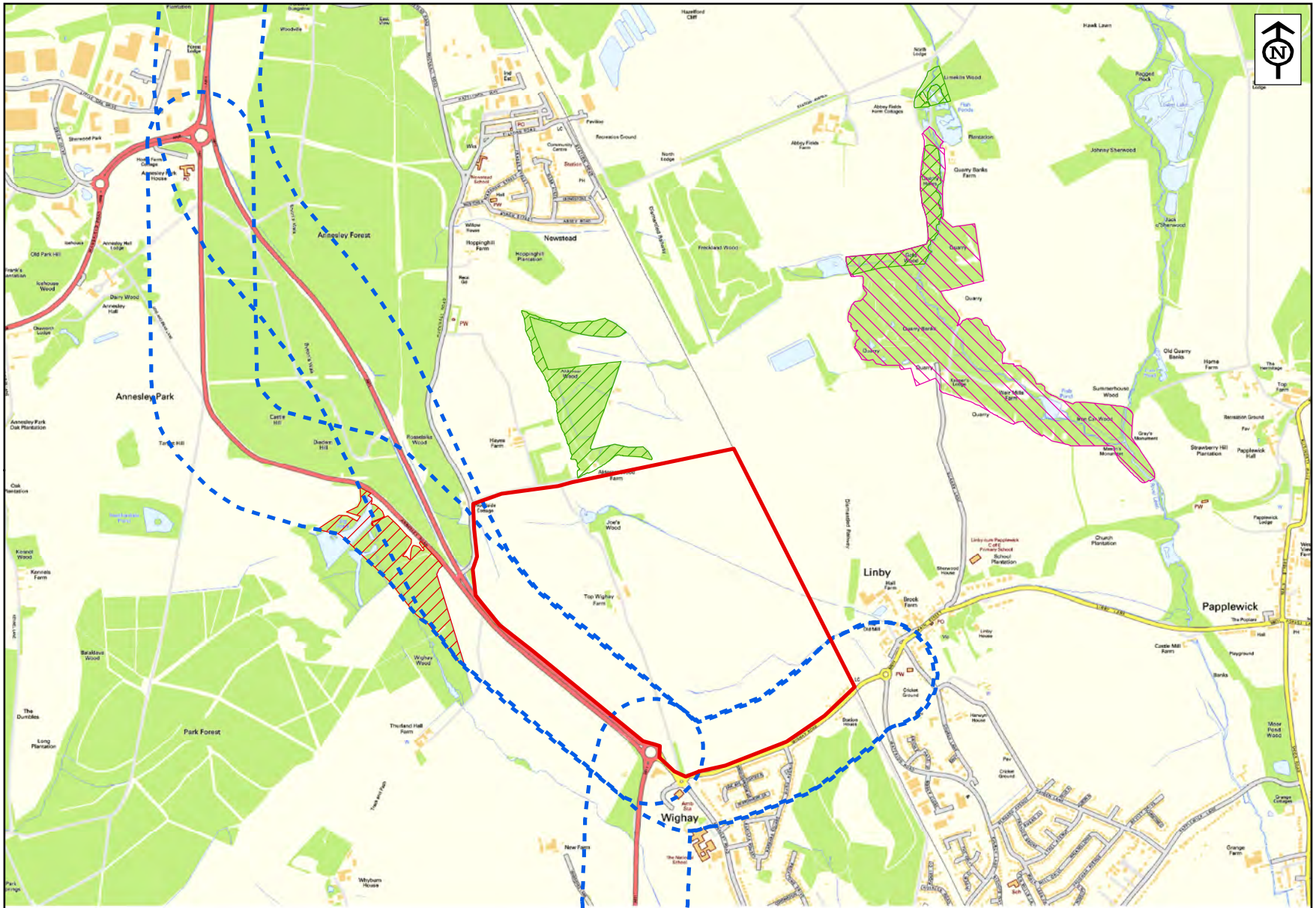
# FIGURES




Key

- RSPB IBA Boundary with 5Km buffer
- NE Indicative Core Area
- RSPB IBA Boundary

Plan 1 v2

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**Key:**

- Site Boundary
- 200m from Centre of Road
- SSSI
- Ancient Woodland
- NE Indicative Core Area
- Air Quality Receptor

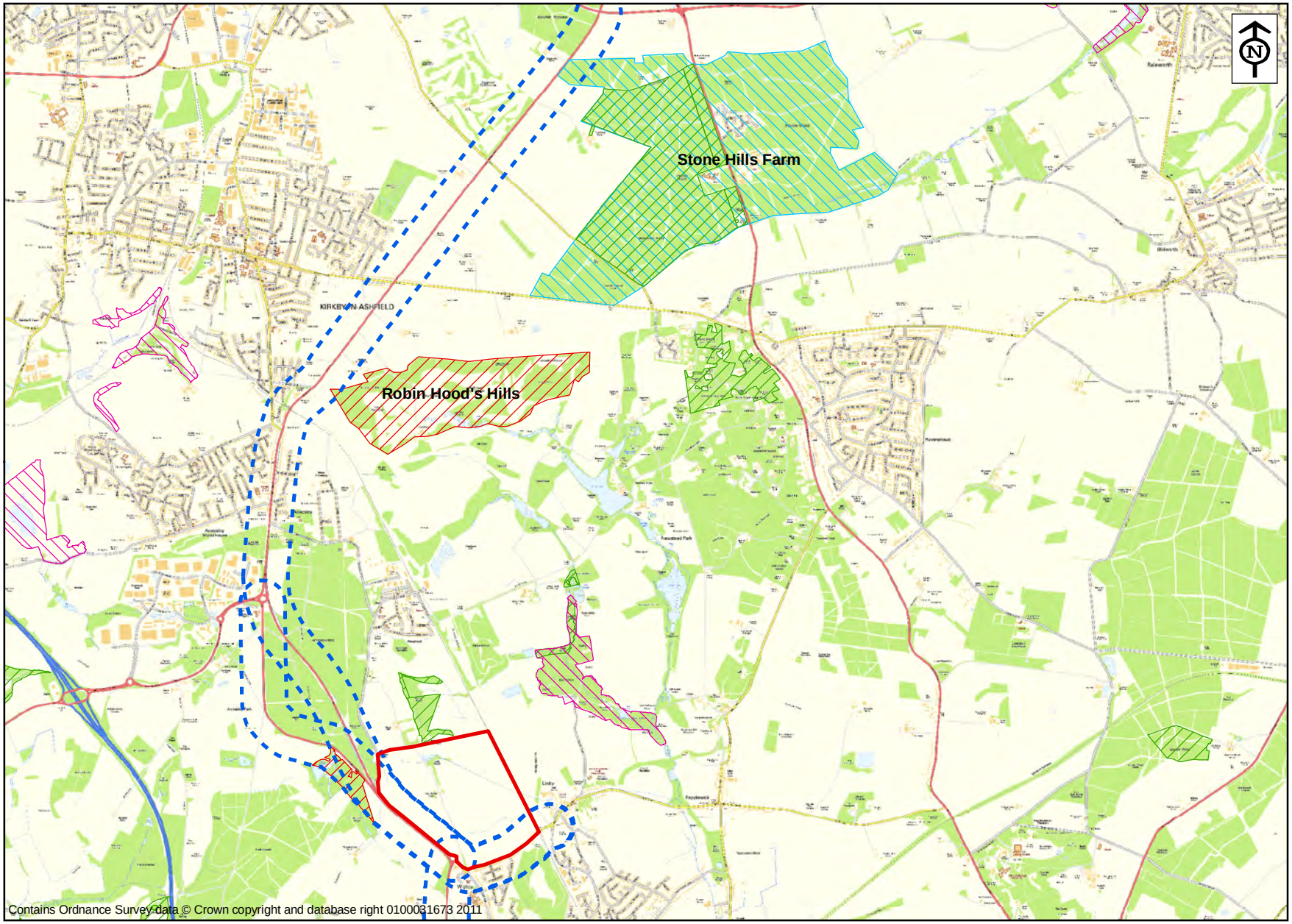
0 120 240 360 480

Metres

| | |
|---|---|
| Title | Constraints Plan |
| Project | Top Wighay Farm, Hucknall |
| Client | Nottingham County Council |

URS

| | | | |
|---|---|---|---|
| App'd: | Drawn: | Ch'kd: | Drg.Size: A3 |
| Version: 1 | | | Ref: 01/KC/LON |
| Scale: 1:21,500 | | | Job No: XXXXXXXX |
| Date: 05/04/2011 | | | **FIGURE 2** |






**Key:**

- Site Boundary
- 200m from Centre of Road
- SSSI
- Ancient Woodland
- RSPB IBA Boundary
- NE Indicative Core Area
- Air Quality Receptor

0 275 550 825 1,100

Metres

| | |
|---|---|
| Title | Constraints Plan - 2 |
| Project | Top Wighay Farm, Hucknall |
| Client | Nottingham County Council |

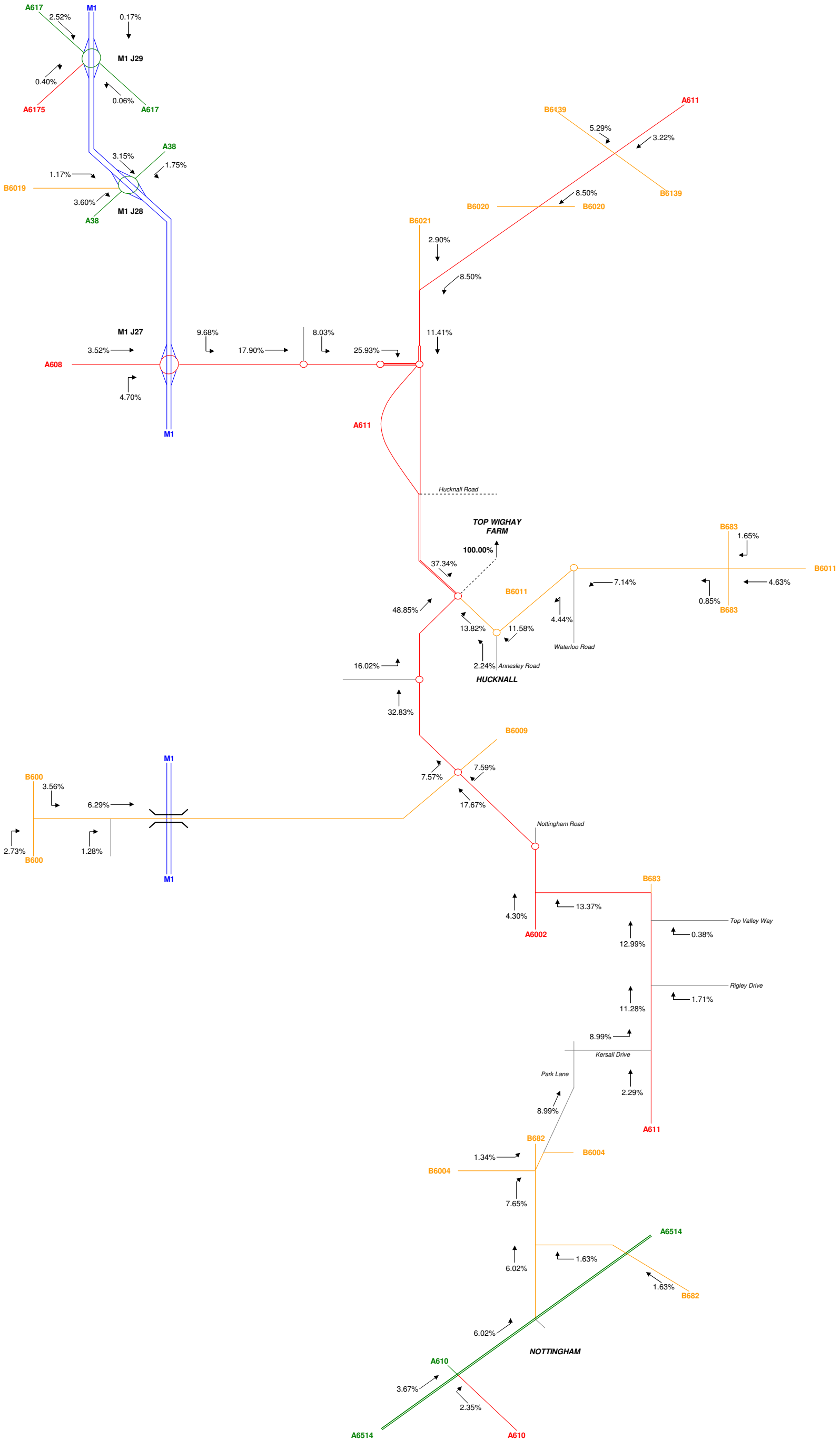
URS

| App'd: | Drawn: | Ch'kd: | Drg.Size: A3 |
|---|---|---|---|
| Version: 1 | | | Ref: 01/KC/LON |
| Scale: 1:50,000 | | | Job No: XXXXXXXX |
| Date: 05/04/2011 | | | FIGURE 3 |

# APPENDIX 1

## Scenario 1a:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / B6011 roundabout
**Direction =** Inbound



## Scenario 1b:

**Isochrone =** 30 minutes
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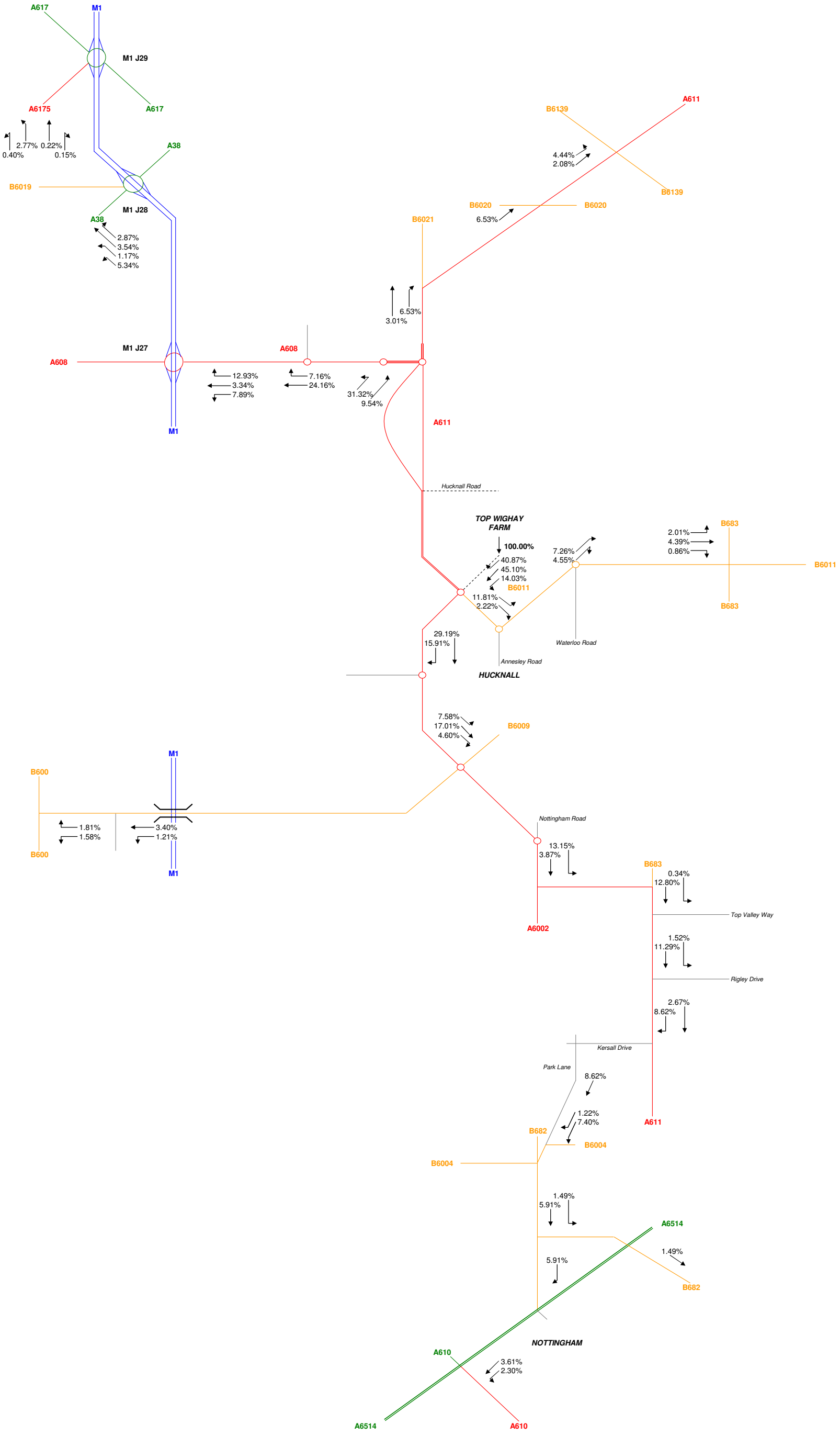
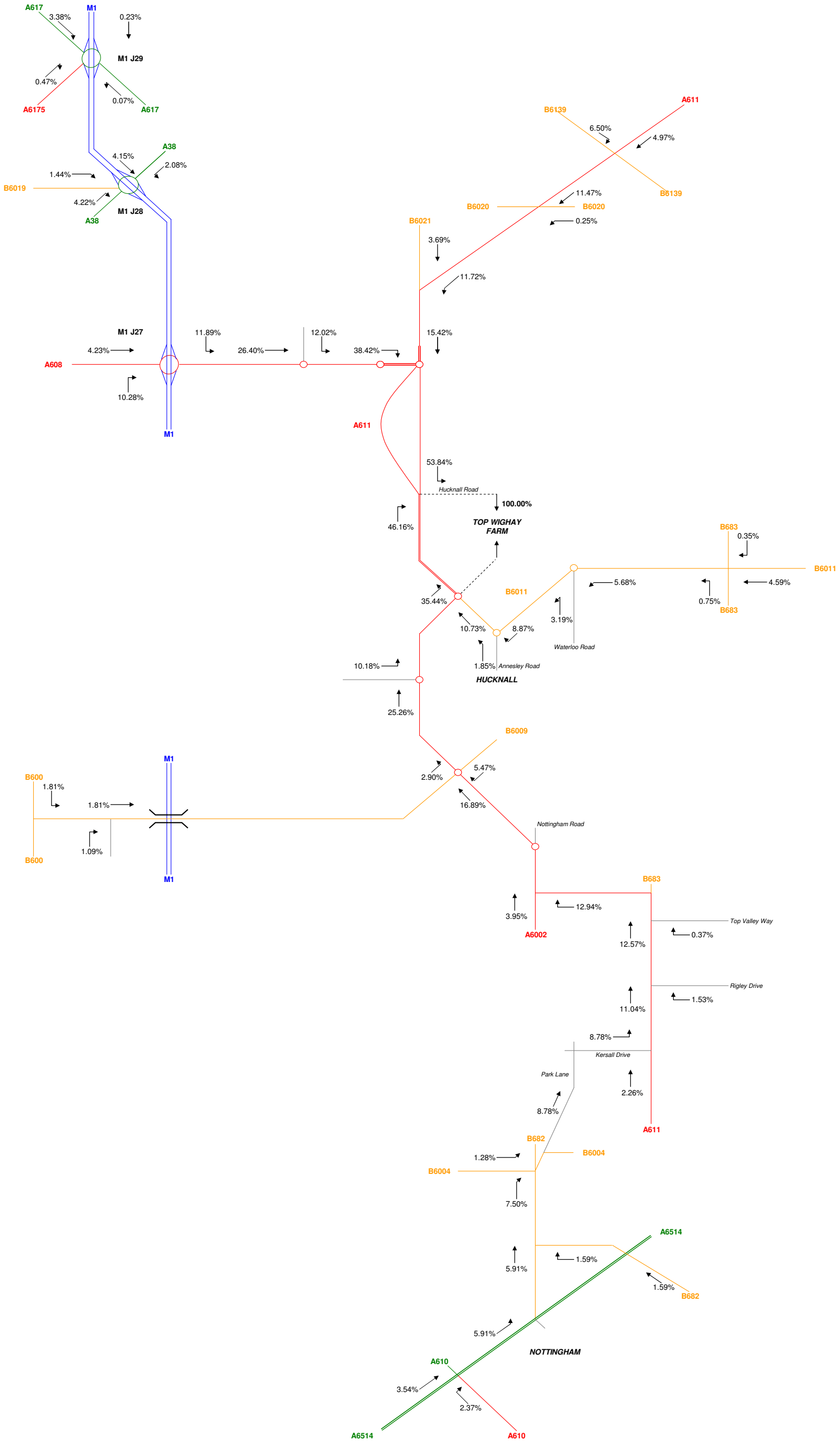
**Direction =** Outbound



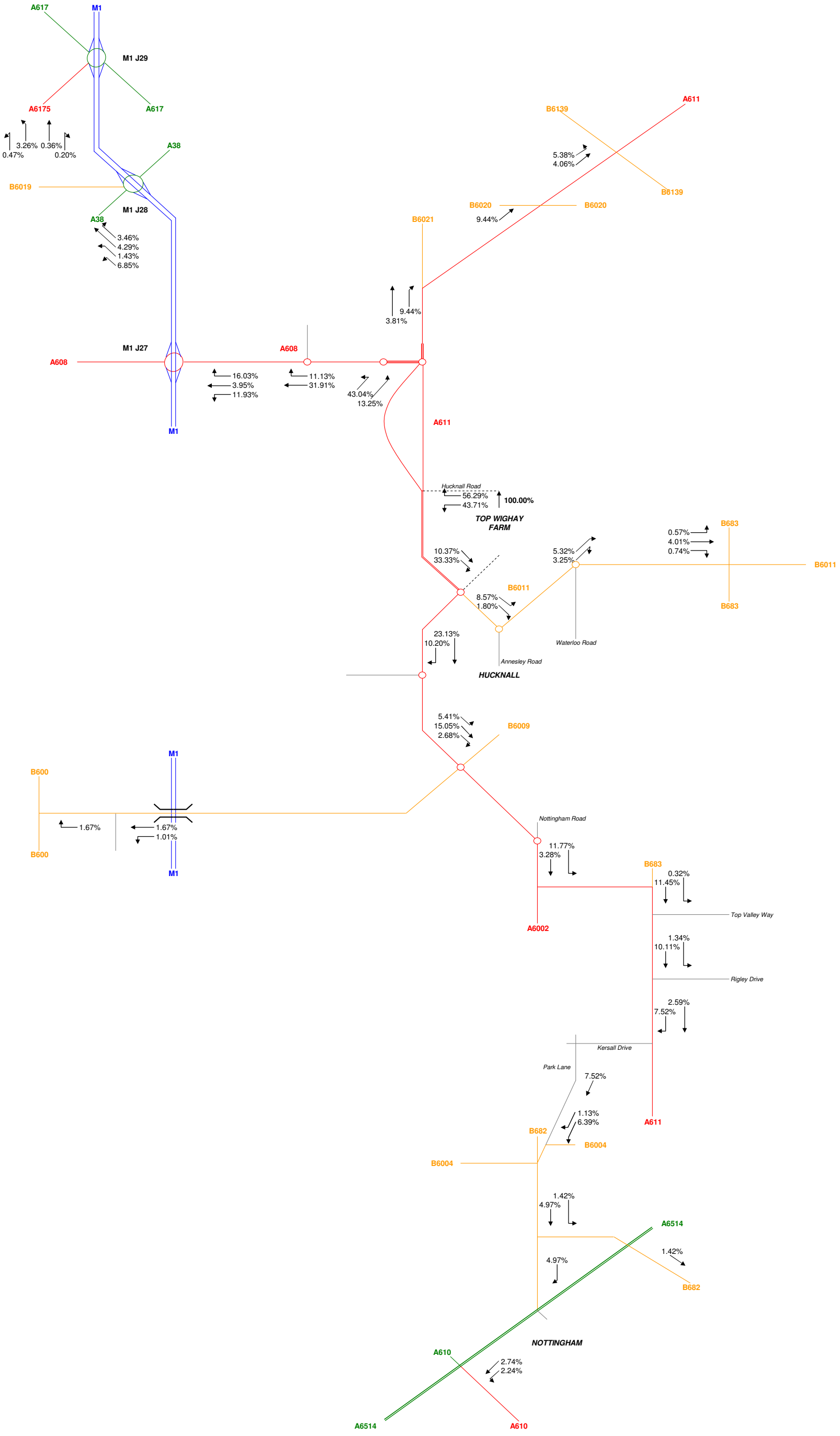
## Scenario 1c:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / Hucknall Road T-junction
**Direction =** Inbound



## Scenario 1d:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / Hucknall Road T-junction
**Direction =** Outbound



## Scenario 2a:

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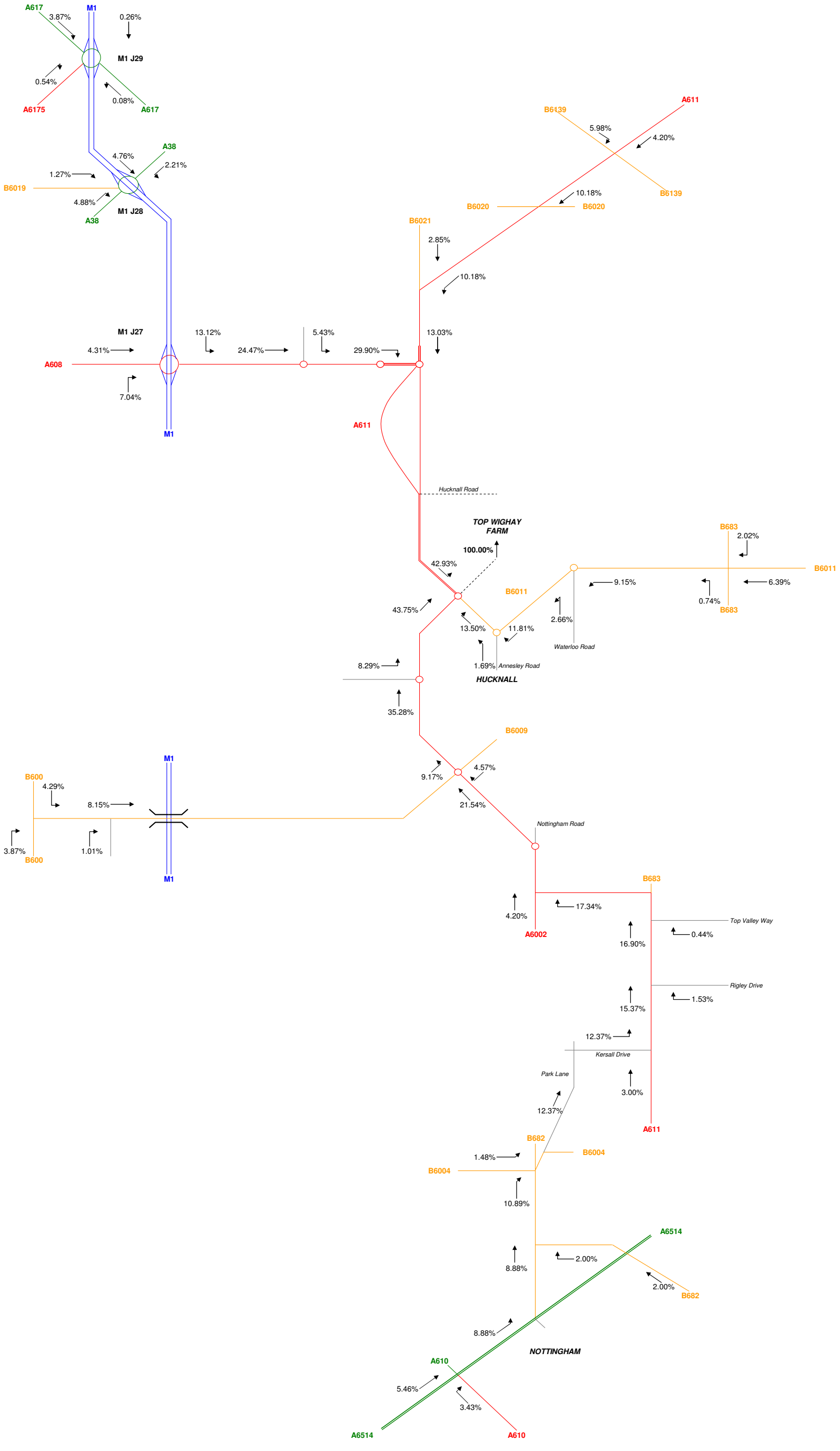
**Direction =** Inbound



## Scenario 2b:

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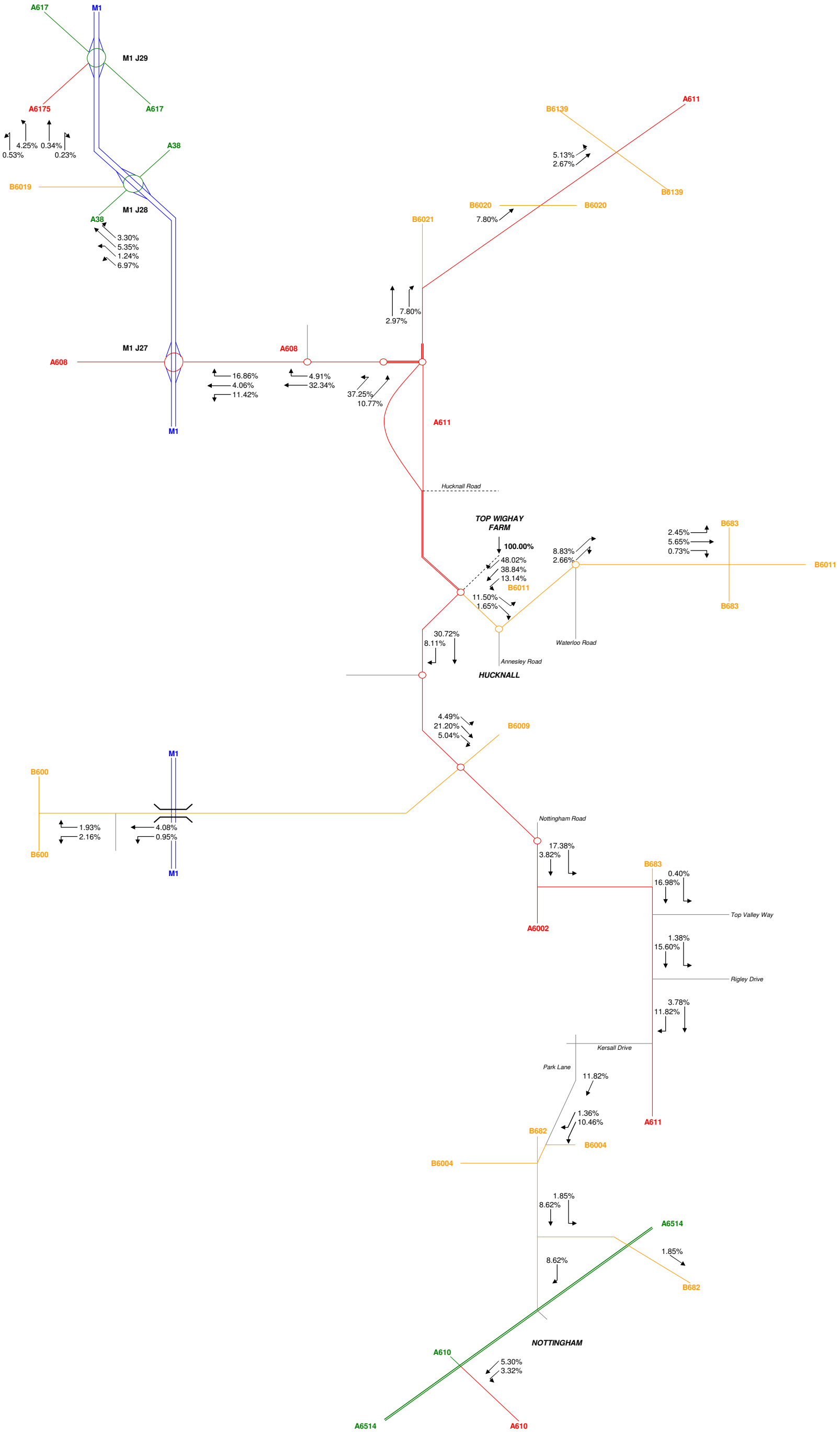

## Scenario 2c:

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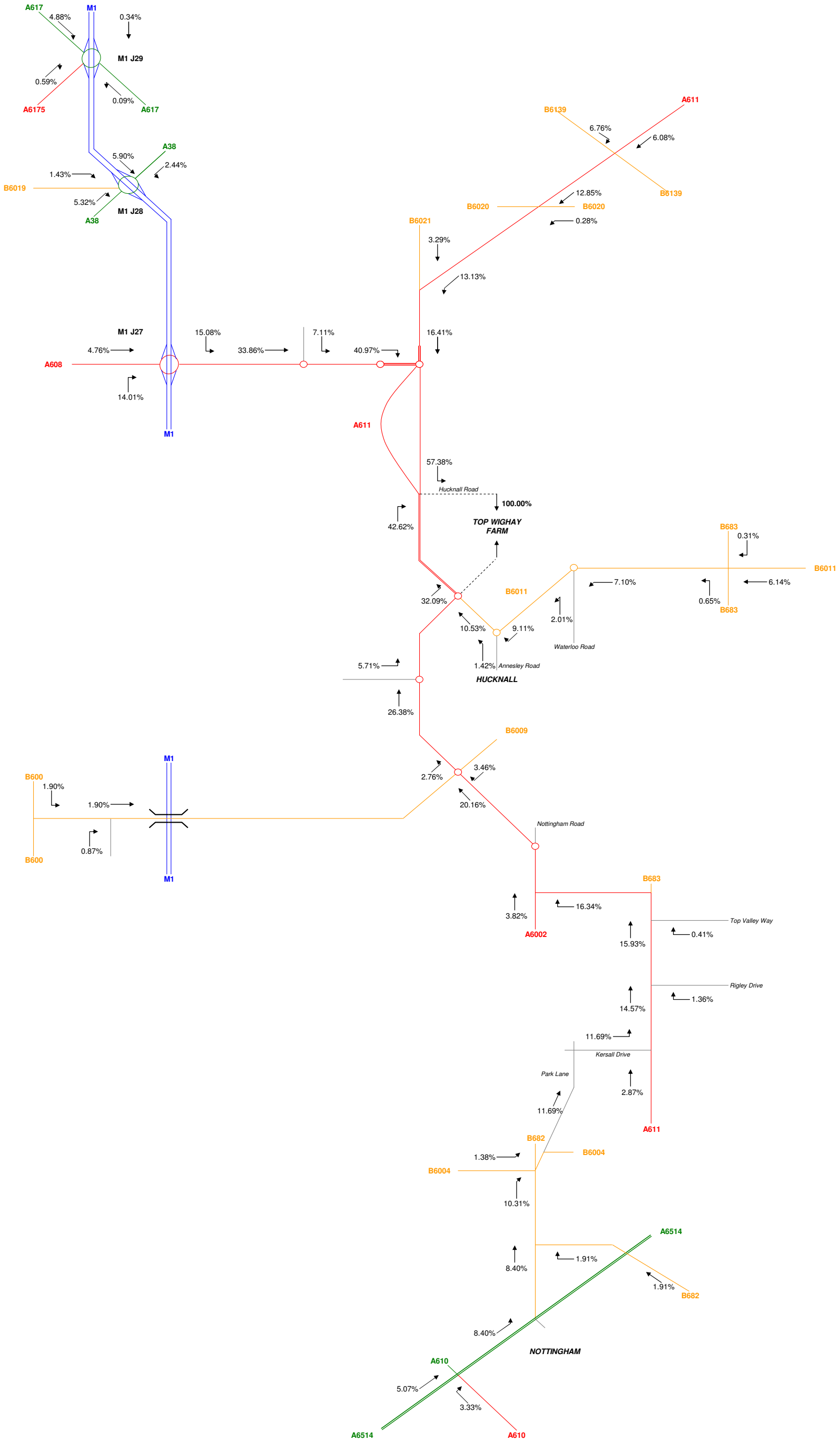

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**Gravity fn =** travel time$^{1.5}$
**Site access =** A611 / Hucknall Road T-junction
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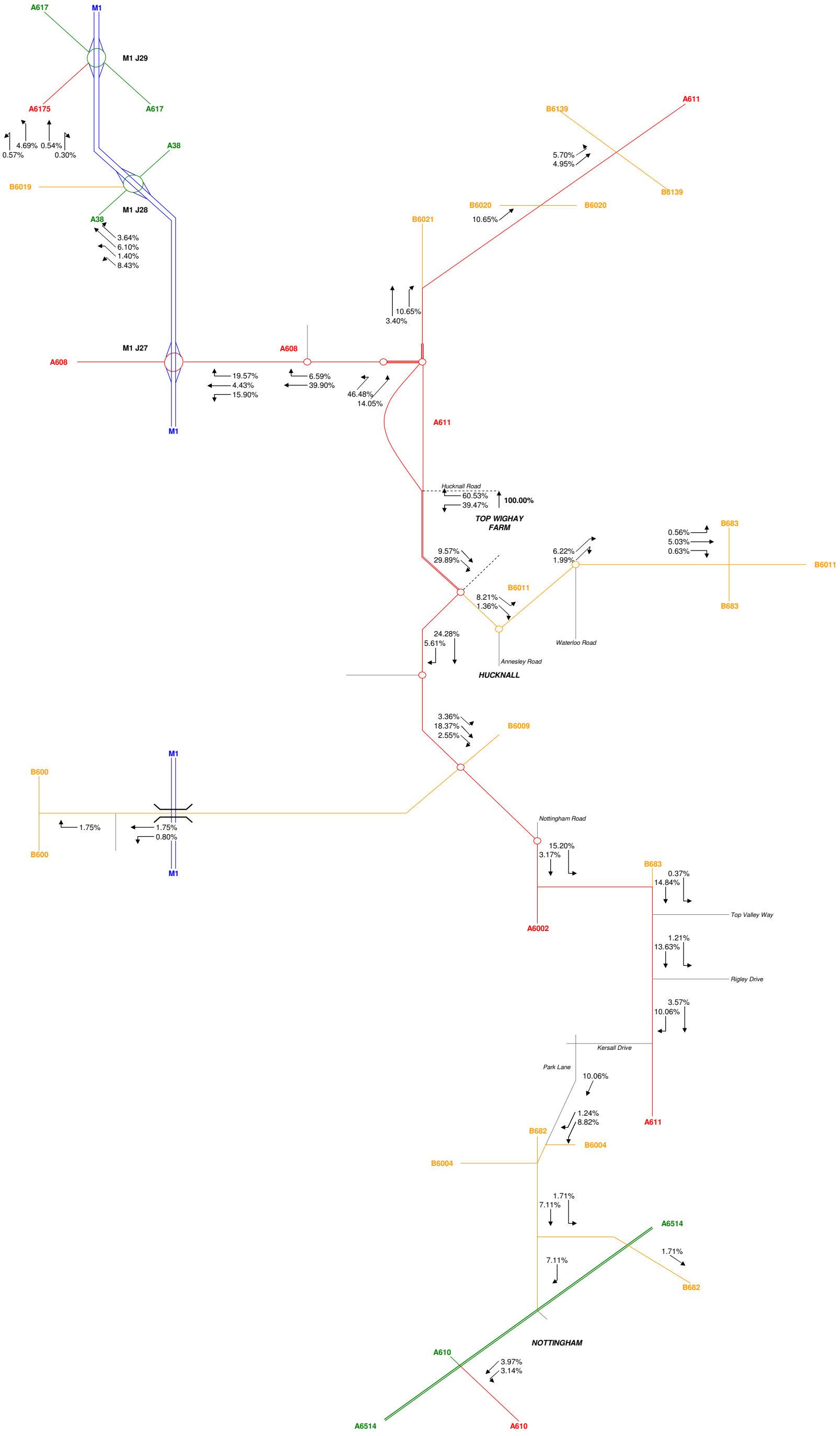
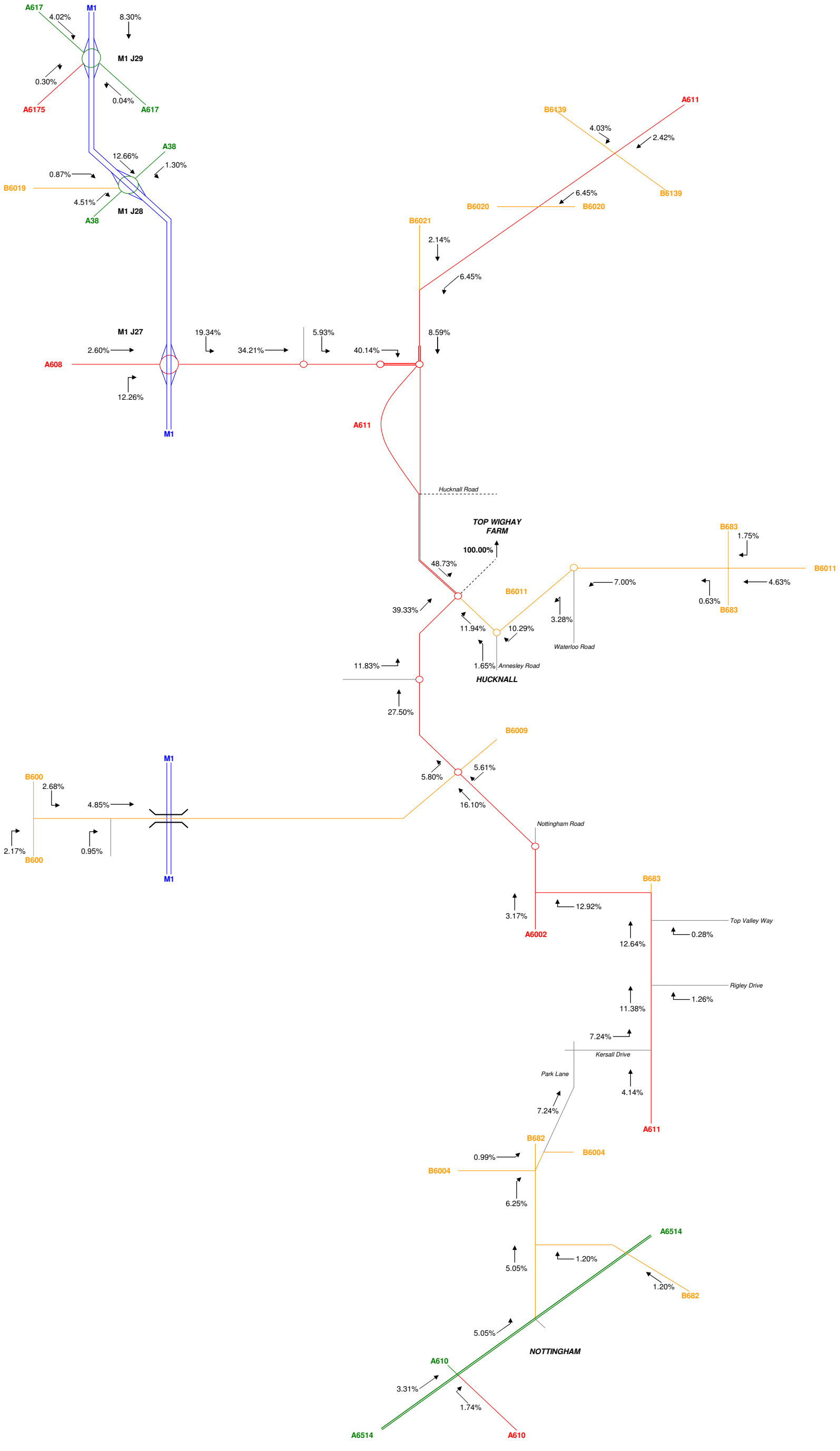


## Scenario 3a:

**Isochrone =** 60 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / B6011 roundabout
**Direction =** Inbound



## Scenario 3b:

**Isochrone =** 60 minutes
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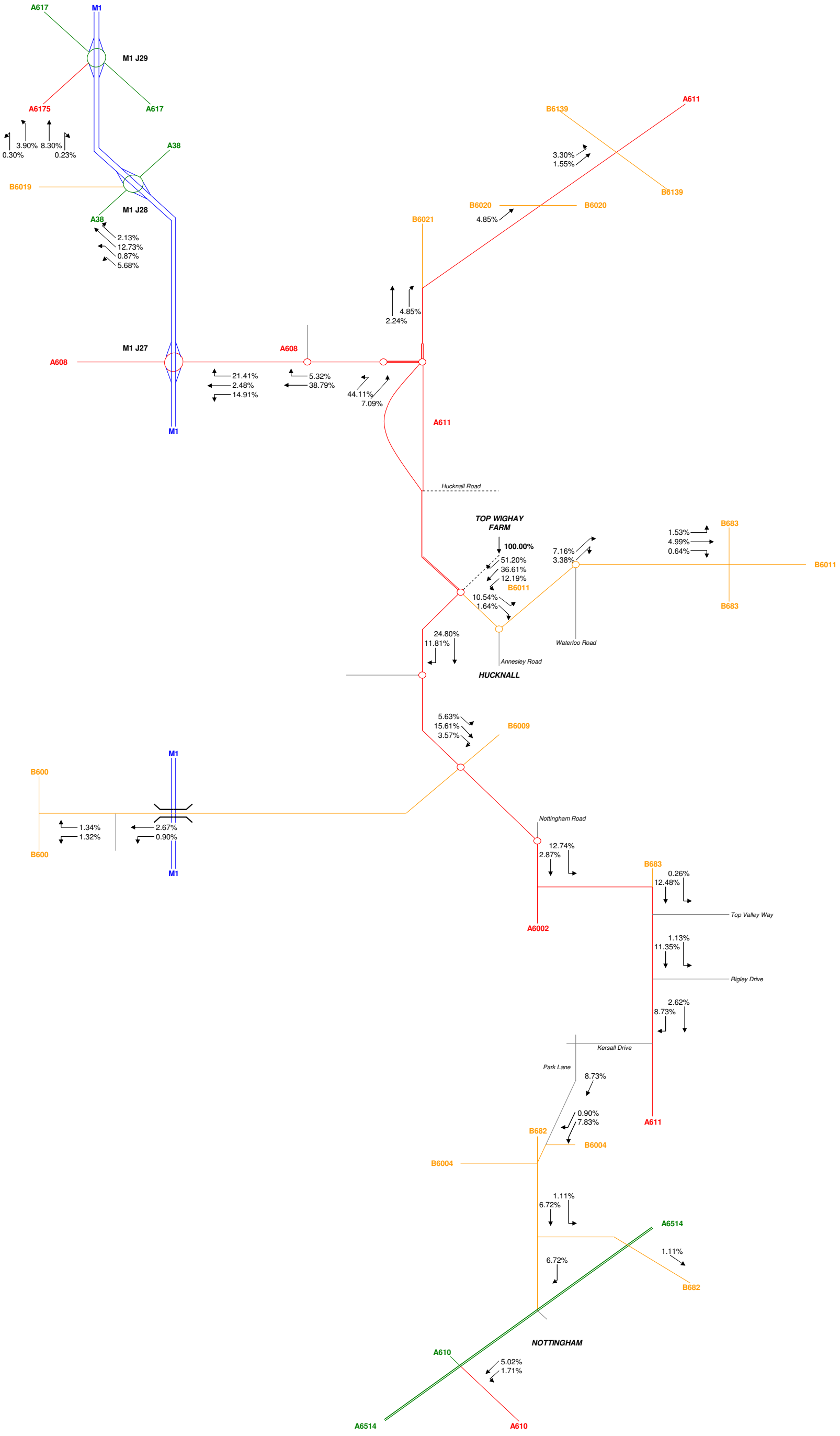
**Site access =** A611 / B6011 roundabout
**Direction =** Outbound



## Scenario 3c:

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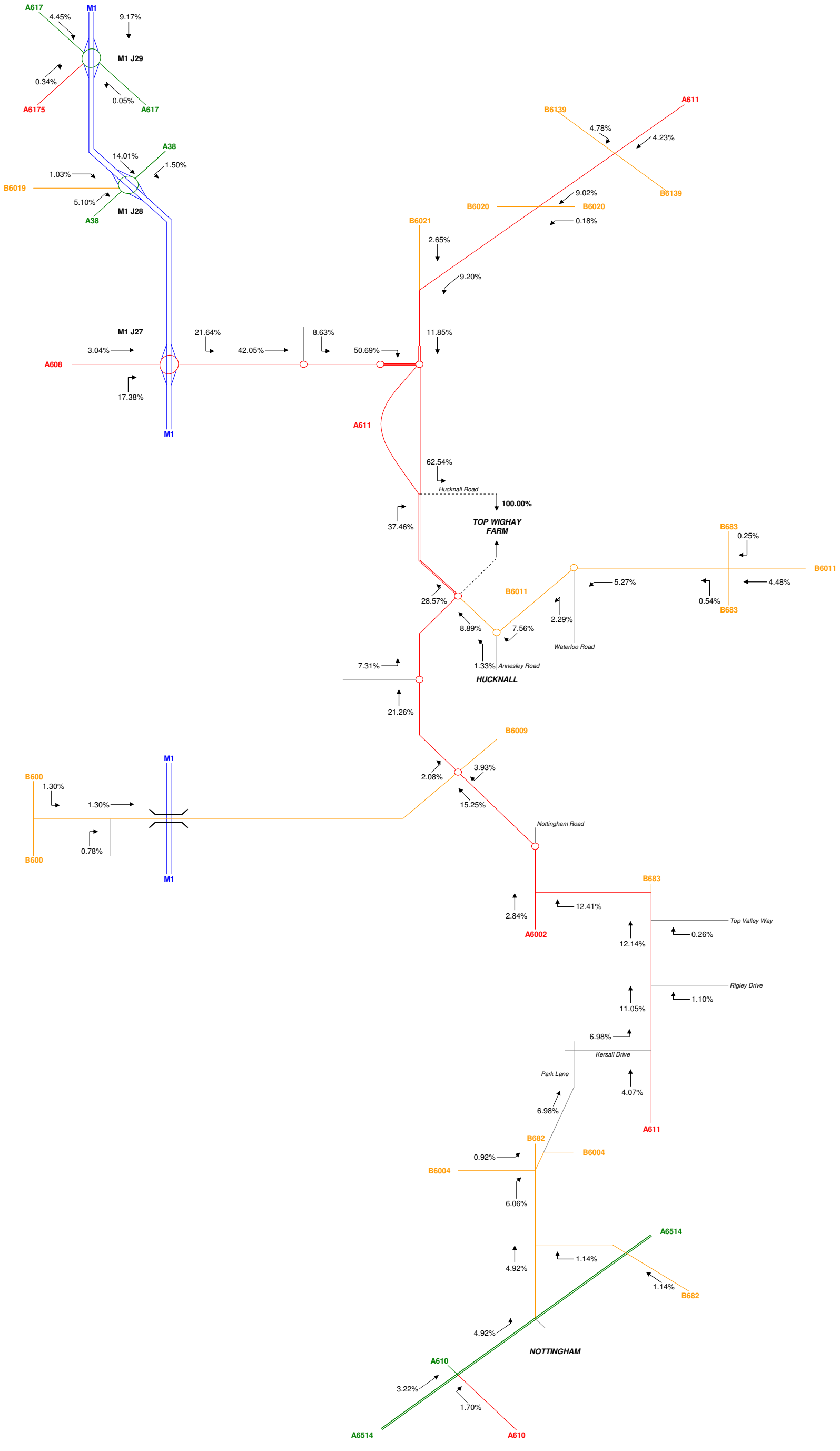

## Scenario 3d:

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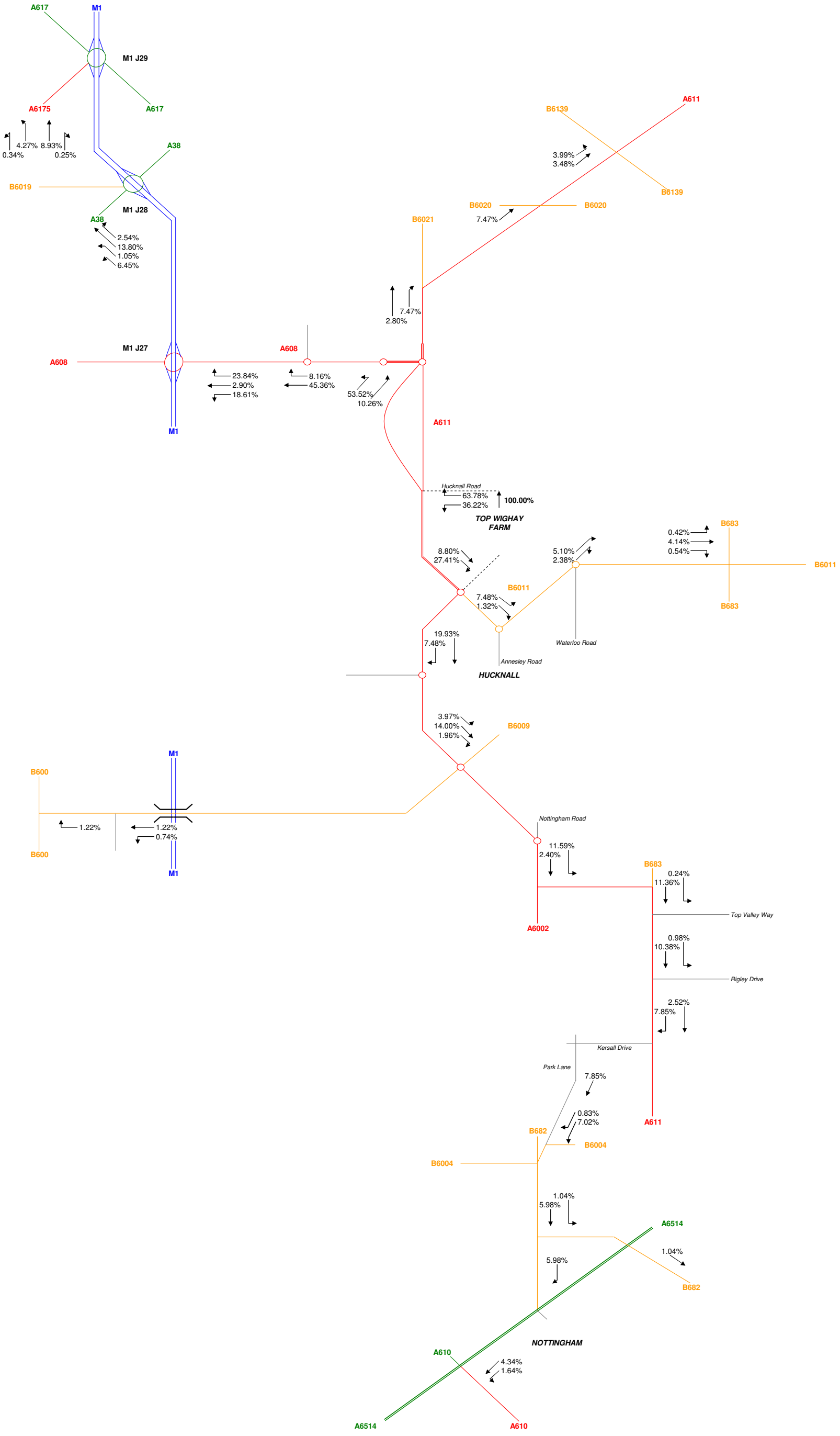

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# A Screening Assessment of Additional Noise from the Development of 500 to 1,500 Houses at Top Wighay Farm, Hucknall on the Proposed Sherwood Forest Special Protection Area (SPA) for Birds and the Integrity of the Habitat for Woodlark and Nightjar

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Issue No 2 / 13th January 2012

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# A Screening Assessment of Additional Noise from the Development of 500 to 1,500 Houses at Top Wighay Farm, Hucknall on the Proposed Sherwood Forest Special Protection Area (SPA) for Birds and the Integrity of the Habitat for Woodlark and Nightjar

**By Prof Neil Humphries, Dr David Deakin, Suzanne Scott & Jonathan Gorstige**

## 1 Background

The proposed development site at Top Wighay Farm is located to the north of the urban conurbation of Hucknall and sits between the A611 to the west, the Mansfield-Nottingham railway line to the east and the B6011 to the south.

The 27ha site is owned by Nottinghamshire County Council and is strategically important for Gedling Borough Council to meet the Borough's housing needs (Top Wighay Farm, Hucknall, Nottinghamshire Development Brief, December 2008). The development would comprise of about 500 homes (18ha), a business area (6ha), both with road access from the A611 to the west, and green infrastructure and land seta side for nature conservation. The site also has the potential to accommodate further housing up to a total of 1,500 homes.

Natural England has advised the Local Authorities that whilst the Sherwood Forest area supports substantial populations of woodlark and nightjar, it had not yet advised the Secretary of State on any selection of any part as a Special Protection Area (SPA). As such the Habitats Regulations 2010 do not apply (see Natural England advice Note 28th June 2010, East Midlands Region), however, Natural England recommends that the Local Authorities proactively adopt a risk-based approach in any planning consent decisions taken in order to satisfy subsequent statutory reviews of consents should a SPA be proposed. Whilst some guidance is given (as to the proximity of houses (predation by cats and recreational activity) and the maintenance of nightjar in heathland SPAs) by the Thames Basin Joint Strategic Planning Partnership Board (2009), none is given in respect of traffic noise.

Both Natural England and the RSPB have during the course of the recent Rufford Energy Recovery Facility Inquiry indicated specific 'core' nightjar and woodlark areas that might be designated as a SPA and a 5km buffer boundary within which developments should be screened for their potential direct and indirect effects.

The Top Wighay Farm site is well within the RSPB 5km buffer boundary and lies within 0.5km of a Natural England 'indicative core area' at Park Forest for nightjar and/or woodlark (Figure 1). This lies to the west of the A611 with a RSPB 'important bird area' (Freckland Wood) about 300m to the north of the site boundary.

Natural England has identified a number of potential adverse impacts on SPA birds by developments such as proposed at Top Wighay Farm; these include additional noise from traffic (Natural England, 2010). DTA in their Habitats Regulations Appraisal Scoping for Further Assessment (September 2010) did not seem to consider noise which appears then to have been scoped-out.

The potential effect of an increase in noise was brought up verbally at a meeting on the 22nd June, 2011 with Natural England (NE) and Nottinghamshire Wildlife Trust. Following the meeting, the County Council asked URS Infrastructure & Environment UK Ltd in August 2011 to assess the potential impact of noise from the additional traffic created by the development at Top Wighay Farm. In the absence of information at the present time relating to other developments, this assessment is as a stand alone development and not in combination with any others. This report sets out the methods used, the results and outcomes.

## 2 Sensitivity of Birds to Increase Noise Levels

The Highways Agency recognises that noise from traffic can adversely affect the behaviour of a range of bird species and cites research undertaken in Holland in the late 1980s (paras A5.19 – 5.20). Reijnen et al (1996) found that seven out of twelve species responded by reduced breeding density alongside heavily used roads, and particularly ground nesting species at distances up to about 1,500m. A relatively low threshold of 47dB(A) was suggested by the study and above which disturbance through noise might occur. However, for open habitats such as grassland and heathland, Reijnen et al suggested that other traffic related factors (such as lights) might be a cause of the longer distance disturbance effects.

Experimental studies by Dooling and Popper (2007) confirmed the sensitivity of birds to noise and suggested a higher threshold of 60dB(A) is more likely as a general rule due to behavioural adaptation, with some species being less sensitive (ie a higher threshold of 70 dB(A)) and others more so (a lower threshold of 50 dB(A)). It is noted that the species they studied were neither ground nesting species such as woodlark or nightjar. From Figure A3.1 (Highways Agency, 2011) for a noise level of 60 dB(A), this equates with a disturbance zone of about 400m (the local traffic volumes being in the order 50,000 vehicles per day), well within the Agency's screening distance of 600m. In terms of bird responses to noise levels, there is some correspondence between that cited generally for humans and traffic noise levels, and distances (Figure A3.1) and hence the recommended calculation area (600m). It is certain that the areas within 400m and possibly 600m (depending on topography, presence of noise absorbent features such as woodland) will be experiencing a level of noise from traffic and other sources. The issue in the case of Top Wighay Farm is whether the level of noise increases significantly due to the proposed development. The following method of assessment uses this approach.

## 3 Methodology and Results

The methodology used for assessing the Top Wighay Farm development and noise is based on the Annex F – Assessment of Designated Sites in the Highways Agency's Design Manual for Roads and Bridges, Volume 11 Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 7, Noise & Vibration, HD213/11, 2011. HD213/11 is agreed with statutory bodies, such as the Joint Nature Conservation Committee (JNCC) and Natural England to assess road noise at sensitive ecosystem sites. There is no other appropriate Environment Agency (EA), Natural England (NE) or other published overarching approach to the assessment of noise from traffic in the UK and that is also relevant to birds.

The Highways Agency's methodology includes three sequential stages, from *Scoping* through *Simple* to *Detailed Assessments* (see Highways Agency, 2011, Figure A1.1). The need for the *Detailed* Stage depends on the circumstance and a likely significant increase in noise levels, in other cases the *Simple Assessment* is more the appropriate and sufficient for the needs of the assessment.

### 3.1 Development Traffic Screening

Baseline Traffic Flows

Existing base year traffic flows (2010) were obtained from The Department for Transport's 'matrix' web-page (http://www.dft.gov.uk/matrix/). In particular, traffic count data has been obtained for four count locations on the A611 (Figure 2a -c) nearest to where the noise assessments are needed to be assessed, as follows:-

| Count No. | Region | LA Name | Count Point | Road | Road Sequence |
|---|---|---|---|---|---|
| 1 | East Midlands | Nottinghamshire County Council | 81204 | A611 | 73 |
| 2 | East Midlands | Nottinghamshire County Council | 58397 | A611 | 70 |
| 3 | East Midlands | Nottinghamshire County Council | 77403 | A611 | 65 |
| 4 | East Midlands | Nottinghamshire County Council | 99040 | A611 | 60 |

The traffic data available from the above locations were in the form of 24 hour Annual Average Daily Traffic flows (AADT), together with HGV numbers. These were factored into Annual Average Weekly Traffic flows (AAWT) formats suitable for noise assessments by using local factors obtained from a year's full traffic count data on the nearby A46(T) trunk road, just east of Nottingham.

Change in Traffic Flows Due to Top Wighay Farm

The Development Brief for Top Wighay Farm (Nottinghamshire County Council, 2008) sets out the potential to generate traffic and increase noise levels by the traffic from:

- 500 Dwellings – population 1250 people.
- 34,000 $m^2$ business space – business (B1) and small warehousing uses (B8).
- A 1.4 ha primary school site including playing fields.

Other activity types were also identified including retail, healthcare and leisure. However, there was insufficient data to quantify the potential traffic associated with these and other land-uses (eg an energy centre).

In the absence of specific traffic data for the development, the nationally accepted TRICS database (http://www.trics.org/default.cfm) was used to assess the generated traffic from the development. The resulting Annual Average Weekday Traffic (AAWT) flow was 6,200, including 140 heavy goods vehicles (HGVs). Development flows suitable for the noise assessments were then derived from this TRICS data

(18 hour AAWT flows for noise) using a gravity flow model as not all the additional traffic would be expected to use the same route and would be expected to be distributed spatially.

The changes in spatial distribution in traffic was undertaken using the Highways Agency approved ODYSSEUS model (Anderton, 2008) and as deployed by the Agency in the form of their PENELOPE Model. The ODYSSEUS / PENELOPE model is based on the National Census Ward-level journey-to-work data in conjunction with a link-based 'gravity model' driven by travel cost. In this model trips are distributed through one entry/exit point at a development. Gravity models use a function of travel time and distance to provide a relative weighting reflecting the cost of travelling between each competing origin-destination pair. These weightings are used to provide factors to enable the predicted total travel demand to be distributed proportionately. The results give calculated Ward-level travel demands and estimates of link flows on the most attractive routes between the development site and surrounding Wards. Using this gravity distribution model, the development flows were assigned to the surrounding highway network, so that additional development traffic flows on each road link could be quantified. In the Top Wyghay Farm case there are two potential entry exit points: the A611/B6011 entrance and the A611/Hucknall Road T Junction.

The results of the gravity model are expressed as a percentage of *outgoing traffic* and *incoming traffic* along the routes around the proposed development are presented in the Annex 1.

The assessment, using the same approach, was repeated for the scenario of larger housing developments comprising 1,000 and 1,500 dwellings, but keeping the same development profile for the business space.

### 3.2 Identification of SPA Receptors

Paragraph A1.12 of HD213/11 (Highways Agency, 2011) requires at least a *Simple Assessment* if sensitive receptors such as SPAs occurs within the calculation area (600m from carriageway edge). Hence, significant changes in noise levels from road contributions would also not be expected beyond 600m. In this respect only the pSPA (woodlark and nightjar habitat) within 600m of roads receiving the additional traffic might be potentially affected and need be considered. Hence, as a screening exercise, it is possible to assess the implication of the development of Top Wighay Farm by mapping the overlap of the 600m calculation area over the indicative pSPA boundaries.

Three potential receptors were identified along the A611 Hucknall to Mansfield (Derby) Road (Figures 3 & 4), these were:

- North eastern part of Park Forest and Wighay Wood, juxtaposed with the A611 (Figure 3)
- Western point of part of Kirby Woods/Nottinghamshire Golf Course on Robin Hood Hills set back from A611 (Figure 4)
- North western part of Stone Hills Farm, juxtaposed with the A611 (Figure 4)

### 3.3 Screening SPA Receptors

In this section the pSPA receptors are considered further. The assessment is based on aerial photography and a site visit to Wighay Wood alongside the A611. Woodlark habitat in the UK is typically short and open vegetation of clear felled forestry plantations and lowland heath (www.forestry.gov.uk/forestry/woodlark). Replanted clear felled areas remain suitable until the new trees are around 7 years old. Thereafter, the new

plantations become too dense. Nightjar habitat in the UK is similar to woodlark, but also extends to 'scrubby' habitat including older replanted stands of around 15 years old (www. forestry.gov.uk/forestry/nightjar).

Park Forest

The Wighay Wood is part of the Park Forest indicative core area for nightjar and woodlark, but the wood is broad leaved woodland and is not habitat of the woodlark or nightjar. Potentially suitable habitat occurs much further afield within the Park Forest. Only a very small part of the potential habitat is within the 600m radius of the A611 kerb edge, but none within the 400m radius which envelops Wighay Wood: the deciduous woodland will act as an acoustic screen with respect to birds and the effects of noise further afield (Reijnen et al, 1996).

Robin Hood Hills

Some of the western part of Robin Hood Hills indicative area lies within the 400 & 600m radii, mainly conifer habitat with open habitat (golf course). This too is likely to be not significant in habitat terms, but the potential habitat and use by woodlark and nightjar within the affected zone should be checked by a suitably qualified ecologist.

Stone Hills Farm

A conifer block and possibly some open felled areas at the Stone Hills Farm 'indicative' core area near to Mansfield lie within the 400 & 600m radii along the A611 and potentially might be affected by additional noise levels if the roadside conifers were felled and not replanted.

## 4 Assessment of Increase in Noise Levels

The gravity model indicated that the greatest flows to and from the site are distributed along the A611, with around approximately 50% travelling in each direction, with a large percentage of traffic utilising the A608 and the M1 (Appendix 1, 1a-d, 2a-d, 3a-d). The draw of the M1 along with the dilution in traffic along the B-road network along the A611 is the reason why flows are reduced to levels well below the Highways Agency screening zones at all the three pSPA receptor sites (Table 1). Therefore, no likely significant increases in noise levels would occur within the pSPA locations, and no further *Detailed Assessment* is required.

**Table 1: Traffic Generation along the A611 north of the B6139 adjacent to Stone Hills Farm**

**Table 1a: 500 Homes**

| **Scenario **** | **Entrance/Exit** | **Direction** | **Percentage flow A611 north of B6139** | **AADT Flow A611 north of B6139** |
|---|---|---|---|---|
| Scenario 1a | A611/B6011 entrance | In | 3.22 | 99 |
| Scenario 1b | A611/B6011 entrance | Out | 2.08 | 65 |

| Scenario ** | Entrance/Exit | Direction | Percentage flow A611 north of B6139 | AADT Flow A611 north of B6139 |
|---|---|---|---|---|
| Scenario 1c | A611/Hucknall Road T Junction | In | 4.97 | 153 |
| Scenario 1d | A611/Hucknall Road T Junction | Out | 4.06 | 127 |
| | | | **Total Worst Case (Scenario c & d)** | **280** |

**Table 1b: 1,000 Homes**

| Scenario ** | Entrance/Exit | Direction | Percentage flow A611 north of B6139 | AADT Flow A611 north of B6139 |
|---|---|---|---|---|
| Scenario 2a | A611/B6011 entrance | In | 3.22 | 141 |
| Scenario 2b | A611/B6011 entrance | Out | 2.08 | 93 |
| Scenario 2c | A611/Hucknall Road T Junction | In | 4.97 | 217 |
| Scenario 2d | A611/Hucknall Road T Junction | Out | 4.06 | 181 |
| | | | **Total Worst Case (Scenario c & d)** | **398** |

**Table 1c: 1,500 Homes**

| Scenario ** | Entrance/Exit | Direction | Percentage flow A611 north of B6139 | AADT Flow A611 north of B6139 |
|---|---|---|---|---|
| Scenario 3a | A611/B6011 entrance | In | 3.22 | 182 |
| Scenario 3b | A611/B6011 entrance | Out | 2.08 | 121 |
| Scenario 3c | A611/Hucknall Road T Junction | In | 4.97 | 281 |
| Scenario 3d | A611/Hucknall Road T Junction | Out | 4.06 | 235 |
| | | | **Total Worst Case (Scenario c & d)** | **517** |

*** Note: Scenarios a and b are one set of flows calculated assuming all trips from the site are made through the A611/B6011 entrance/exit. Scenarios c and d are one set of flows calculated assuming all trips from the site are made through the A611/Hucknall Road T junction entrance/exit. This approach has been utilised as the traffic model distributes development flows via one entry/exit point.*

In terms of the change in traffic noise level at 10m from the kerb (for both the background and with the 500 and 1,000 homes scenarios in each assessment year at each site, the estimated change (using the Highways Agency method) is very small at all the sensitive receptor locations (Appendix 2a-c). For example, the change in each assessment year (2010, 2011 and 2012) for 500 and 1,000 houses is +0.1 and +0.2 dB at sites 1-3, and +0.6 and +0.8 dB at site 4 respectively. The magnitude falls into the 'negligible' classification (Highways Agency, 2011), and is regarded as 'imperceptible level of change' at 10m from the kerb side (ie not extending to within the screened receptor areas potentially used for breeding by woodlark and nightjar.

The estimated maximum change at the kerbside is only slightly greater with 1,500 homes (year (2010, 2011 and 2012) is +0.2 at site 1, +0.3 dB at sites 2-3 and +1.0 dB at site 4, just falling into the Highway Agency's minor magnitude category. As the noise reduces considerably over distance away from the source, the change at the target habitat sites some will have reduced to within the negligible category.

## 5 Outcome

Based on the small magnitude of the likely change in total traffic flows and HGVs due to the Top Wighay Farm development from a scheme with 500, 1,000 or 1,500 dwellings, the corresponding change in traffic noise levels along the affected road links is very small (1 dB(A) or lower) for all the road links under consideration (Highways Agency, 2011)). Given that the levels of traffic anticipated to be generated along the A611 are well below the levels requiring a detailed noise assessment, no likely significant noise effects are anticipated, irrespective of the year of assessment. Also, it is worth noting that noise levels might reduce significantly over the longer time frame through the adoption of electric motors to propel vehicles.

Based on the available information for the stand-alone Top Wighay Farm development, even in the absence of mitigation, there will be no likely significant adverse effects on the Sherwood pSPA from additional noise. Therefore, Top Wighay Farm as a stand alone development is assessed to be compliant with the Habitats Regulations (without mitigation) in respect of the pSPA and noise. Even, if it was decided there was a need for mitigation this could be achieved through standard methods such as acoustic fencing etc (Highways Agency, 2011).

## 6 References

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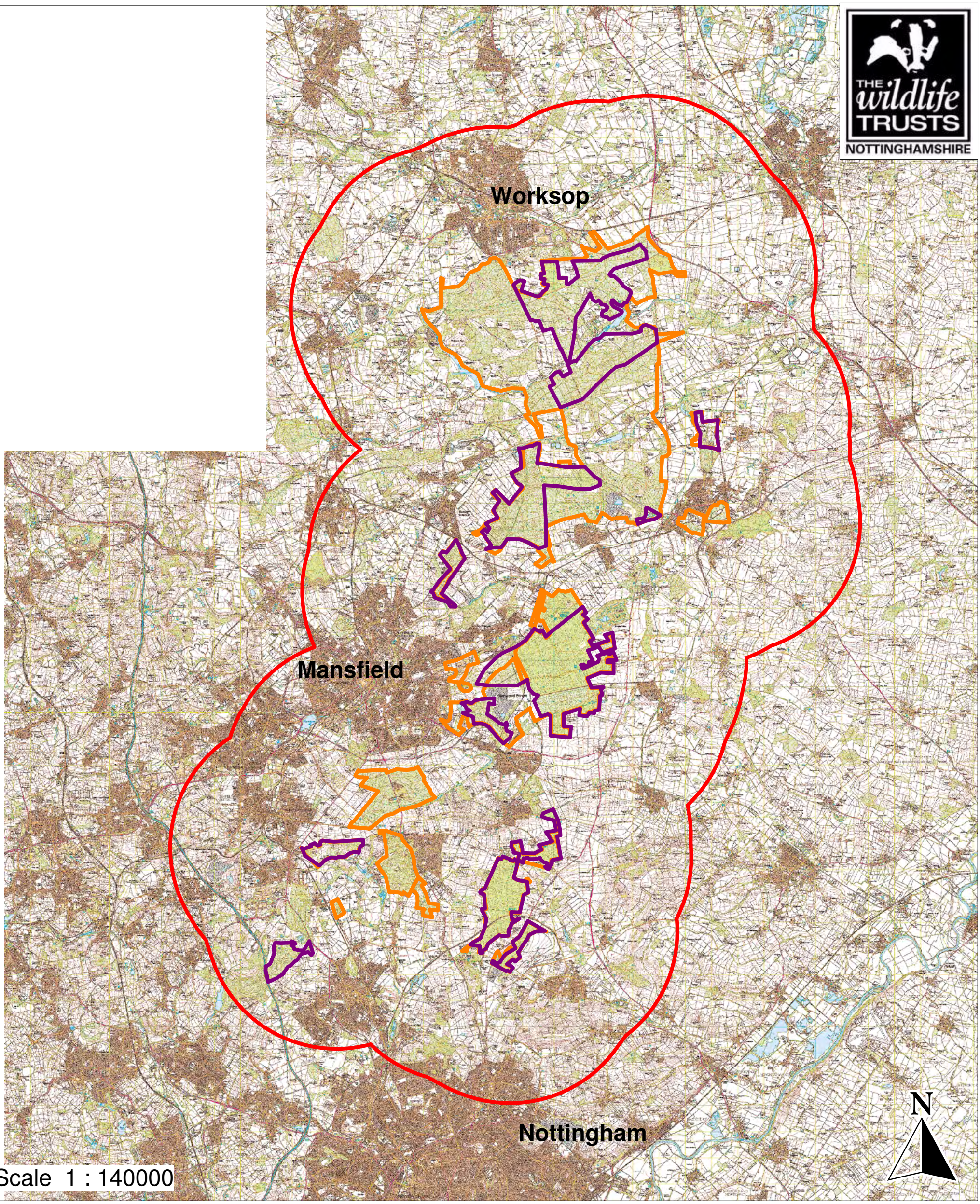
Reijnen R, Foppen R & Meeuwsen H, 1996. The Effects of Traffic Density of Breeding Birds in Dutch Agricultural Grasslands. Biological Conservation 75, 255-26.

Thames Basin Joint Strategic Planning Partnership Board, 2009. Thames Basin Heaths Special Protection Area Delivery Framework. South East England Regional Assembly, Guildford.

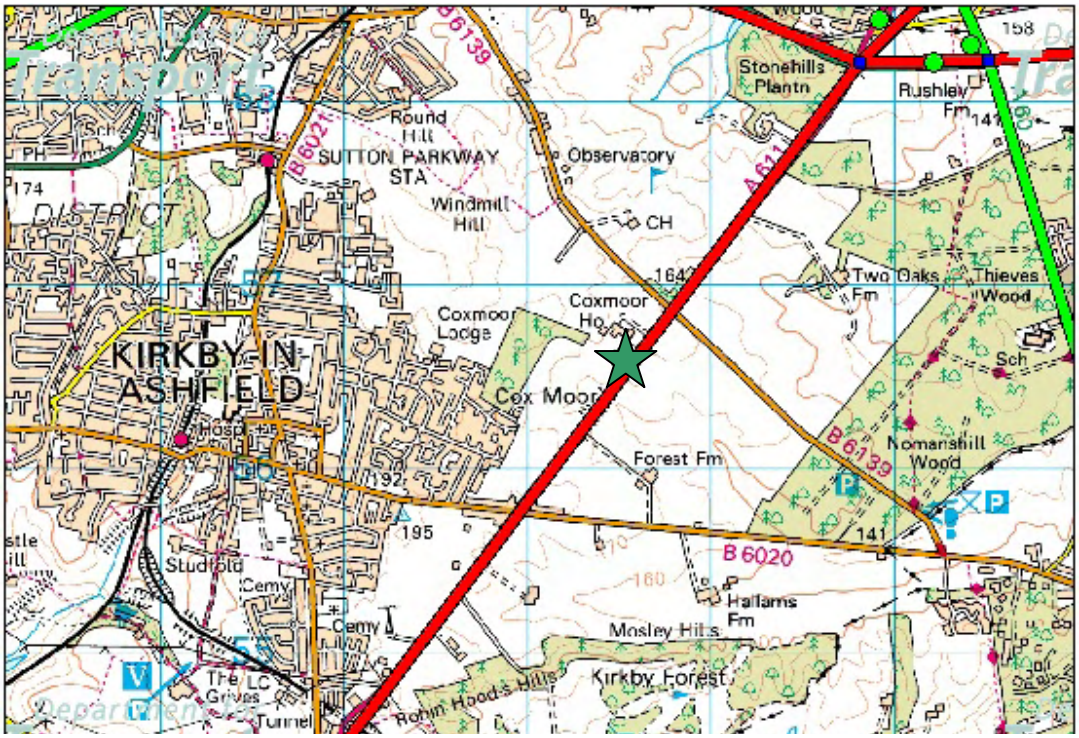
# FIGURES




Key

- RSPB IBA Boundary with 5Km buffer
- NE Indicative Core Area
- RSPB IBA Boundary

Plan 1 v2



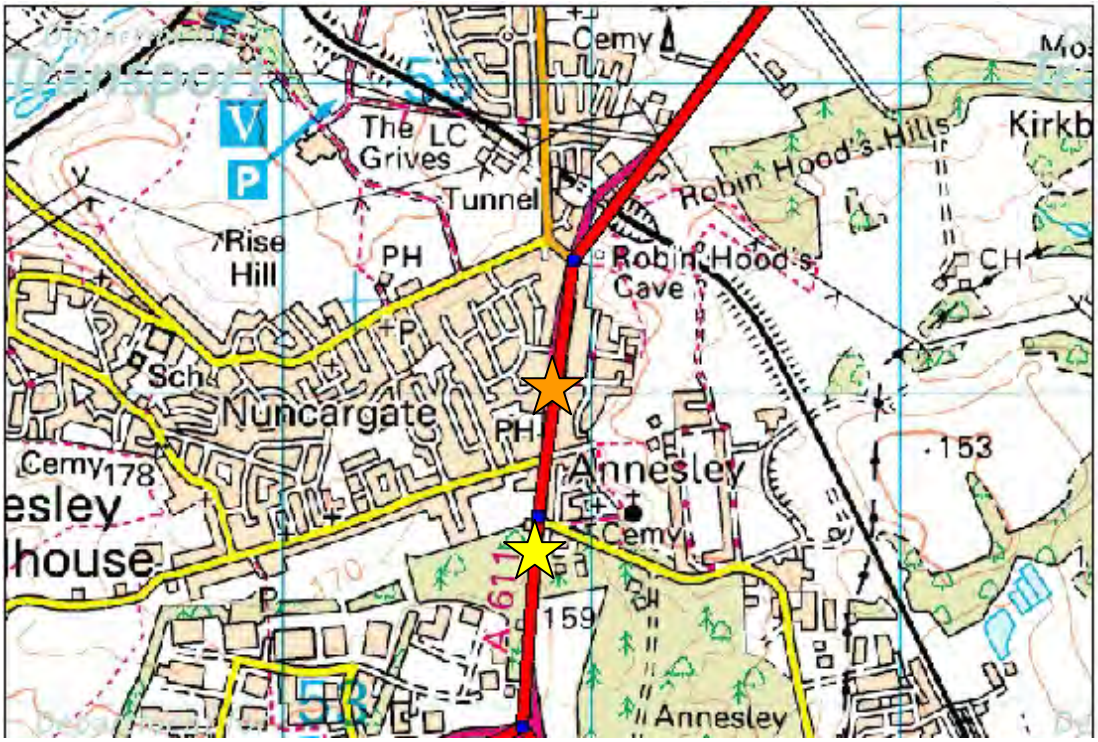

**Location 1**

URS CORPORATION
12 Regan Way
Chetwynd Business Park
Chilwell
Nottingham
NG9 6RZ

**TOP WIGHAW FARM, HUKNALL**

**Figure 2a: Count Location 1, A611**

| PC Ref: | Drawn by: PB | Checked by: | Date: 03/03/10 |
|---|---|---|---|




**Location 2**

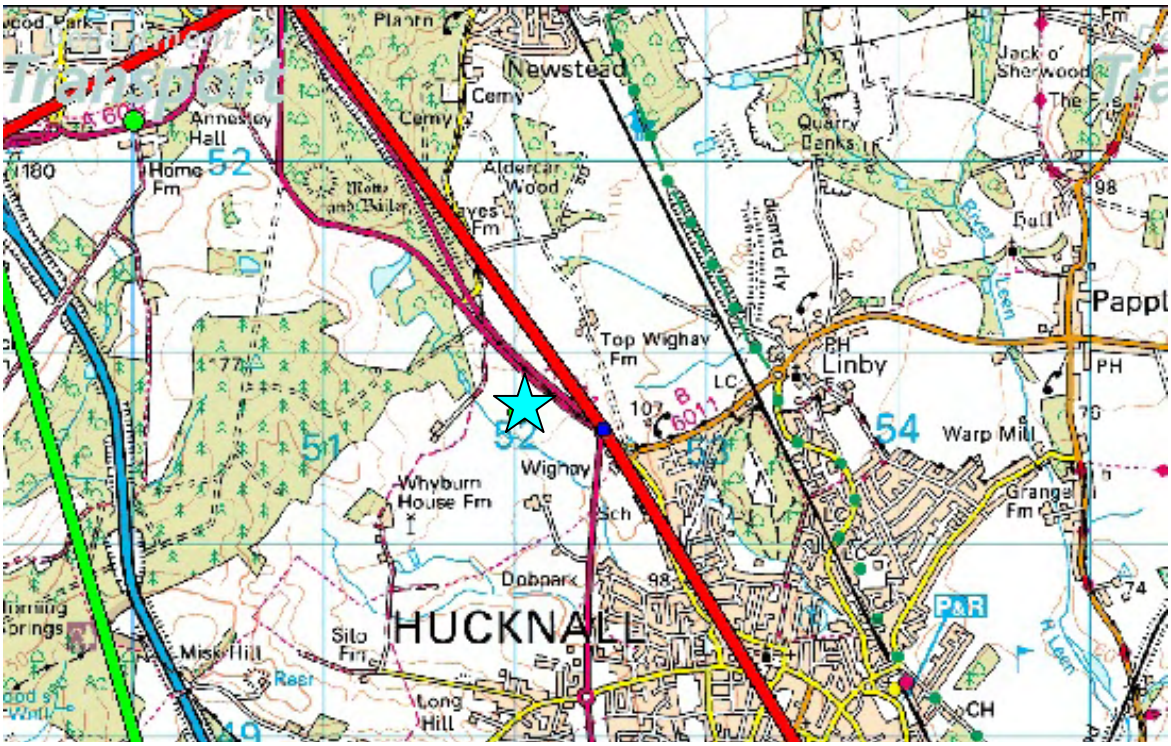
**Location 3**

URS CORPORATION
12 Regan Way
Chetwynd Business Park
Chilwell
Nottingham
NG9 6RZ

**TOP WIGHAY FARM HUCKNALL**

**Figure 2b: Count Locations 2 & 3 A611**

| PC Ref: | Drawn by: PB | Checked by: | Date: 03/03/10 |
|---|---|---|---|




**Location 4**

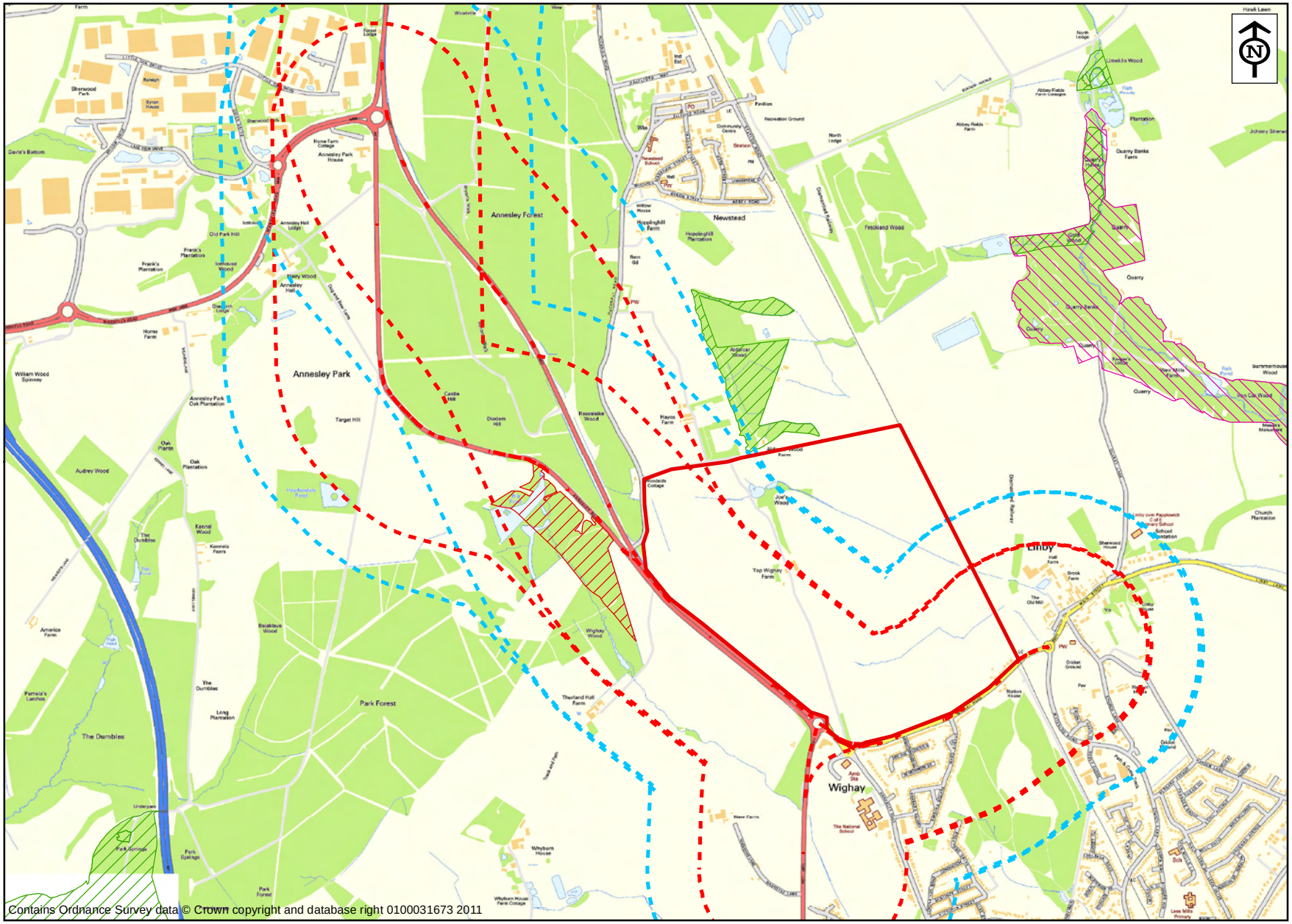
URS

URS CORPORATION
12 Regan Way
Chetwynd Business Park
Chilwell
Nottingham
NG9 6RZ

**TOP WIGHAY FARM HUCKNALL**

**Figure 2c: Count Location 4 A611**

| PC Ref: | Drawn by: PB | Checked by: | Date: 03/03/10 |
|---|---|---|---|




Contains Ordnance Survey data © Crown copyright and database right 0100031673 2011

**Key:**

- Site Boundary
- 400m from Centre of Road
- 600m from Centre of Road
- SSSI
- Ancient Woodland
- NE Indicative Core Area
- Noise Receptor

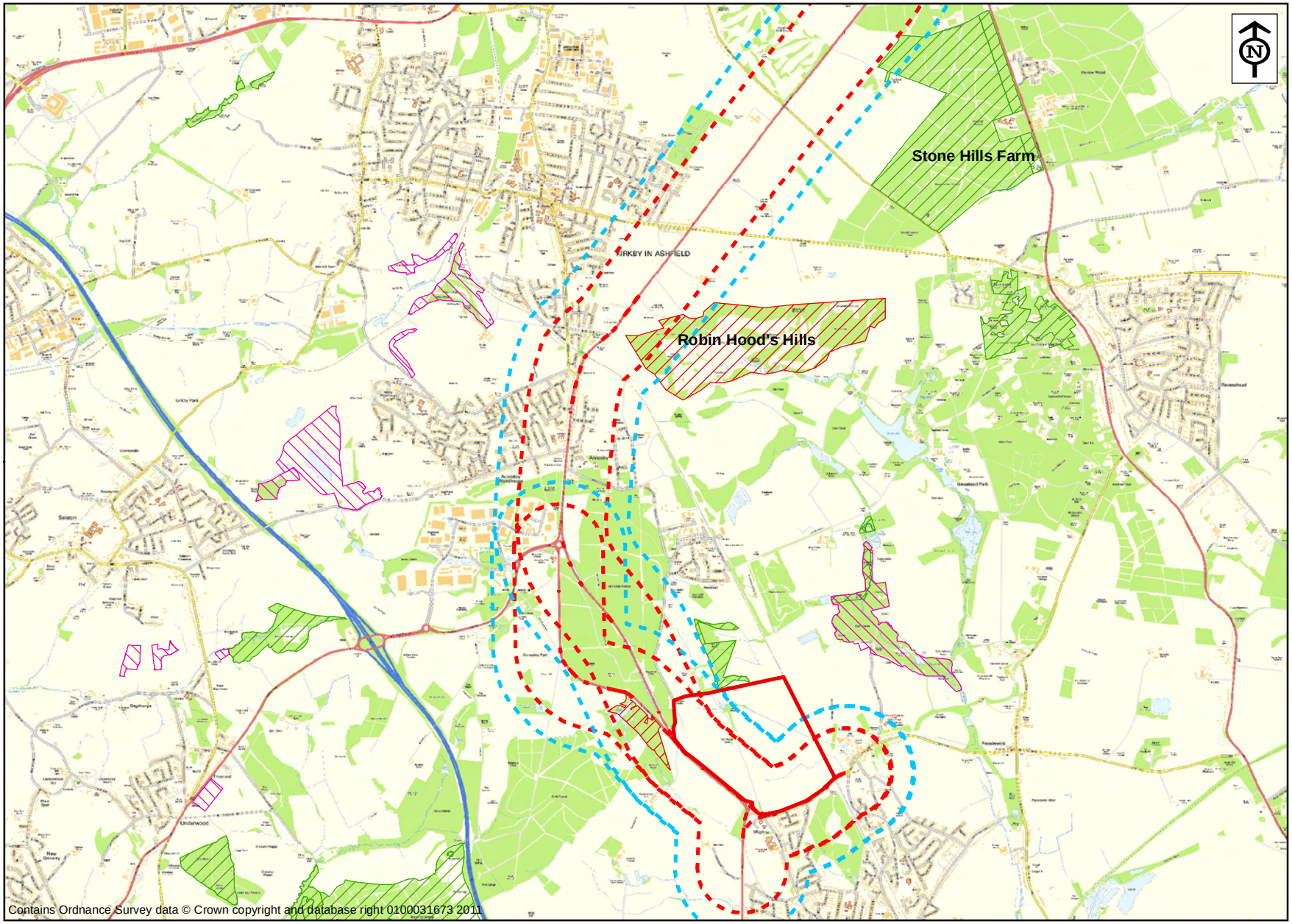
0 120 240 360 480

Metres

| | |
|---|---|
| Title | Constraints Plan |
| Project | Top Wighay Farm, Hucknall |
| Client | Nottingham County Council |

URS

| | | | |
|---|---|---|---|
| App'd: | Drawn: | Ch'kd: | Drg.Size: A3 |
| Version: 1 | | Ref: 01/KC/LON | |
| Scale: 1:21,500 | | Job No: XXXXXXXX | |
| Date: 05/04/2011 | | FIGURE 3 | |




**Key:**

- Site Boundary
- 400m from Centre of Road
- 600m from Centre of Road
- SSSI
- Ancient Woodland
- NE Indicative Core Area
- Noise Receptor

0 270 540 810 1,080

Metres

| | |
|---|---|
| Title | Constraints Plan |
| Project | Top Wighay Farm, Hucknall |
| Client | Nottingham County Council |

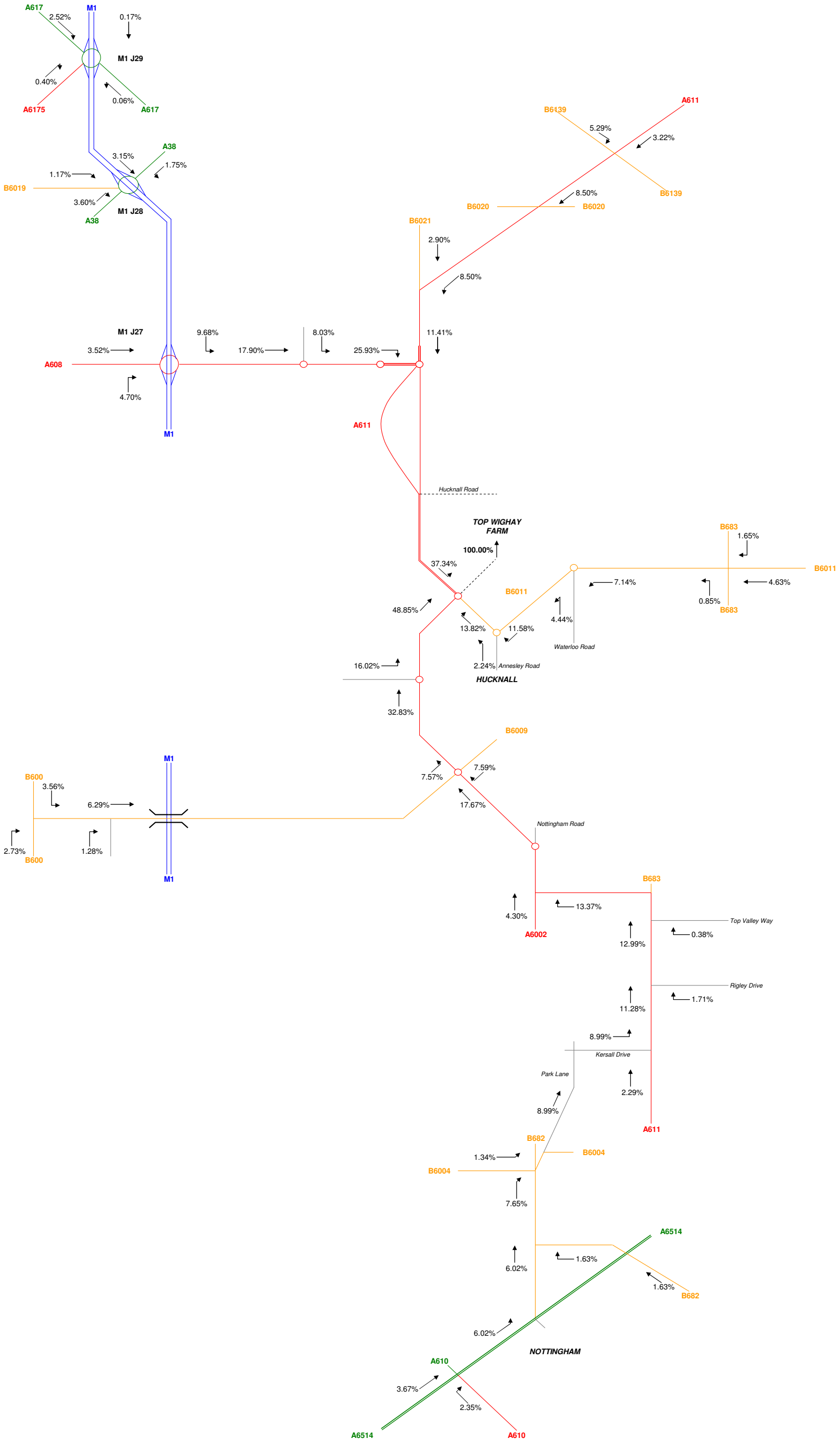
URS

| | | | |
|---|---|---|---|
| App'd: | Drawn: | Ch'kd: | Drg.Size: A3 |
| Version: 1 | | | Ref: 01/KC/LON |
| Scale: 1:50,000 | | | Job No: XXXXXXXX |
| Date: 05/04/2011 | | | **FIGURE 4** |

# APPENDIX 1

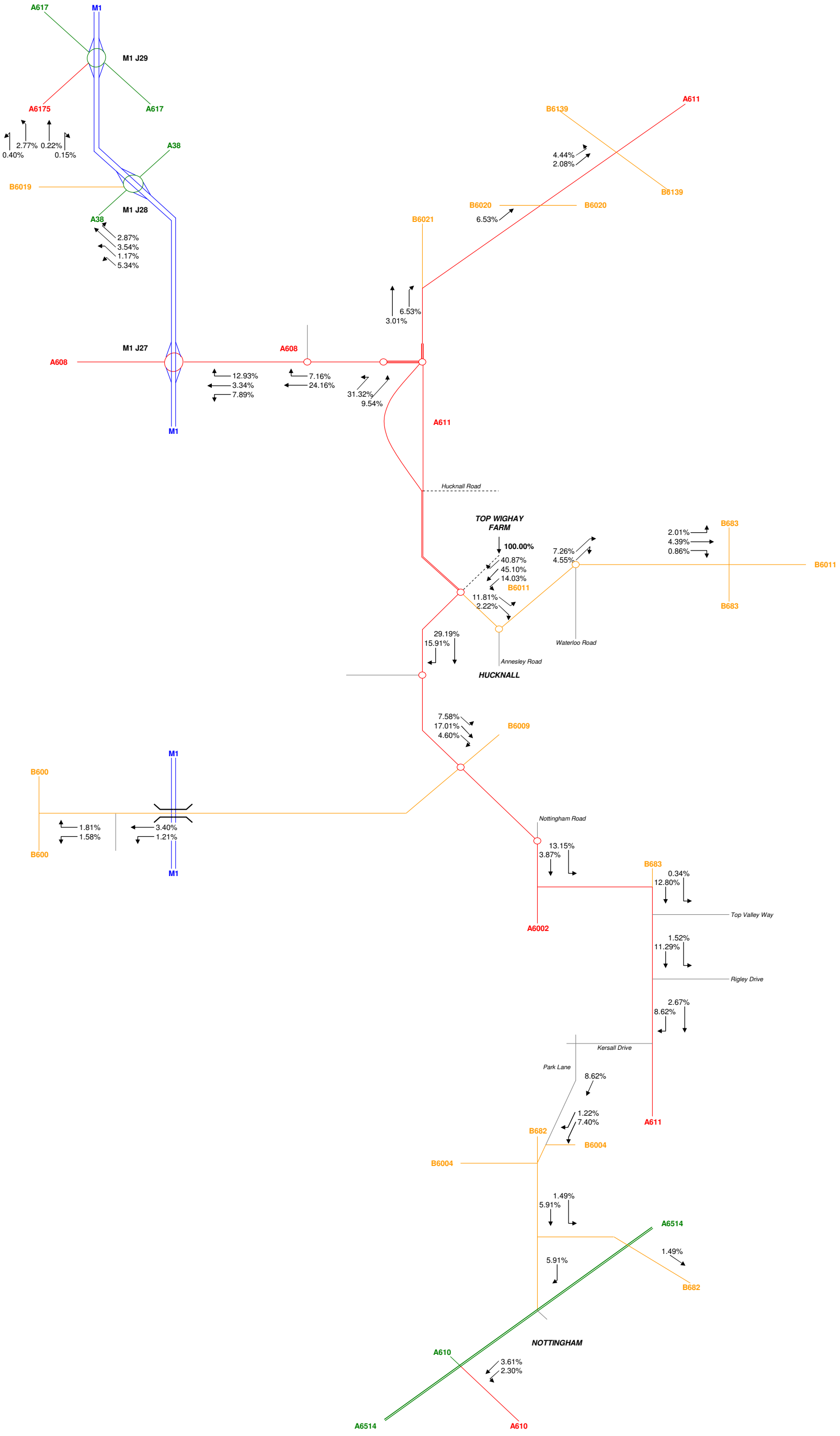
## Scenario 1a:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / B6011 roundabout
**Direction =** Inbound



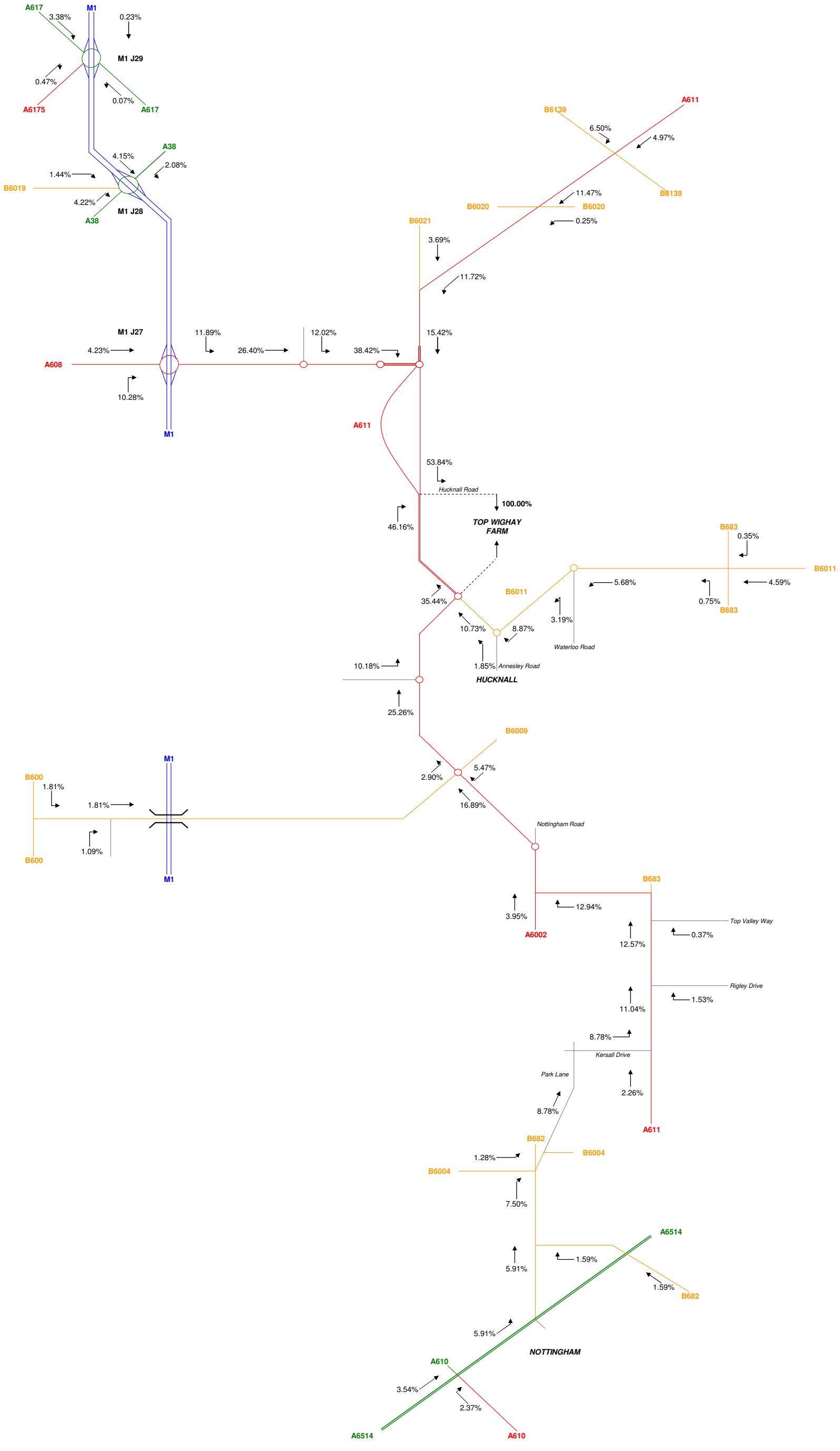
## Scenario 1b:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / B6011 roundabout
**Direction =** Outbound



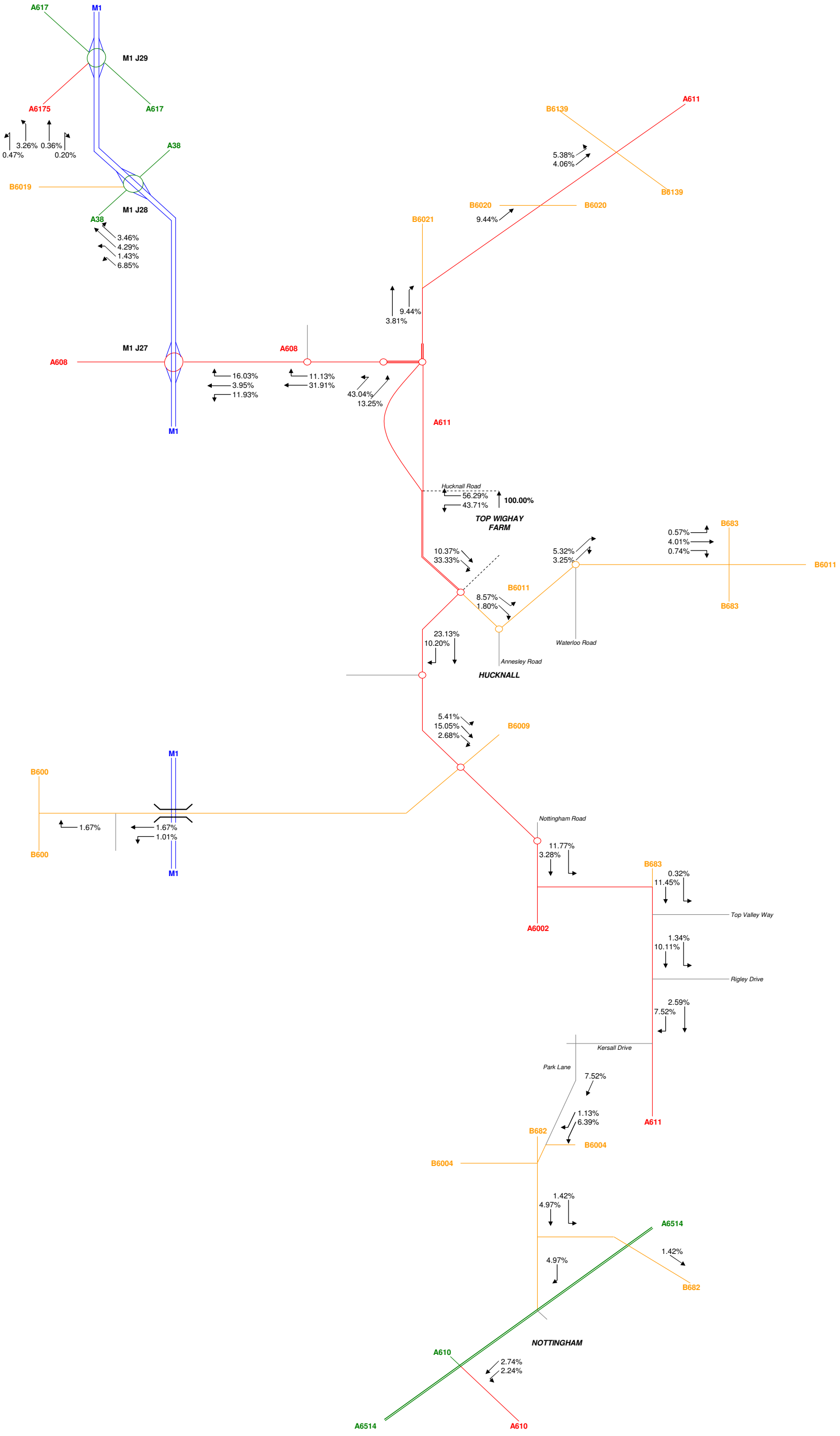
## Scenario 1c:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / Hucknall Road T-junction
**Direction =** Inbound



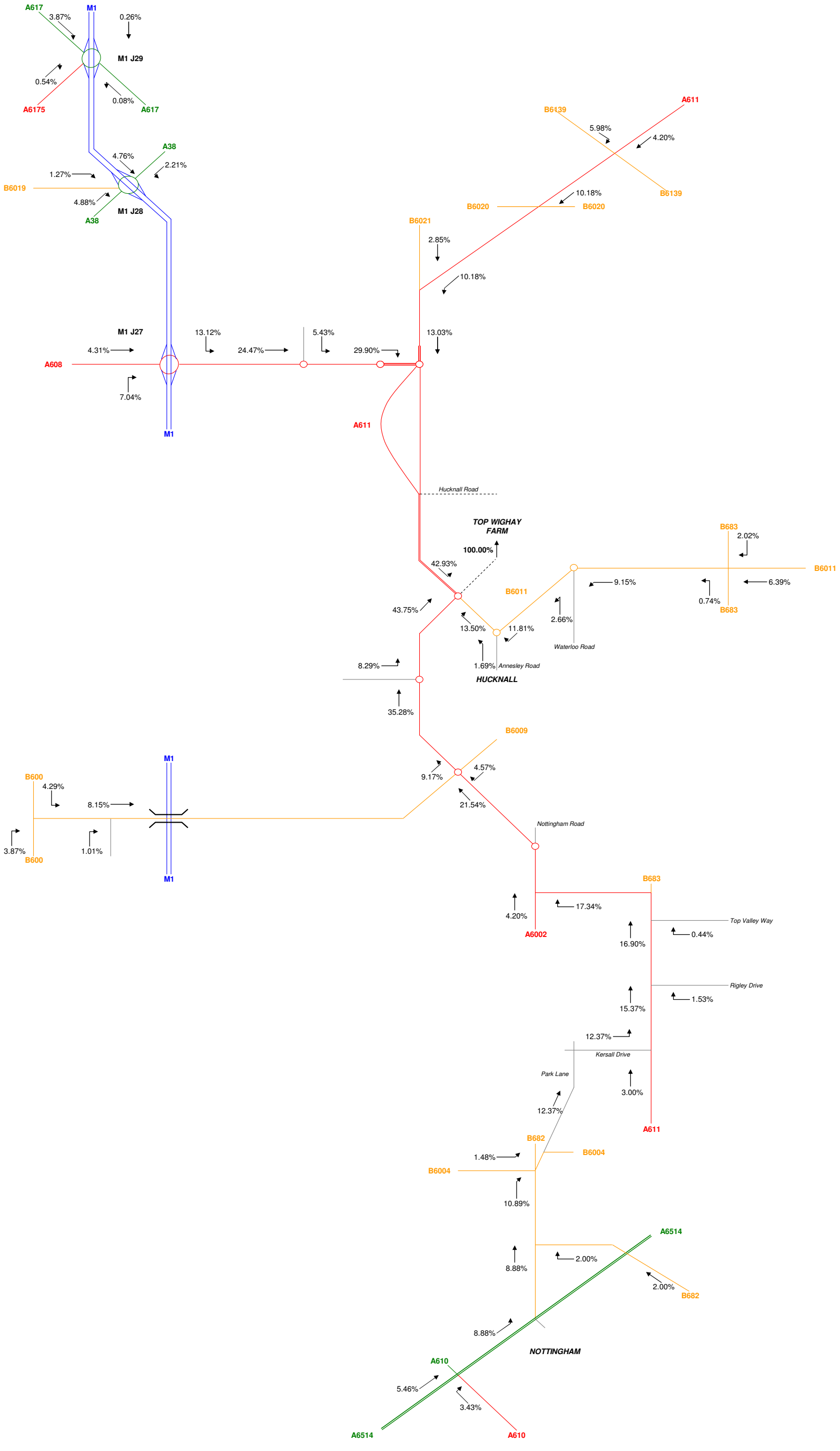
## Scenario 1d:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / Hucknall Road T-junction
**Direction =** Outbound



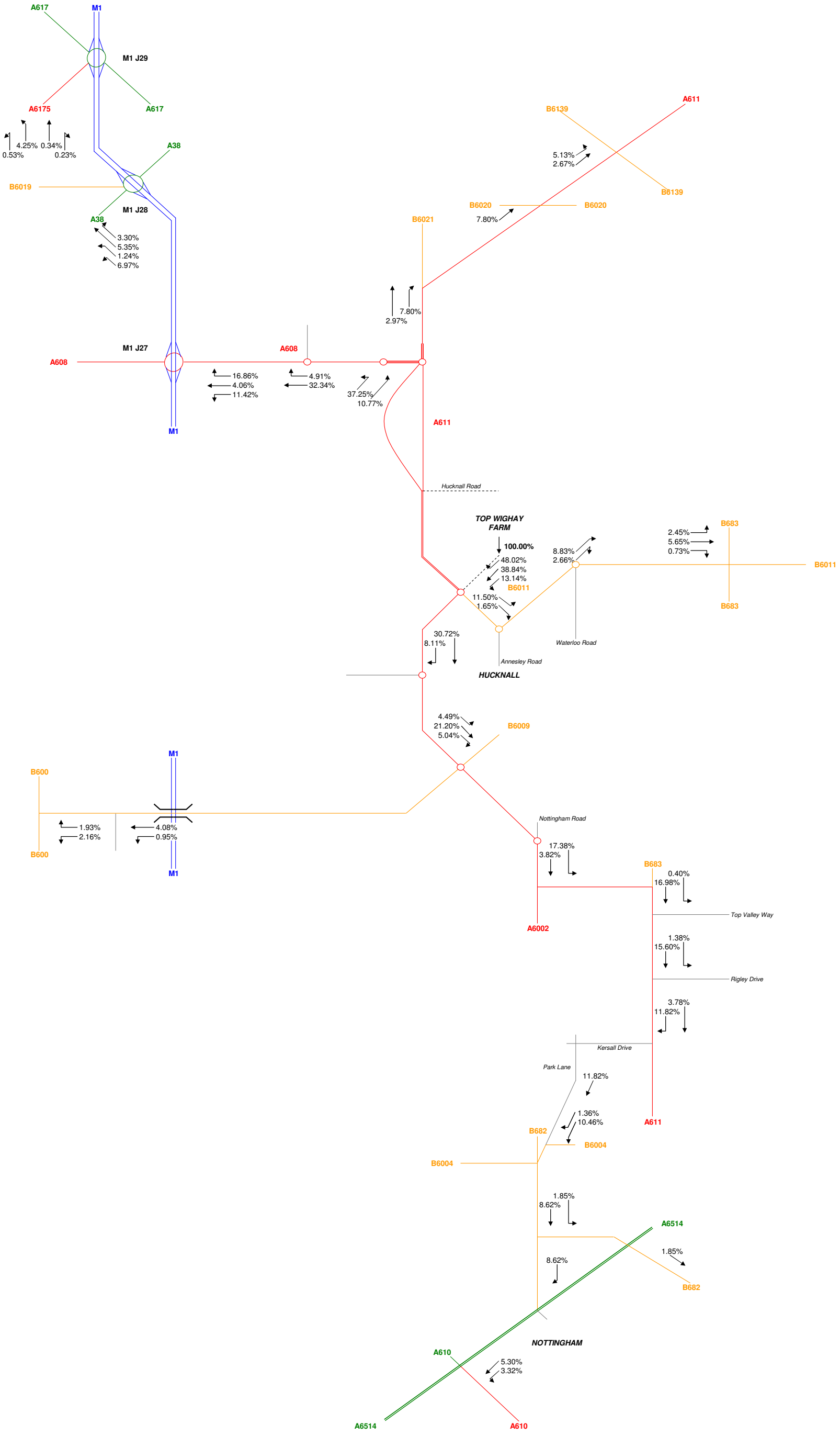
## Scenario 2a:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^{1.5}$
**Site access =** A611 / B6011 roundabout
**Direction =** Inbound



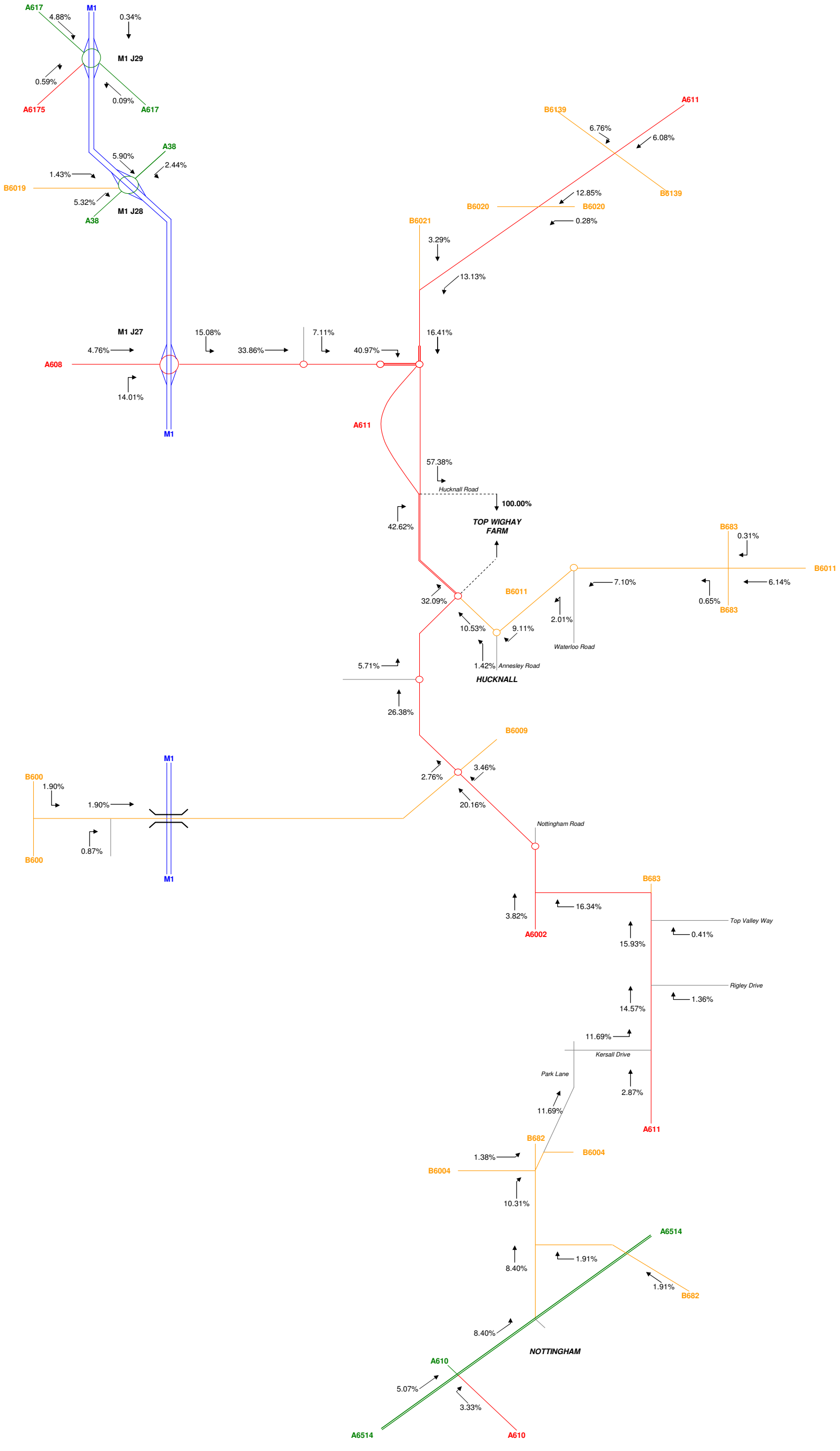
## Scenario 2b:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^{1.5}$
**Site access =** A611 / B6011 roundabout
**Direction =** Outbound



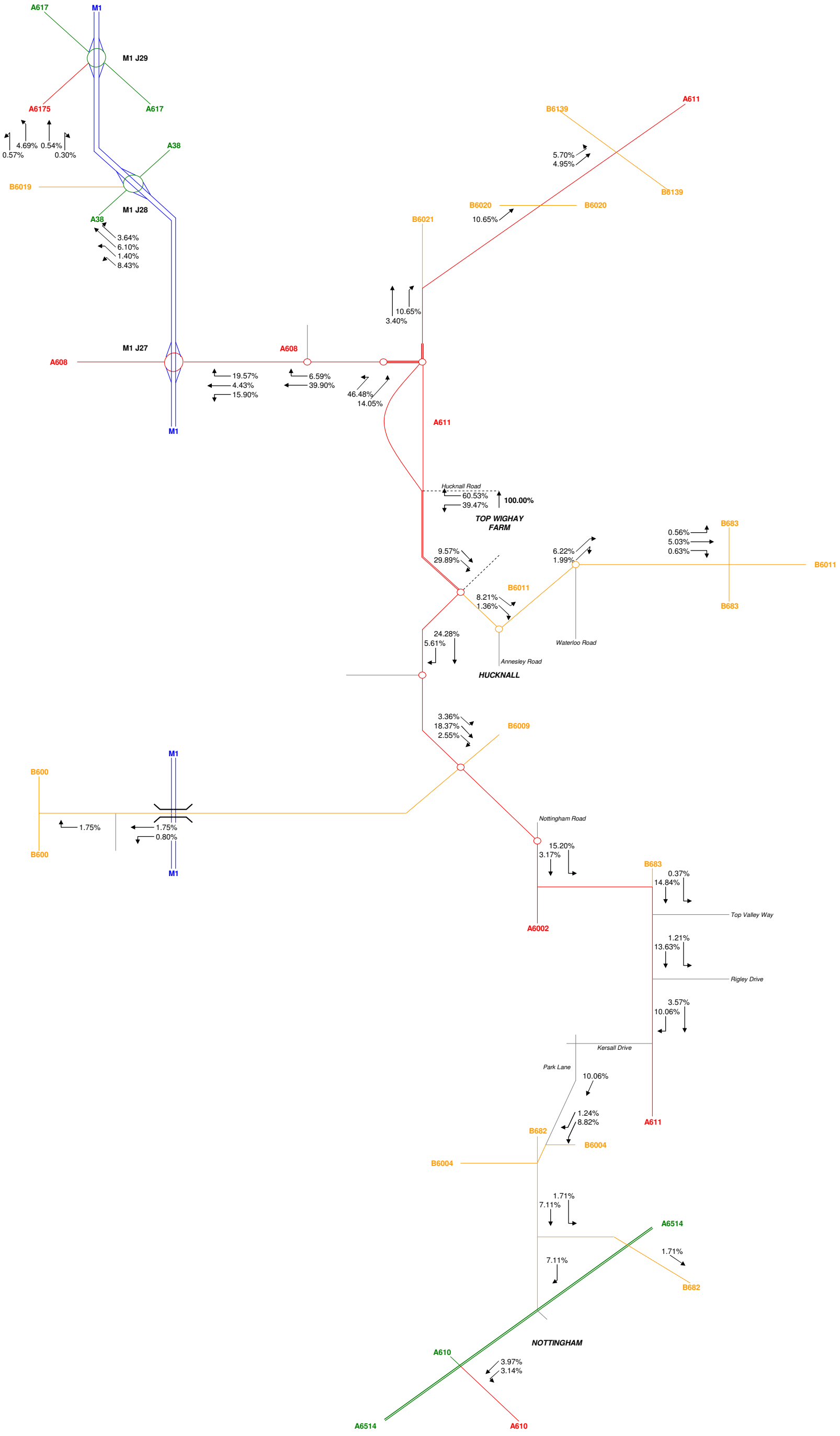
## Scenario 2c:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^{1.5}$
**Site access =** A611 / Hucknall Road T-junction
**Direction =** Inbound



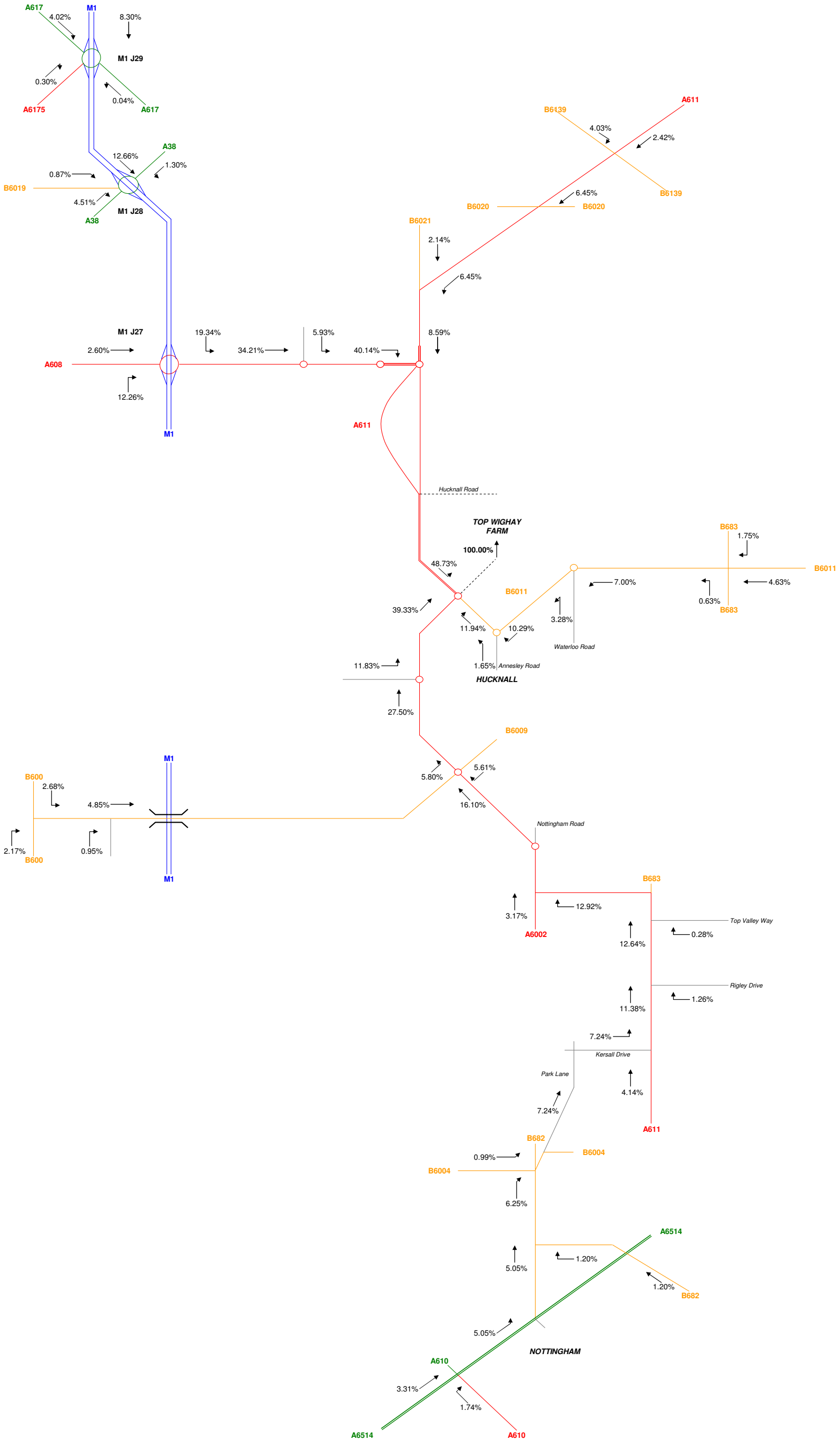
## Scenario 2d:

**Isochrone =** 30 minutes
**Gravity fn =** travel time$^{1.5}$
**Site access =** A611 / Hucknall Road T-junction
**Direction =** Outbound



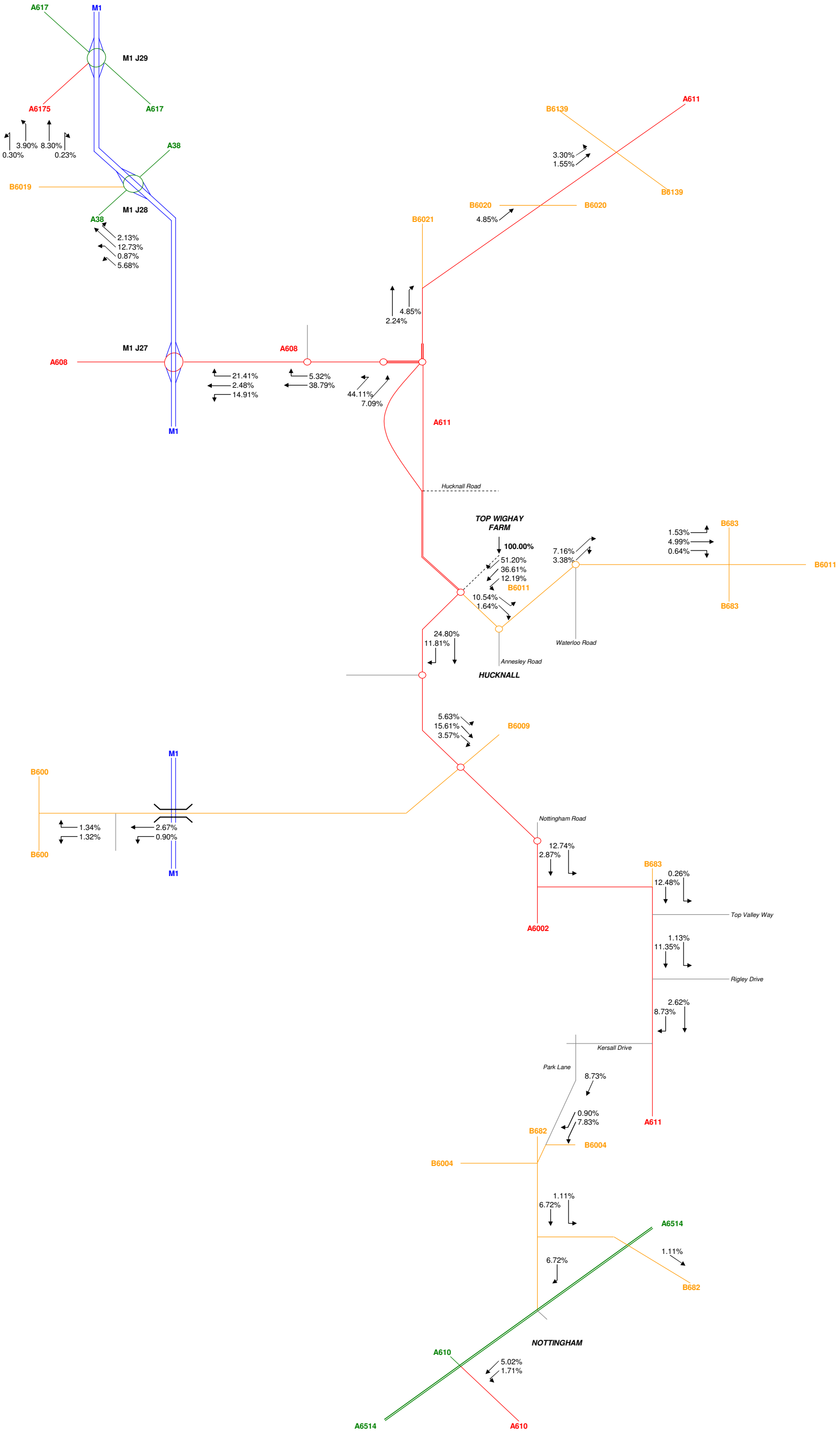
## Scenario 3a:

**Isochrone =** 60 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / B6011 roundabout
**Direction =** Inbound



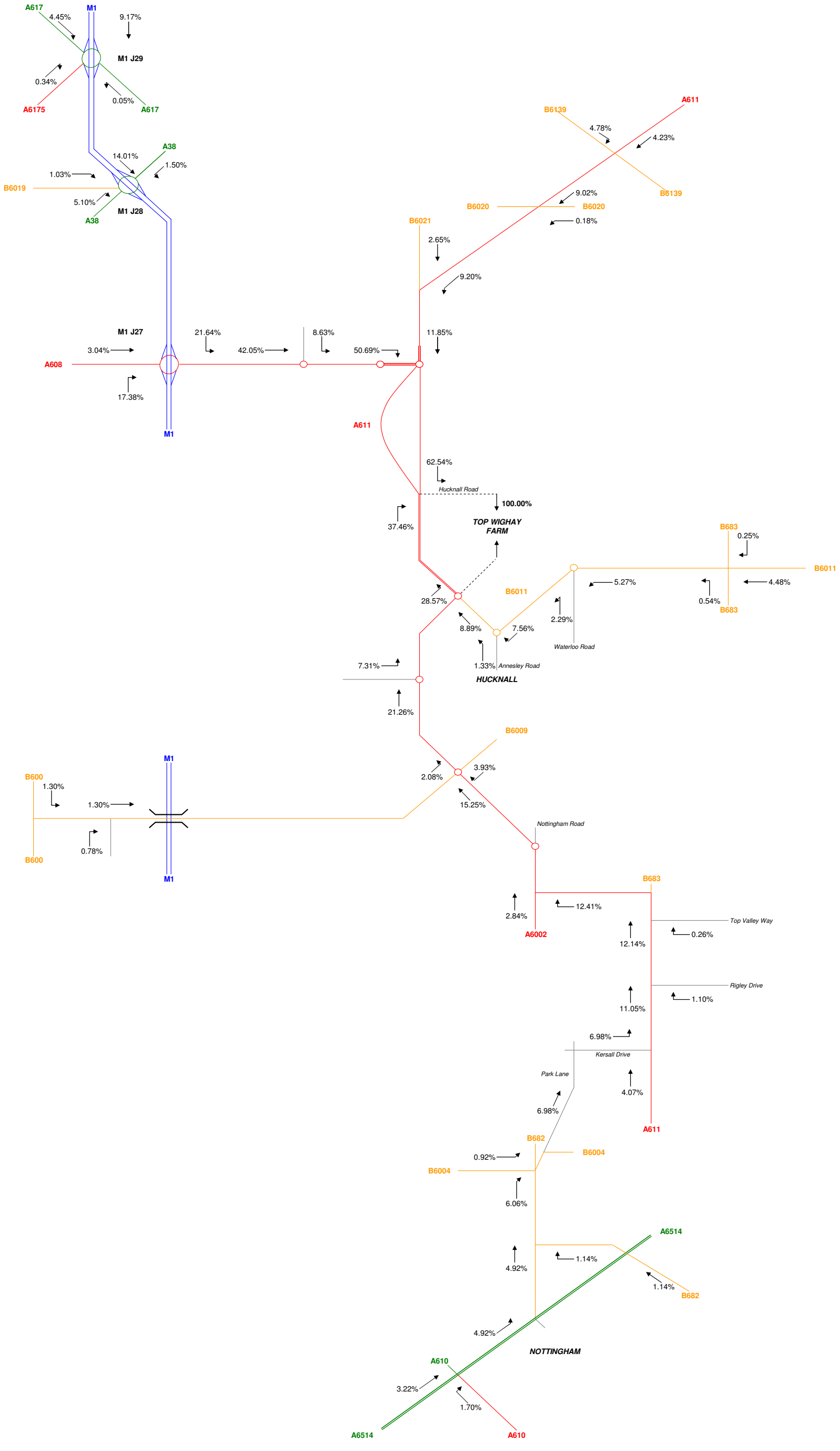
## Scenario 3b:

**Isochrone =** 60 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / B6011 roundabout
**Direction =** Outbound



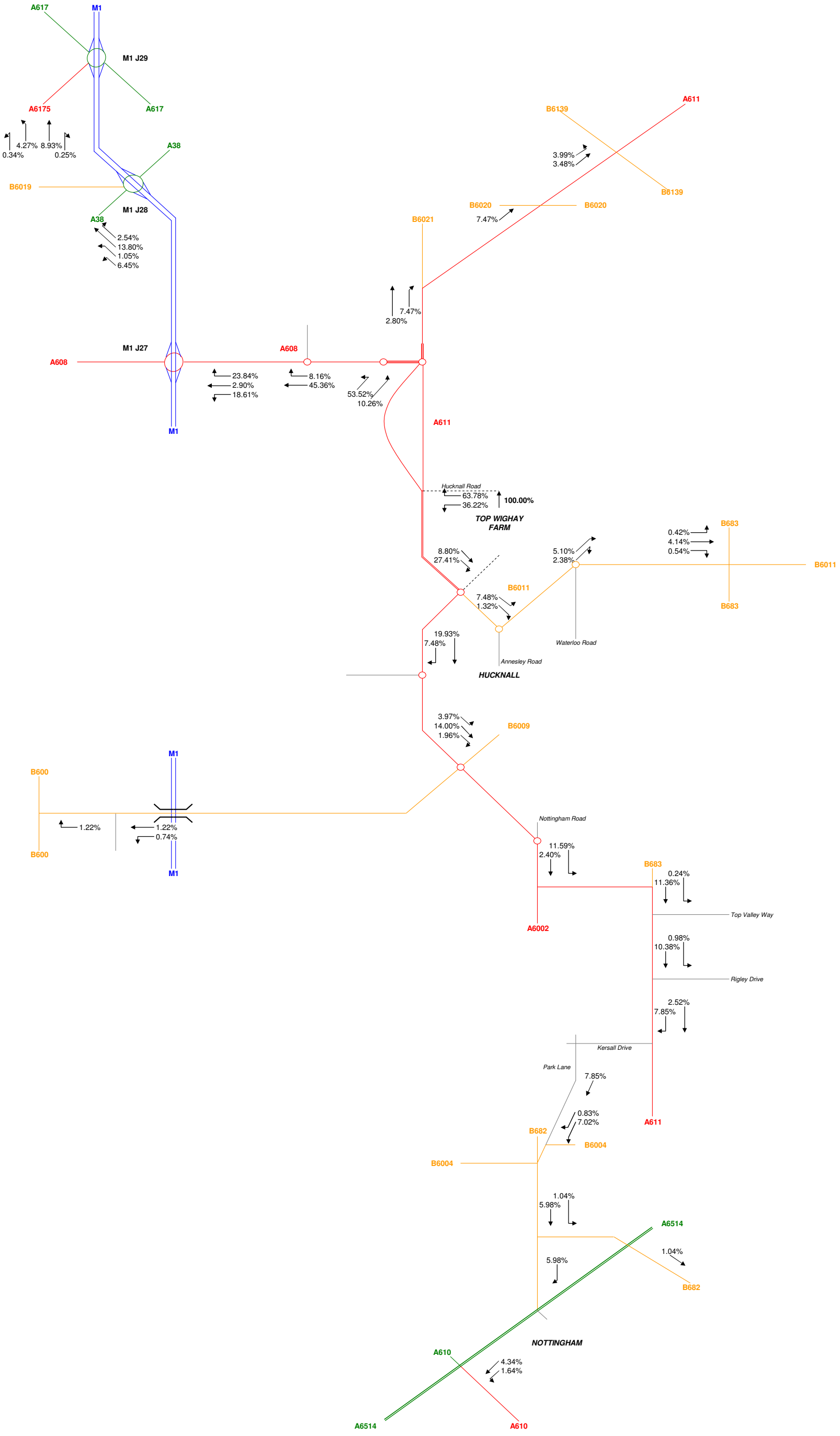
## Scenario 3c:

**Isochrone =** 60 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / Hucknall Road T-junction
**Direction =** Inbound



## Scenario 3d:

**Isochrone =** 60 minutes
**Gravity fn =** travel time$^2$
**Site access =** A611 / Hucknall Road T-junction
**Direction =** Outbound



# APPENDIX 2

# Air & Noise Traffic Flows - 500 Houses Scenario

*2010 AADT* *2010 18 hr AAWT from A46 HistoricTraffic Count Data* Development Traffic

*Factor =* *1.044*

*HGV % Fa* *1.084*

| | 2010 24 Hr AADT | | | 2010 24 18Hr AAWT | | | 2010 18 Hr AAWT Development Traffic | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Count** | **AADT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **In** | **Out** | **In Dev** | **Out Dev** | **Tot Dev.** | **HGVs** | **% HGV's** |
| 1 | 18023 | 745 | 4.13% | 18819 | 843 | 4.48% | 11.47% | 9.44% | 353 | 295 | 648 | 15 | 2.26% |
| 2 | 22677 | 876 | 3.86% | 23678 | 991 | 4.19% | 15.42% | 13.25% | 474 | 414 | 888 | 20 | 2.26% |
| 3 | 22904 | 885 | 3.86% | 23915 | 1002 | 4.19% | 15.42% | 13.25% | 474 | 414 | 888 | 20 | 2.26% |
| 4 | 21668 | 650 | 3.00% | 22625 | 736 | 3.25% | 53.84% | 56.29% | 1656 | 1759 | 3415 | 77 | 2.26% |

## Summary of Counts 2010

| | 2010 18hr AAWT Base | | | 2010 18hr AAWT Dev. Traffic | | | 2010 18hr AAWT Base+Dev | | | % Increases | | Assumed | Indicative $L_{A10,18h}$ dB Noise Level at 10m from kerb | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Count** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **Speed kph** | **Base** | **With Dev** | **Change** |
| **1** | 18819 | 843 | 4.48 | 648 | 15 | 2.26 | 19467 | 858 | 4.41 | 3.4% | 1.7% | 96 | 74.9 | 75.0 | **0.1** |
| **2** | 23678 | 991 | 4.19 | 888 | 20 | 2.26 | 24567 | 1012 | 4.12 | 3.8% | 2.0% | 96 | 75.8 | 76.0 | **0.1** |
| **3** | 23915 | 1002 | 4.19 | 888 | 20 | 2.26 | 24804 | 1022 | 4.12 | 3.7% | 2.0% | 96 | 75.9 | 76.0 | **0.1** |
| **4** | 22625 | 736 | 3.25 | 3415 | 77 | 2.26 | 26040 | 813 | 3.12 | 15.1% | 10.5% | 96 | 75.5 | 76.1 | **0.6** |

**TEMPRO Growth Factors**

2010 to 2011 = 1.0101

## Summary of Counts 2011

| **Count** | 2011 18Hr AAWT Base | | | 2011 18hr AAWT Dev. Traffic | | | 2011 18hr AAWT Base+Dev | | | % Increases | | Assumed | Indicative $L_{A10,18h}$ dB Noise Level at 10m from kerb | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **Speed kph** | **Base** | **With Dev** | **Change** |
| **1** | 19009 | 852 | 4.48 | 648 | 15 | 2.26 | 19657 | 866 | 4.41 | 3.4% | 1.7% | 96 | 74.9 | 75.1 | **0.1** |
| **2** | 23918 | 1002 | 4.19 | 888 | 20 | 2.26 | 24806 | 1022 | 4.12 | 3.7% | 2.0% | 96 | 75.9 | 76.0 | **0.1** |
| **3** | 24157 | 1012 | 4.19 | 888 | 20 | 2.26 | 25045 | 1032 | 4.12 | 3.7% | 2.0% | 96 | 75.9 | 76.1 | **0.1** |
| **4** | 22853 | 743 | 3.25 | 3415 | 77 | 2.26 | 26268 | 820 | 3.12 | 14.9% | 10.4% | 96 | 75.5 | 76.1 | **0.6** |

**TEMPRO Growth Factors**

2010 to 2012 = 1.0195

## Summary of Counts 2012

| | 2012 18Hr AAWT Base | | | 2012 18hr AAWT Dev. Traffic | | | 2012 18hr AAWT Base+Dev | | | % Increases | | Assumed | Indicative $L_{A10,18h}$ dB Noise Level at 10m from kerb | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Count** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **Speed kph** | **Base** | **With Dev** | **Change** |
| **1** | 19186 | 860 | 4.48 | 648 | 15 | 2.26 | 19834 | 874 | 4.41 | 3.4% | 1.7% | 96 | 75.0 | 75.1 | **0.1** |
| **2** | 24140 | 1011 | 4.19 | 888 | 20 | 2.26 | 25028 | 1031 | 4.12 | 3.7% | 2.0% | 96 | 75.9 | 76.1 | **0.1** |
| **3** | 24382 | 1021 | 4.19 | 888 | 20 | 2.26 | 25270 | 1041 | 4.12 | 3.6% | 2.0% | 96 | 76.0 | 76.1 | **0.1** |
| **4** | 23066 | 750 | 3.25 | 3415 | 77 | 2.26 | 26481 | 827 | 3.12 | 14.8% | 10.3% | 96 | 75.6 | 76.1 | **0.6** |

# Air & Noise Traffic Flows - 1000 Houses Scenario

*2010 AADT* *2010 18 hr AAWT from A46 HistoricTraffic Count Data* Development Traffic

*Factor =* *1.044*

*HGV % Fa* *1.084*

| | 2010 24 Hr AADT | | | 2010 24 18Hr AAWT | | | 2010 18 Hr AAWT Development Traffic | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Count** | **AADT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **In** | **Out** | **In Dev** | **Out Dev** | **Tot Dev.** | **HGVs** | **% HGV's** |
| 1 | 18023 | 745 | 4.13% | 18819 | 843 | 4.48% | 11.47% | 9.44% | 501 | 421 | 922 | 18 | 2.00% |
| 2 | 22677 | 876 | 3.86% | 23678 | 991 | 4.19% | 15.42% | 13.25% | 673 | 591 | 1265 | 25 | 2.00% |
| 3 | 22904 | 885 | 3.86% | 23915 | 1002 | 4.19% | 15.42% | 13.25% | 673 | 591 | 1265 | 25 | 2.00% |
| 4 | 21668 | 650 | 3.00% | 22625 | 736 | 3.25% | 53.84% | 56.29% | 2351 | 2512 | 4863 | 97 | 2.00% |

## Summary of Counts 2010

| | 2010 18hr AAWT Base | | | 2010 18hr AAWT Dev. Traffic | | | 2010 18hr AAWT Base+Dev | | | % Increases | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Count** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** |
| **1** | 18819 | 843 | 4.48 | 922 | 18 | 2.00 | 19741 | 862 | 4.36 | 4.9% | 2.2% |
| **2** | 23678 | 991 | 4.19 | 1265 | 25 | 2.00 | 24943 | 1017 | 4.08 | 5.3% | 2.5% |
| **3** | 23915 | 1002 | 4.19 | 1265 | 25 | 2.00 | 25180 | 1027 | 4.08 | 5.3% | 2.5% |
| **4** | 22625 | 736 | 3.25 | 4863 | 97 | 2.00 | 27488 | 833 | 3.03 | 21.5% | 13.2% |

| **Assumed** |
|---|
| **Speed kph** |
| 96 |
| 96 |
| 96 |
| 96 |

| **Indicative $L_{A10,18h}$ dB Noise Level at 10m from kerb** | | |
|---|---|---|
| **Base** | **With Dev** | **Change** |
| 74.9 | 75.1 | **0.2** |
| 75.8 | 76.1 | **0.2** |
| 75.9 | 76.1 | **0.2** |
| 75.5 | 76.3 | **0.8** |

**TEMPRO Growth Factors**

2010 to 2011 = 1.0101

## Summary of Counts 2011

| **Count** | 2011 18Hr AAWT Base | | | 2011 18hr AAWT Dev. Traffic | | | 2011 18hr AAWT Base+Dev | | | % Increases | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** |
| **1** | 19009 | 852 | 4.48 | 922 | 18 | 2.00 | 19931 | 870 | 4.37 | 4.9% | 2.2% |
| **2** | 23918 | 1002 | 4.19 | 1265 | 25 | 2.00 | 25182 | 1027 | 4.08 | 5.3% | 2.5% |
| **3** | 24157 | 1012 | 4.19 | 1265 | 25 | 2.00 | 25422 | 1037 | 4.08 | 5.2% | 2.5% |
| **4** | 22853 | 743 | 3.25 | 4863 | 97 | 2.00 | 27716 | 840 | 3.03 | 21.3% | 13.1% |

| **Assumed** |
|---|
| **Speed kph** |
| 96 |
| 96 |
| 96 |
| 96 |

| **Indicative $L_{A10,18h}$ dB Noise Level at 10m from kerb** | | |
|---|---|---|
| **Base** | **With Dev** | **Change** |
| 74.9 | 75.1 | **0.2** |
| 75.9 | 76.1 | **0.2** |
| 75.9 | 76.1 | **0.2** |
| 75.5 | 76.3 | **0.8** |

**TEMPRO Growth Factors**

2010 to 2012 = 1.0195

## Summary of Counts 2012

| | 2012 18Hr AAWT Base | | | 2012 18hr AAWT Dev. Traffic | | | 2012 18hr AAWT Base+Dev | | | % Increases | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Count** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** |
| **1** | 19186 | 860 | 4.48 | 922 | 18 | 2.00 | 20108 | 878 | 4.37 | 4.8% | 2.1% |
| **2** | 24140 | 1011 | 4.19 | 1265 | 25 | 2.00 | 25405 | 1036 | 4.08 | 5.2% | 2.5% |
| **3** | 24382 | 1021 | 4.19 | 1265 | 25 | 2.00 | 25646 | 1046 | 4.08 | 5.2% | 2.5% |
| **4** | 23066 | 750 | 3.25 | 4863 | 97 | 2.00 | 27929 | 847 | 3.03 | 21.1% | 13.0% |

| **Assumed** |
|---|
| **Speed kph** |
| 96 |
| 96 |
| 96 |
| 96 |

| **Indicative $L_{A10,18h}$ dB Noise Level at 10m from kerb** | | |
|---|---|---|
| **Base** | **With Dev** | **Change** |
| 75.0 | 75.2 | **0.2** |
| 75.9 | 76.1 | **0.2** |
| 76.0 | 76.2 | **0.2** |
| 75.6 | 76.3 | **0.8** |

# Air & Noise Traffic Flows - 1500 Houses Scenario

*2010 AADT* *2010 18 hr AAWT from A46 HistoricTraffic Count Data* Development Traffic

*Factor = 1.044*

*HGV % Fa 1.084*

| | 2010 24 Hr AADT | | | 2010 24 18Hr AAWT | | | 2010 18 Hr AAWT Development Traffic | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Count** | **AADT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **In** | **Out** | **In Dev** | **Out Dev** | **Tot Dev.** | **HGVs** | **% HGV's** |
| 1 | 18023 | 745 | 4.13% | 18819 | 843 | 4.48% | 11.47% | 9.44% | 649 | 548 | 1196 | 22 | 1.86% |
| 2 | 22677 | 876 | 3.86% | 23678 | 991 | 4.19% | 15.42% | 13.25% | 872 | 769 | 1641 | 31 | 1.86% |
| 3 | 22904 | 885 | 3.86% | 23915 | 1002 | 4.19% | 15.42% | 13.25% | 872 | 769 | 1641 | 31 | 1.86% |
| 4 | 21668 | 650 | 3.00% | 22625 | 736 | 3.25% | 53.84% | 56.29% | 3046 | 3265 | 6311 | 117 | 1.86% |

## Summary of Counts 2010

| | 2010 18hr AAWT Base | | | 2010 18hr AAWT Dev. Traffic | | | 2010 18hr AAWT Base+Dev | | | % Increases | | Assumed | Indicative LA10,18h Noise Level at 10m from kerb dB(A) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Count** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **Speed kph** | **Base** | **With Dev** | **Change** |
| **1** | 18819 | 843 | 4.48 | 1196 | 22 | 1.86 | 20015 | 865 | 4.32 | 6.4% | 2.6% | 96 | 74.9 | 75.1 | **0.2** |
| **2** | 23678 | 991 | 4.19 | 1641 | 31 | 1.86 | 25319 | 1022 | 4.04 | 6.9% | 3.1% | 96 | 75.8 | 76.1 | **0.3** |
| **3** | 23915 | 1002 | 4.19 | 1641 | 31 | 1.86 | 25556 | 1032 | 4.04 | 6.9% | 3.0% | 96 | 75.9 | 76.1 | **0.3** |
| **4** | 22625 | 736 | 3.25 | 6311 | 117 | 1.86 | 28936 | 853 | 2.95 | 27.9% | 15.9% | 96 | 75.5 | 76.5 | **1.0** |

**TEMPRO Growth Factors**

2010 to 2011 = 1.0101

## Summary of Counts 2011

| **Count** | 2011 18Hr AAWT Base | | | 2011 18hr AAWT Dev. Traffic | | | 2011 18hr AAWT Base+Dev | | | % Increases | | Assumed | Indicative LA10,18h Noise Level at 10m from kerb dB(A) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **Speed kph** | **Base** | **With Dev** | **Change** |
| **1** | 19009 | 852 | 4.48 | 1196 | 22 | 1.86 | 20205 | 874 | 4.33 | 6.3% | 2.6% | 96 | 74.9 | 75.2 | **0.2** |
| **2** | 23918 | 1002 | 4.19 | 1641 | 31 | 1.86 | 25559 | 1032 | 4.04 | 6.9% | 3.0% | 96 | 75.9 | 76.1 | **0.3** |
| **3** | 24157 | 1012 | 4.19 | 1641 | 31 | 1.86 | 25798 | 1042 | 4.04 | 6.8% | 3.0% | 96 | 75.9 | 76.2 | **0.3** |
| **4** | 22853 | 743 | 3.25 | 6311 | 117 | 1.86 | 29165 | 860 | 2.95 | 27.6% | 15.8% | 96 | 75.5 | 76.5 | **1.0** |

**TEMPRO Growth Factors**

2010 to 2012 = 1.0195

## Summary of Counts 2012

| | 2012 18Hr AAWT Base | | | 2012 18hr AAWT Dev. Traffic | | | 2012 18hr AAWT Base+Dev | | | % Increases | | Assumed | Indicative LA10,18h Noise Level at 10m from kerb dB(A) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Count** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **% HGV's** | **AAWT** | **HGV's** | **Speed kph** | **Base** | **With Dev** | **Change** |
| **1** | 19186 | 860 | 4.48 | 1196 | 22 | 1.86 | 20382 | 882 | 4.33 | 6.2% | 2.6% | 96 | 75.0 | 75.2 | **0.2** |
| **2** | 24140 | 1011 | 4.19 | 1641 | 31 | 1.86 | 25781 | 1041 | 4.04 | 6.8% | 3.0% | 96 | 75.9 | 76.2 | **0.3** |
| **3** | 24382 | 1021 | 4.19 | 1641 | 31 | 1.86 | 26023 | 1052 | 4.04 | 6.7% | 3.0% | 96 | 76.0 | 76.2 | **0.3** |
| **4** | 23066 | 750 | 3.25 | 6311 | 117 | 1.86 | 29377 | 867 | 2.95 | 27.4% | 15.6% | 96 | 75.6 | 76.5 | **1.0** |

Date: 8 February 2012
Our ref: 43811
Your ref:

Nick Crouch
Nottinghamshire County Council

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CW1 6GJ

T: 0300 060 3900

**BY EMAIL ONLY**

Dear Nick,

**Greater Nottingham Aligned Core Strategy – Proposed Top Wighay Allocation (500, 1000 and 1500 housing scenarios)**

**Updated assessments of potential noise and air pollution impacts on breeding nightjar and woodlark**

Thank you for re-consulting Natural England in relation to the above assessments. Your correspondence was received by email on 20 January 2012.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the bene□t of present and future generations, thereby contributing to sustainable development.

We have considered the information in relation to Natural England's interests but our comments are focused on the following matters:

We refer to our previous response dated 1/12/2011 and note that the screening exercise to consider the potential impacts on breeding nightjar and woodlark as a result of land allocations included in the Greater Nottingham Aligned Core Strategy has been repeated based on the di□erent housing options. We commend the Council for continuing to adopt a 'risk based approach', as advocated in our Advice Note (July 2011). We believe this comprehensive level of assessment represents a robust evidence base on which the forward plan can continue with con□dence knowing that the decisions have been future proofed in order to satisfy subsequent statutory reviews of consents in the event of a Special Protection Area being classi□ed in the Sherwood Forest area.

**Noise Impact Assessment**

The assessment has predicted the change in noise of between 0.1 – 1.0 dB at the receptor sites and according to the HA guidance for this level of change the magnitude of impact is negligible/minor.

**Air pollution impact assessment**

The results of the Stone Hills Farm Assessment have predicted a maximum PC of 0.005 N/ha/kg for 1500 houses which represents;
Conifer Plantation - 0.03 – 0.1 % of CLo
Lower Heathland – 0.03 – 0.05% of CLo

Natural England considers that where the process contribution to nitrogen deposition is less than 1% of the critical load, the emission is unlikely to have a significant effect.

**Conclusion**

Both the air pollution and noise impact assessments have concluded no significant effect.

On the issue of the possibility of a future SPA, Natural England can only advise that it is for the Council to take a risk based approach when considering the effects of the plan, and it is hoped that the information Natural England has been able to give is of some assistance to the Council in this regard. Unfortunately, whilst understanding the difficulty local planning authorities face with regard to how they should consider forward planning and development management applications within the Sherwood Forest area, Natural England is unable to support or object to proposals in terms of their potential effects upon an SPA that has not yet been formally proposed.

We refer you once again to the Advice Note which states Local Planning Authorities should seek to satisfy themselves that forward plans and planning applications contain sufficient objective information to ensure that all potential impacts on the breeding nightjar and woodlark populations have been adequately avoided or minimised as far as is possible using appropriate measures and safeguards.

In line with Natural England's Advice Note we acknowledge that Nottinghamshire County Council has obtained appropriate information to consider the potential impacts of the plan on breeding nightjar and woodlark at this strategic level based on the level of information available for the proposed Top Wighay allocation. None the less we recommend any subsequent development proposals coming forward should be encouraged to include mitigation measures to reduce the potential adverse effects on breeding nightjar and woodlark as far as possible.

For any correspondence or queries relating to this consultation only, please contact Liz Newman at the Nottingham Office on 0300 060 0789/ 07900 608387. For all other correspondence, please contact the address above.

Yours sincerely,

Elizabeth Newman
Lead Adviser
Land Use Operations Team
Elizabeth.newman@naturalengland.org.uk

*(10)*

# *GREATER NOTTINGHAM ALIGNED CORE STRATEGIES*

# *SUPPLEMENTARY INFORMATION (GEDLING ADDITIONAL SHLAA SITES)*

# *HABITATS REGULATIONS APPRAISAL SCREENING RECORD*

**Prepared by**
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Doc. Ref. 1778 GNACS supplementary screening Gedling SHLAA v4 3 Feb 2012

## Background

1. This report provides supplementary information to the Habitats Regulations Appraisal (HRA) record for the Greater Nottingham Aligned Core Strategies (GNACS), February 2010 option for consultation[1]. It should be read and interpreted in conjunction with the original report.

2. The original HRA was undertaken in accordance with the opinion of Advocate General Kokott given to the European Court of Justice in Case C-6/04 EC vs UK. Paragraph 49 states that "*adverse effects on areas of conservation must be assessed at every relevant stage of the procedure to the extent possible on the basis of the precision of the plan. This assessment it to be updated with increasing specificity in subsequent stages of the procedure*". With three specific exceptions, the original HRA concluded that the ACS, including the overall level of growth, would not be likely to have a significant effect on any European site, alone or in-combination with other plans or projects.

3. One of the three exceptions identified uncertainties as to the effects of the proximity of development to the Sherwood Forest prospective SPA. Paragraphs 1.20 to 1.23 of the original screening report explained why and how the prospective Sherwood Forest SPA should be included in the assessment, on a risk-based approach, applying the terms of Article 4(4) of the Birds Directive. It concluded in paragraph 1.23 as follows

   *Before formal classification the area would first be a pSPA, and may remain of that status for some time. Owing to judgments in the European Court of Justice, a plan may only be adopted if it is certain that the plan will not cause pollution or deterioration of a pSPA or significant disturbance of the bird species for which a pSPA has been proposed (either alone or in combination with other plans or projects) and the derogation provisions of Article 6.4 (regulation 103) do not apply[2]. This is a more strict protection than that in regulations 102 and 103 of the Habitats Regulations applying to classified SPAs. In light of this, and in order to 'future-proof' the ACS, it has been decided that, on a precautionary basis, this appraisal will treat the prospective Sherwood Forest SPA as if it was a pSPA, thus affording it the equivalent to the highest level of protection during appraisal that it would have at any stage in its potential route to classification.*

4. The original HRA was only able to assess general information on the development locations for the allocation of 52,050 new homes. Information available at the time of the assessment was given in policy 2 of the spatial strategy which provided for:

   a. 25,320 homes in the Principal Urban Area of Nottigham
   b. 4,200 new homes in each of two SUEs East of Gamston and South of Clifton
   c. 1,480 new homes in one or more SUE in Broxtowe yet to be determined
   d. 4,090 homes in or adjoining Hucknall Sub Regional Centre including SUEs at Top Wighay Farm and north of Papplewick Lane in Gedling
   e. 4,420 new homes in or adjoining Ilkeston Sub-Regional Centre (including a SUE at Stanton)
   f. Up to 8,340 new homes elsewhere in Greater Nottingham

5. The original HRA was undertaken to the extent possible on the basis of the precision of the plan and the general development locations identified. Section 5 considered each of

[1] David Tyldesley and Associates, Sept 2010. Greater Nottingham Aligned Corse Strategies Habitats Regulations Appraisal record, February 2010 option for consultation

[2] European Court of Justice in Case C-244/05 *Bund Naturschutz in Bayern eV and others v Freistaat Bayern.* European Court of Justice in Case C-374-98 *Commission v French Republic* (*"Basses Corbieres"*)

the development locations identified above; paragraph 5.7 stated “a conclusion of no likely significant effect as a result of proximity of urban development to the prospective SPA cannot be determined without checking to see where the ACS is directing new development”. Paragraph 5.13 recommended that, in the absence of more detailed analysis, a precautionary approach should be adopted and Policy 2(1)(e) should preclude urban extensions north of the B6386 north of Calverton, and west of the A60 and north of Ricket Lane at Ravenshead.

6. Since the completion of the original HRA Gedling Borough Council is considering specific development locations as part of their Strategic Housing Land Availability Assessment (SHLAA). In light of the conclusions recorded in the original HRA and being mindful of the need to update the assessment with increasing specificity during the development of the core strategy, Gedling Borough Council have appointed DTA to undertake a screening of the emerging development locations to inform their final allocation selection.

7. The specific locations to be screened are those marked on the SHLAA maps as follows:

    a) **Sites around Bestwood Village**: include 20, 26, 27 and 28. The total is around 800 dwellings; primarily to the north of the village.

    b) **Sites around Calverton:** include 32, 33, 35, 36, 37, 45, 47, 540, 587, 588 and 649. The total is around 1700; mainly to the north-west and south-west of the village, but none north of the B6386.

    c) **Sites around Ravenshead:** include 39, 40, 86, 536 and 648. The total is around 450 dwellings; mainly to the south of the village, but none west of the A60 or north of Ricket Lane

8. The effects of the overall increase in dwellings within the Greater Nottingham area was assessed as part of the original HRA; further assessment is not therefore required in relation to increases in population. However the original HRA did not assess the actual location of proposed development under policy 2(1)(e) because this information was not available at the time. This screening is to identify whether development in the proposed locations identified above would have a likely significant effect on any European sites as a result of the scale and location of the development.

**Screening of proposed sites around Bestwood Village**

9. Bestwood village is located approximately 4km from the nearest boundary of Sherwood Forest prospective SPA. There are no potential impacts in addition to those already assessed as part of the original HRA that would result from development at this distance from the site boundary.

10. All other European sites are located over 20km from the village, and the development locations are not considered to represent a likely significant effect in terms of the proximity of development.

11. **The proposed development locations around Bestwood village would not be likely to have a significant effect, either alone or in-combination, on any European site as a result of the scale and location of proposed development**.

12. At the time of writing we are aware that Ashfield and Mansfield Council are currently undertaking their own HRAs which we do not have access to. Potential in-combination effects with development provided for in Ashfield and Mansfield are considered to be

unlikely but cannot be excluded without further reference to relevant information on proposed development locations.

**Screening of proposed sites around Calverton**

***Introduction***

13. The Council has identified 11 potential allocations around Calverton for approximately 1700 new dwellings. This assessment assumes that all of the 11 sites would be developed for a total of 1700 dwellings. The two closest parts of the prospective SPA to Calverton are:

    a) Foxcovert plantation (Nottinghamshire Wildlife Trust). Because the former A614 junction has been closed for several years, this is accessed via Gravelly Hollow from the Gravelly Hollow / Main Street / B6386 junction; and
    b) Watchwood Plantation (Forestry Commission). This is accessed both from Gravelly Hollow (where there is a car park and access) and the A614.

14. The closest part of the village, located west of Briar Gardens, off Main Street, is about 1,130m from the prospective SPA, at the plantation south-west of Gravelly Hollow. This linear distance is also the actual travel distance, because Main Street and Gravelly Hollow provide a direct and straight route between the village and the plantation.

15. The potential allocation 6/32 would reduce this distance to about 1,000m (straight-line and travel distance). From the north-west corner of potential allocation 6/47 to the nearest part of the prospective SPA would be about 900 to 950m, straight-line distance. However, because of the intervening colliery spoil tip area, this would be a travel distance in the order of 1,450m to the nearest part of the prospective SPA at Gravelly Hollow, assuming that an access was provided at the corner of the potential allocation. Such an access is regarded as most unlikely given that the former Hollinwood Lane was closed for road safety reasons at this point. Thus, the likely travel distance via Hollinwood Lane and Main Street would be at least 1,800m

16. There are conceivably three potential effects relevant to the Calverton allocations. Firstly, recreational pressure; secondly, urban proximity; and thirdly, air pollution effects.

***Recreational pressure generally***

17. The potential effects associated with the overall increased recreation pressure on Sherwood Forest prospective SPA were considered in paragraphs 4.31 and 4.58-4.71 of the original HRA. In paragraph 4.80 it was concluded that in order to avoid the unusually precautionary approach of the assessment in respect of the prospective SPA, more information is required. Paragraph 4.70 concludes that the overall, in combination, increase in recreational pressure (7% to 2026 or 0.035% per annum) would not be likely to be a significant effect on the prospective SPA. This was essentially because such low levels of increase, over such a long time period, would allow management of the areas affected to be adjusted to accommodate changes in the levels, patterns and type of access and visitor behaviour and that such adjustment can be expected on the basis of objective information. However, this does not mean that significant effects on the prospective SPA would not occur as a result of urban proximity, depending on where the development was located and its scale (see for example paragraphs 4.71 and 5.6 of the original HRA).

***Urban proximity***

18. There are two principal aspects to the question of urban proximity in the case of Calverton. Firstly, whether the new allocations may be so close to the prospective SPA that the effects of increased noise and light, predation by cats, garden encroachment, increased fires, fly tipping etc would be likely to be significant (here referred to as ‘close

location'); secondly, whether the scale and location of the development would be such as to lead to so high a concentration of new visitors, to a specific part of the prospective SPA, that the assumptions (in the original HRA) about the effects of the overall growth of recreational pressure on the prospective SPA cannot be relied upon (here referred to as 'scale and location').

*Close location*

19. Paragraphs 5.8 and 5.9 of the original appraisal discussed how the question of distance between urban areas and heathland SPAs, supporting Nightjar and Woodlark (amongst other species), has been established elsewhere. Indeed, the policies relating to such buffer zones have been based on thorough research, developed from a sound evidence base, and rigorously tested in examinations and public inquiries, for example the policies relating to the Dorset and Thames Basin heaths[3]. In summary it is widely established that such close location effects can be avoided where there is a 400m linear distance separation between the urban development and the sensitive heathland habitats[4].

20. That was the basis of the advice in the original appraisal that recommended that urban development was not located north of the B6386 at Calverton, because that gave a precautionary (approximately) 1,000m buffer between Calverton and the prospective SPA. Given the distance of the potential allocations summarised in paragraph 15 above, where it will be seen that he protential allocations could reduce the distance between the village and the prospective SPA by about 200m to about 900m – 950m, it is concluded that there would not be a significant effect on the prospective SPA, either alone or in combination with other plans or projects, as a result of the effects of close location, including noise and predation by cats.

*Scale and location*

21. The question therefore arises as to whether the scale and location of proposed development at Calverton could have a likely significant effect on the prospective SPA.

22. As indicated above, the original HRA states at paragraph 5.9 that "*If the area north of the B6386 was not used for any urban expansion of Calverton, there would be no likely significant effect on the indicative core areas of the prospective SPA at Watchwood Plantation (FC), Sansom Wood (FC) and the NWT reserve at Foxcovert Plantation as a result of proximity to urban areas*".

23. This conclusion was reached on the basis of policy 2(1)(e) which provided for "up to 8,340 homes being located elsewhere throughout Greater Nottingham, including in or adjoining 18 identified settlements. On the basis of the precision of the plan at that time, and particularly that policy 2(1)(a-d) specifically identified larger scale developments, the decision recorded in respect of development around Calverton, from policy 2(1)(e), did not anticipate that 20% of the overall allocation of 8,340 homes might be located between the prospective SPA and Calverton. This adjustment to the plan has been made in light of the prospective delays to the delivery of housing at Gedling.

24. The 2001 census figures gave a population figure of 6,870 residents in Calverton, with a mid 2007 estimate of 6,690[5]. With an average of 2.3 occupants per house, an additional 1700 dwellings will therefore represent an increase in overall population of approximately 58%. In light of this increase being substantially more than anticipated at Calverton in

[3] Liley, D., Clarke, R. T., Underhill-Day, J. & Tyldesley, D. (2006) Evidence to support the Appropriate Assessment of development plans and projects in south-east Dorset. Footprint Ecology / Dorset County Council
[4] For example the former South East Plan (RSS) and the Bracknell Forest Borough Council adopted Core Strategy
[5] Nottinghamshire County Council 2007 Ward Population Estimates

the original HRA, this screening reconsiders the proposed growth in light of these figures and a more detailed examination of the local circumstances.

25. The plantations are open to the public and access to them is positively encouraged by both the Trust and the FC via web sites and physical on-site facilities including parking provision and paths. They are in close proximity, for car-borne visitors, from the northern parts of the Nottingham conurbation, especially areas such as Arnold, and Gedling, it is therefore not surprising that they are subject to what locally may be regarded as relatively high levels of public access, particularly walkers and dog walkers.

26. Consequently to improve the assessors' understanding of the local situation, a brief (2 hour) site visit to the general area was undertaken on Sunday 29th January 2012 in fine weather, at the likely afternoon peak time for a 'weekly' family or dog walk (as opposed to shorter, convenience walks or dog walks during the week). It was observed that about 20 - 22 cars could be physically parked along the cul-de-sac road from Gravelly Hollow towards the A614, in the parking spaces provided (c.7) the turning area (c.4) and informally along the verges and other entrances to the plantations, without unreasonably obstructing emergency and management accesses. At 15 00 hrs a peak total of 13 cars were parked there. Nine cars were associated with dog walkers, one car with walkers without a dog. The purpose of the visit of the occupants of the other three cars was not certain, the cars remained throughout the site visit period.

27. People were observed walking dogs along heavily used pathways through the plantations and on an equally well used path around an arable field to the south east of the plantations. No one was observed on any part of the Coal Authority area between the plantations and the B6386 (former colliery spoil disposal area and associated yards and drainage lagoons). No one was observed to walk or cycle to the plantations; all visitors were therefore car-borne. The only accesses observed to be used were those into the plantations from the lane and via a gateway and gaps in the hedge to the arable field. An access with limited parking is available off the A614 into Watchwood Plantation, which, from empirical knowledge is known to be used by up to three cars at a time, but was not observed to be used on this occasion.

28. It was noted that the entire B6386 northern road frontage of the Coal Authority land is secured by a 1.8m high chain link security fence (behind the hedge or frontage scrub / trees) with a securely locked access. The fence has been breached at three points, but probably by children seeking adventure. The breaches would not easily be negotiated by conventional walkers or dog walkers, who in any event, if originating their walk in Calverton, would have to walk along and across the relatively busy B6386, with no footway available to provide refuge from fast moving traffic. There were no established pathways from the B6386 into any part of the Coal Authority area or the fields along the B6386. The road (called Main Street) from Calverton to Gravelly Hollow has no footway. There are rough grass verges along which it was uncomfortable to walk. Traffic along Main Street was frequent. Walking along the carriageway would be risky and inconvenient because of the continuous need to step on to the verge to take refuge from two-way passing traffic.

29. Access to the Coal Authority area from Calverton across the B6386 is further impeded by industrial and transport developments on the old colliery site and privately owned land elsewhere. Northbound pedestrian access from Hollinwood Lane (vehicular access closed) is evident from a pathway that is present, but wear of the pathway indicated that use did not appear to be regular or heavy. If significant numbers of people were walking from Calverton to the prospective SPA, it would be expected that a pedestrian route would be identifiable, unless only the surfaced carriageway was used. No such route could be identified.

30. On the basis of these observations and in absence of a structured recreational access survey, it was concluded that walking the 1km to 3km (a 2km to 6km round trip) from any part of Calverton village to Watchwood or Foxcovert plantation entrances would, in places, be risky, inconvenient and unattractive on a Sunday afternoon. No one was observed attempting to do so in the limited period of the site visit, even though it would theoretically be in walking distance and there were several walkers around Calverton generally. There was no other more convenient or safer way of reaching the prospective SPA from Calverton except by cycling or driving to an access point.

31. From this limited observation it is concluded that existing levels of pedestrian access to the prospective SPA from Calverton are likely to be insignificant in terms of the HRA and tends to explain the observed absence of non-car-borne visitors to the prospective SPA. The origin of car borne visitors would require an interview survey, but the limited opportunities for physically parking a car are likely to impose a limitation on car borne visitors irrespective of the origin – whether from Calverton or elsewhere.

32. Assuming there is no change to the existing situation, other than the development of 1700 dwellings on the 11 potential allocation sites and related infrastructure, it is considered that there would be no likely significant effect on the prospective SPA as a result of increased pedestrian visitors from Calverton. However, even without any recreational survey information or modelling, it is inconceivable that a proportion of existing car-borne visitors to the prospective SPA do not come from Calverton, the closest settlement; and that that number would not rise, at least in proportion, as a result of the development. The issue is whether the increased number of car-borne visitors would be absorbed without adverse effects through the gradual adaptation of management in the prospective SPA, or whether the risk of significant increased disturbance to any SPA species breeding in this part of the prospective SPA could not be ruled out on the basis of objective information.

33. We understand that Woodlark hold territory in Watchwood Plantation (east of the Foxcovert Plantation), and we have observed that suitable habitat for Nightjar breeding and foraging occurs within both plantations. On the information currently available the likely effects of such a high concentration of increased population to the north west of Calverton causing significant additional disturbance cannot be excluded, without assuming mitigation measures would be in place that are currently not in place or proposed (though they could be included in the plan).

***Air pollution effects***

34. The effects of air pollution generally on the prospective SPA are discussed in paragraphs 4.4 to 4.30 of the original appraisal. The potential allocations are all too distant from the prospective SPA to have air pollution effects other than those associated with increased traffic movements. The effects of increased traffic are limited to increases on roads which lie within 200m of the prospective SPA.

35. The potential allocations are currently being subject to transportation modelling. Consequently, at this stage, the effects on air pollution can only be based on the general location of the development relative to the habitats of the prospective SPA and likely traffic routes and increases that could affect the prospective SPA as may be judged by commonsense and local knowledge.

36. Traffic leaving Calverton in an easterly or southerly direction would not pass through or close to any parts of the prospective SPA. Traffic leaving the village in a northerly direction, along Mansfield Lane, may turn onto the B6386 and go to the roundabout on the Oxton bypass (A6097); or it may cross the B6386 and travel along Whinbush Lane to

join the A614 at the Longdale Lane roundabout. Such north bound traffic would be unlikely to lead to increases in traffic levels of a scale that could reasonably have a significant effect on the prospective SPA. Traffic leaving the village northbound would be very unlikely to travel south down the A614 towards Nottingham, from the Longdale Lane roundabout. If the destination of the trip is towards Nottingham, traffic is most likely to travel westwards out of the village along Main Street and thence south down the B6386, or leave the village southwards up either George's Lane or Bonner Hill to Mapperley Plains. None of these journeys would appear likely to lead to significant increases in traffic levels on the A614 at Foxcovert or Watchwood Plantations. Unless the outcomes of the transport modelling show differently, it is concluded that the increase in traffic levels likely to arise from the potential allocations in Calverton would not be likely to have a significant effect on any part of the prospective SPA.

***Consultations***

37. Informal contact was made with both Natural England and the Wildlife Trust to explore the likely effects of this broad scale of development to the north-west of Calverton on Foxcovert and Watchwood Plantations.

38. Natural England replied by e mail dated 25th January 2012, copy attached as Appendix 1 to this report. It is consistent with the findings of this screening report and does not raise issues not addressed herein.

39. The Wildlife Trust replied by letter dated 26th January 2012 (sent electronically on 30th January). Much of the letter is about why the Council should undertake an assessment of the effects on the prospective SPA, but the Trust had been advised that such an assessment was continuing and that we had been commissioned to undertake the initial screening exercise. The original HRA made it clear that we were applying Article 4(4) of the Birds Directive and shadowing the HRA procedures on a risk based approach. The letter refers to assessment under regulation 61 and whether planning permission could be granted, but this may be the result of reiterating other advice because the current work is related to the plan, rather than the subsequent planning applications. The Core Strategy and the allocations are assessed under the provisions of regulation 102.

40. The letter refers to the Woodlark as a European Protected Species, but for clarification, the Woodlark (*Lullula arborea*) is not a European Protected Species, to which Part 3 of the 2010 Habitats Regulations apply. Rather it is a bird species for which Member States have specific duties (including the classification of SPAs) under Articles 1 to 4 and Annex I of the Birds Directive. Effects on green infrastructure generally are not matters for the screening appraisal of the prospective SPA. In terms of the matters relating to the prospective SPA, it reaches a conclusion broadly concurrent with that of this appraisal. However, there are two important points which we would comment upon in light of the potential need for appropriate assessment, and some matters that the Council may wish to clarify with the Trust.

41. We reject the notion that an increase in predation by domestic cats would be likely to be significant at a distance of about 1km from the prospective SPA. We are aware of the extensive research into predation by domestic cats but we know of no scientific basis for this assertion. The buffer zone regarded as adequate to avoid significant effects from cats predating SPA birds, in all other cases we are aware of, is included within a 400m exclusion zone. An argument that significant predation by cats could occur from development five times this distance would need to be supported by research and a detailed examination of the local circumstances.

42. We are not sure how the Trust has concluded that "substantive traffic increases" would have a likely significant effect on the prospective SPA by leading to Nitrogen deposition

that would render vegetation in the prospective SPA unsuitable for Nightjar and Woodlark. In light of the discussion in paragraphs 34 - 36 and in absence of transport modelling to show that traffic could have such an effect, our advice is that it would not be likely to have such an effect in this case, and need not form part of the 'appropriate assessment' stage.

43. Detailed discussions with the Trust are outside our current brief. We would therefore suggest that the Council explores the points in paragraphs 41 and 42 above and the following points with the Trust, to improve understanding of the issues they raise. This would include the basis on which they consider that:

    a) the increase in use of green spaces including the prospective SPA would be 'considerable';
    b) impacts on the breeding Woodlark would be '*serious* detrimental effects' ; and
    c) what are the other plans and projects that the Trust is including when reaching the conclusion of likely significant effects in combination, as a result of recreational impacts, predation by cats and air pollution effects on vegetation

***Conclusions***

44. It follows from the above assessment that in line with the Waddenzee ruling of the ECJ it cannot be excluded on the basis of objective information that the proposed allocation of land for 1700 dwellings at Calverton, as proposed in the 11 potential SHLAA sites, would undermine the conservation objectives of an SPA. It would therefore, alone, be likely to have a significant effect on the prospective Sherwood Forest SPA in the absence of mitigation measures.

45. As indicated in paragraph 12 above, we are aware that Ashfield and Mansfield Council are currently undertaking their own HRAs which we do not have access to. Potential in-combination effects with development provided for in Ashfield and Mansfield are considered to be unlikely but cannot be excluded without further reference to relevant information on proposed development locations.

46. If adequate avoidance and mitigation measures were built into the plan before it was next screened for likely significant effects, it would not require appropriate assessment before being adopted. We therefore turn to potential mitigation measures.

47. If a permutation of most of the mitigation measures, listed below, could be implemented in a planned and systematic way, it should avoid the likelihood of a significant effect on the prospective SPA by the development at Calverton, alone or in combination with other plans or projects:

    a) Managing car parking provision outside the Watchwood Plantation entrance car park on Gravelly Hollow lane; restricting the proliferation of verge parking and controlling informal parking and ensuring no new parking provision is made to facilitate access to the prospective SPA from either Gravelly Hollow lane or the A614.

    b) Avoiding the provision of a footway along either side of Main Street west of Hollinwood Lane down to the B6386.

    c) In agreement with the land owner, encouraging continued and further use of the perimeter of the adjacent arable fields in preference (or addition) to the plantations.

d) Maintaining the integrity of the fence along the Coal Authority frontage of the B6386.

e) Providing high levels of open space and attractive green infrastructure within or otherwise in association with the development particularly to facilitate dog walking.

f) Sustaining the provision of good quality information for walkers and dog walkers using the plantations and, if necessary, raising the level of wardening at Foxcovert and Watchwood plantations during the breeding season to encourage people to keep dogs on a lead and to stay on defined footpaths.

g) Encouraging the use of non-SPA sites for walking and dog walking.

h) Reviewing the alignment of footpaths in the plantations in light of the location of breeding territories of the Annex 1 species

i) Initiating a forum to explore other ways in which the access and habitat management of the prospective SPA could be coordinated to maximise recreation potential whilst ensuring no significant adverse effect on the breeding populations of Annex 1 birds for which it may be classified.

48. The above assessment assumes that the Coal Authority land between the B6386 and the prospective SPA remains closed to public access, and therefore acts as a 'buffer' protecting the prospective SPA. However, opening the area for managed public access in a planned way, could also be seen as a positive measure, because this area would be likely to act as an alternative to the prospective SPA, potentially of at least equal, if not greater, attraction for dog walkers, especially if the mitigation measures described above were in place and safe and convenient access on foot from Calverton and / or the B6386 was provided. A threat to the prospective SPA could come from a gradual attrition of the impediments to access, such that public access grew steadily without being managed in association with the prospective SPA plantations. This could lead to an unmanaged increase in visitors to the area, the effects of which the Wildlife Trust and FC may find more difficult to manage on their land.

49. If an appropriate assessment is undertaken it should be informed by improved evidence in relation to (at least) the following key issues:

a. records of the number and distribution of territories of Nightjar and Woodlark in the Foxcovert and Watchwood plantations and any occurrences outside these areas;

b. the (cyclical) distribution of potential breeding habitats for Nightjar and Woodlark in the plantations relative to footpaths;

c. a structured visitor survey to establish likely numbers, characteristics, timing, duration, walking route and origin of visitors and purpose of visit to the prospective SPA and surrounding areas, including the arable fields and Gravelly Hollow lane;

d. the mitigation measures described above;

e. the likely long-term future of the Coal Authority land; and

f. how the access and habitat management of the prospective SPA could be coordinated to maximise recreation potential whilst ensuring no significant adverse effect on the breeding populations of Annex 1 birds for which it may be classified.

***Proposed development of Parish Council land***

50. In addition to the potential allocations on the SHLAA map, there is a possibility of residential development on the Parish Council land along the northern frontage of Main Street, west of Hollinwood Lane, for approximately 400 to 450m, with a possible cemetery on the remaining frontage near the B6386 crossroads.

51. Such a development proposal would have the effect of reducing the distance between the prospective SPA and the village by another 450m (down to 550m) and importantly would almost certainly lead to the provision of a footway along at least the northern side of Main Street down to the junction. From there, once across the busy B6386, the walk to the prospective SPA would be along a quiet cul-de-sac. Consequently, such a proposal would be likely to have a significant effect on the prospective SPA and should be subject to an appropriate assessment. It cannot be assumed that the mitigation measures listed in paragraph 47 above would enable the Council to ascertain that there would not be an adverse effect on the integrity of the prospective SPA.

**Screening of proposed sites around Ravenshead**

52. An Important Bird Area (IBA) identified as part of the Sherwood Forest prospective SPA abuts the village to the west, on the west of the A60. The area identified as IBA is not generally available to public access and impacts associated with recreational pressures can therefore be excluded on the basis of objective information. There are no potential impacts in addition to those already assessed as part of the original HRA that would result from development at the proposed locations.

53. There are no other European sites within 10km of Ravenshead.

54. **The proposed development locations to provide up to 450 dwellings around Ravenshead will have no likely significant effect, either alone or in-combination, on any European site as a result of the scale and location of development.**

55. At the time of writing we are aware that Ashfield and Mansfield Council are currently undertaking their own HRAs which we do not have access to. Potential in-combination effects with development provided for in Ashfield and Mansfield are considered to be unlikely but cannot be excluded without further reference to relevant information on proposed development locations.

## Appendix 1

## Text of the Natural England E mail dated 25th January 2012

**From:** Newman, Elizabeth (NE) [mailto:Elizabeth.Newman@naturalengland.org.uk]
**Sent:** 25 January 2012 16:31
**To:** Caroline Chapman
**Subject:** RE: Gedling SHLAA and Sherwood Forest prospective SPA (Foxcovert plantation)

Hi Caroline

Apologies for not getting back to you sooner, this week has been hectic in the mornings so I have not been able to call you.

Yes I am aware that Gedling are now having to consider new sites to deliver their housing provision. I had a meeting with Alison in the new year where she provided an indication of the preferred locations for growth and we briefly examined their proximity to the habitats that form part of the Sherwood Forest prospective SPA.

In the case of Calverton it was noted that the potential development sites (I think from memory to the north west of the village) were within close proximity to Foxcovert and Watchwood? Plantations, the later which forms part of NE's indicative core area.

We discussed how the assessment should consider the potential risks from the development on breeding nightjar and woodlark as recommended in NE's Advice Note (July 2011) and identified that in this situation potential risks may include:

- ? disturbance from increased noise and traffic accessing the new development
- ? recreational pressure

However we did note that the road (B6386) may act as a physical barrier. I queried the status of the former colliery site however Alison was not sure what the access arrangements were to this site or the use of other footpaths in the area that may connect to the Foxcovert and Watchwood plantations and I advised that this would need to be examined further. Any potential impacts would need to be addressed through appropriate mitigation measures, such as the provision of SANGs, to ensure that all potential impacts on the breeding nightjar and woodlark population have been adequately avoided or minimised as far as possible.

Unfortunately I do not know any details about the ownership or management of these sites. Foxcovert plantation is a Local Wildlife Site but I am unsure about Watchwood plantation. I have emailed my land-management colleagues in the Nottinghamshire team to see if they can offer any local knowledge but as yet have not heard back from them.

Do you know if there are other amenity areas in Calverton that residents would be able to use or the amount of GI that will be delivered as part of this development?

If I find out any further information that I think would be useful I will try and call you or email you asap.

Regards

Liz Newman

**APPENDIX 2**
**TEXT OF THE NOTTINGHAMSHIRE WILDLIFE TRUST LETTER DATED 26TH JANUARY (received 30th January 2012)**

Caroline Chapman
Senior Specialist - Habitats Directive
David Tyldesley and Associates
Sherwood House
144 Annesley Road
Hucknall
Notts NG15 7DD

26th January 2012

Dear Caroline

**Re: HRA Screening Assessment for Gedling's Potential Housing Allocation Sites**

Thank you for consulting us on the likely impacts of Gedling's potential housing allocations in the vicinity of Calverton on Foxcovert Nature Reserve and the Sherwood SPA.

We consider that the proposal to increase Calverton's housing stock by 1700 dwellings will have an impact on the surrounding open greenspaces, including NWT's Foxcovert Nature Reserve and the adjacent FC woodland. Currently the reserve is not close to extensive residential areas and is therefore usually 'visited' by people who make the effort to travel by car. As a result the reserve copes with the current level of disturbance, although visitors who fail to pick up after their dogs remain a problem. The proposed allocation sites to the north and west of Calverton have the effect of bringing the residential areas closer to the reserve and, for some, within walking distance, which is likely to result in an increase in disturbance from visitors and their dogs. An increase in predation by cats is also possible.

Should the proposal to increase Calverton's housing stock by 1700 dwellings go ahead, the increase in use of local greenspaces such as Foxcovert Reserve, Burnt Stump Country Park and the nearby Forestry Commission woodlands is likely to be considerable. It should be noted that the FC woodlands on the eastern boundary of Foxcovert host breeding woodlark and so an increase in disturbance could have *serious* detrimental effects (Likely Significant Effects, LSE) on this European Protected Species. It *may* be appropriate therefore for Gedling BC to consider imposing a Community Infrastructure Levy contribution from each development to allow the creation of a significant area of new green infrastructure in Calverton to provide an easily accessible recreational and biodiverse area, which if well located may create links between existing areas of high quality habitat. Unfortunately we have not had the opportunity to explore where this area would best be placed but we would be happy to help to identify appropriate areas if required. But in the absence of such information we cannot preclude that it may not be possible to mitigate against these kinds of impacts, and if impacts on the species or the habitats upon which they rely cannot be prevented then clearly there would be implications under the Birds Directive (Article 4(4)) and the Habitats Directive, see below.

***Sherwood pSPA***

With regard to the Sherwood prospective SPA, the issues are complex. Calverton falls well within the SPA buffer zone agreed by NE and all parties at the Rufford ERF PI and ratified by the Secretary of State's decision in this regard (see attached map). Thus it is essential to consider the effects of this level of increased disturbance on the wider pSPA. This level of development would clearly result in a significant increase in the local population (by at least 4250 people), with their associated recreational needs and the likely ownership of both dogs and cats. It is not credible that such an increase would not involve disturbance effects to woodlark in such close proximity on the FC Land and also the wider population of woodlark and nightjar in the southern half of the SPA. The following is the advice we have been providing to LPA in the buffer zone area:

In the context of the Public Inquiry into Veolia's application for planning permission for an Energy Recovery Facility at Rufford, an issue has arisen as to whether the substantial population of nightjar and woodlark in the Sherwood Forest area justify its classification as an Special Protection Area ("SPA")

under the EU Birds Directive, or at least its identification as a potential SPA ("pSPA"). If Sherwood is to be treated as a pSPA, then it is Government policy (in PPS9 paragraph 6) that the potential site should be treated as if it had already been classified. This would have the result, in the case of applications in the vicinity of the pSPA, including but not limited to Veolia's application, that the provisions of the Conservation of Habitats and Species Regulations 2010 (formerly the Conservation (Natural Habitats etc) Regulations 1994) would have to be applied.

In the case of the proposed Rufford ERF, the Inspector and Secretary of State have agreed that the principal criterion for SPA designation (that of population size in a national context) has been met, and that it is appropriate to treat the area as if it were a pSPA, until such time as JNCC publish the results of the current SPA review. Thus it is NWT's view that the Sherwood area is at least a pSPA, and we are therefore bound to advise any LPA to that effect. *There is a 5km buffer zone around the combined Indicative Core Area and proposed International Bird Area, as agreed by NE*, within which we believe the possible adverse effects of any development should be properly considered. The potential allocation that is the subject of this consultation response falls within that area.

In this case it is for Gedling Council, as Competent Authority, to decide whether or not you agree with NWT's view that the Sherwood Area is to be regarded as a pSPA, but clearly the Secretary of State's decision must be borne in mind in this context. If so (since this is clearly not a proposal directly connected with or necessary to the management of the pSPA) the initial question arising under reg 61(1) of the 2010 Regulations is whether the proposed development is likely to have a significant effect on the pSPA (either alone or in combination with other plans or projects). This is a precautionary regime, and the European Court has held that a likely significant effect is one where there is a risk of its occurring which cannot be excluded on the basis of objective information.

Our advice in the present case is that the proposed level of development would have a likely significant effect on the Sherwood pSPA both alone and in combination with other plans or projects, because of:

- The increased recreational disturbance by people and their dogs
- The potential increase in predation from domestic cats, as cats can roam up to 2000m from their homes to hunt
- Potential damaging effects on heathland and cleared forestry coups through deposition of Nitrogen generated by substantive traffic increases, which would encourage more rapid regeneration of woody vegetation, rendering it unsuitable for nightjar and woodlark.

On that basis, reg 61(1) would require an appropriate assessment of the implications for the Sherwood pSPA in view of that site's conservation objectives, which relate to the suitability of the site for nightjar and woodlark and the protection of the populations of those species which use it. The remaining provisions of reg 61 would apply in relation to the making of an appropriate assessment, and the subsequent decision whether, consistently with that regulation, planning permission could be granted.

In the case of the Rufford PI, the Secretary of State's determination on the pSPA issue has confirmed that it is appropriate under these circumstances to undertake a "shadow" appropriate assessment of any development where potential Likely Significant Effects have been identified.

On the basis of the above, NWT have substantial reservations about the proposed scale of development in this location. Please do not hesitate to contact me on 0115 958 8242 should you require further information. I would be grateful if you could keep me informed about the progress of this proposal.

Yours sincerely

***Signature removed***

Janice Bradley C.Env., MIEEM
Head of Conservation Policy & Planning

Date: 22 March 2012
Our ref: 49069
Your ref:

Alison Gibson
Planning Policy
Gedling Borough Council

Consultation Service
Hornbeam House
Electra Way
Crewe Business Park
CREWE
CW1 6GJ

T: 0300 060 3900

**BY EMAIL ONLY**

Dear Alison,

**Greater Nottingham Aligned Core Strategy – Supplementary HRA Screening Record Gedling Borough Council**

Thank you for consulting Natural England on this report. We received your correspondence via email on 27 February 2012 .

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the bene□t of present and future generations, thereby contributing to sustainable development

Further to our telephone conversation on Tuesday (20/03/12) please □nd a summary of the discussions and Natural England's advice in relation to the HRA Screening Report (GNACS Supplementary Information Gedling Additional SHLAA Sites) provided by your consultants, David Tyldesley Associates.

It is understood that Gedling Borough Council are considering speci□c development locations as part of their Strategic Housing Land Availability Assessment (SHLAA) and that DTA have been appointed to undertake a screening of the emerging development locations to inform your □nal allocation selection. This screening is to identify whether development in the proposed locations would have a likely signi□cant e□ect on any European sites as a result of the scale and location of the development.

The screening assessment follows the approach adopted in the initial HRA screening, also undertaken by DTA for the Greater Nottingham Aligned Core Strategy (GNACS), which incorporates a risk-based approach for assessing implications of the potential growth at the identi□ed locations on the prospective Sherwood Forest SPA. This is in line with the 'risk based approach' that Natural England are advocating, endorsed by The Secretary of State, which we believe will provide a degree of future-proo□ng for decision-taking until such a time that it is clear whether or not the statutory policies concerning potential SPAs apply to an area of Sherwood Forest.

Natural England
Foundry House
3 Millsands
Riverside Exchange
Sheffield S3 8NH

www.naturalengland.org.uk

The specific locations that have been screened as part of the assessment include:

1. **Sites around Bestwood Village**
2. **Sites around Calverton**
3. **Sites around Ravenshead**

The report has highlighted the following issues:

- The Watchwood and Foxcovert Plantations near Calverton are identified as important areas for the breeding nightjar and woodlark populations (NE Indicative Core Areas & RSPB IBA map). Such a high concentration of increased population to the north west of Calverton may result in significant additional disturbance on these areas and therefore likely significant effect on the prospective Sherwood Forest SPA cannot be ruled out in the absence of mitigation measures.
- In addition the potential in-combination effects with development provided for in Ashfield and Mansfield are considered to be unlikely but cannot be excluded without further reference to relevant information on proposed development locations.

Each of these issues is discussed in more detail below:

**Sites around Calverton**

The report helpfully includes a list of recommended mitigation measures that if secured and implemented should help to avoid or reduce the likelihood of significant impacts which might adversely affect breeding nightjar and woodlark populations occurring. In particular we discussed how the Authority could reasonably build the specific detailed mitigation measure into such a high level strategic document, especially as many of the measures involve the agreement of third parties.

It was suggested that the policy may not need to include this level of detail but could highlight that any development proposal coming forward at this location would need to include an appropriate mitigation package that meets the requirements of the measures outlined in the HRA Screening Record. In addition the policy or supporting text may include an outline of the principles of the mitigation strategy which aims to prevent additional recreational pressure and disturbance as a result of the development on the nearby sensitive habitats. This will be achieved by:

1. Managing car parking provision in the vicinity of the prospective SPA habitats
2. Managing the provision of footpaths and access to the site
3. Providing Suitable Alternative Natural Green Space (SANGS); providing high levels of open space and attractive green infrastructure within the development particularly to facilitate dog walking and seeking to promote routes to other less sensitive sites
4. Providing good quality information for walkers and dog walkers

The final measure recommended in the report (i) is fully supported by Natural England and has been previously suggested as a sensible way for Local Planning Authorities in the Sherwood Forest area and affected by the SPA issue to work together, however as far as I am aware nothing has happened yet.

In addition Natural England recommend that any policy should include a caveat that if a SPA is formally proposed that the policy may need to be reviewed to ensure it is fit for purpose.

**In-combination effects**

The Authority should be satisfied that there is no potential for in-combination effects. Participation in some form of network amongst the relevant Local Authorities would also be beneficial in helping

the Council to gather information and consider the in-combination effects of their growth with development provided for in Ashfield and Mansfield.

Natural England consider that the HRA screening record is a robust evidence base that has considered the likely impacts arising from the proposals on breeding nightjar and woodlark in the Sherwood Forest area. The results of the assessment have demonstrated that with appropriate mitigation measures in place the proposals are unlikely to result in significant adverse effects on the breeding nightjar and woodlark populations. Natural England are pleased the Authority has followed the 'risk-based approach' and consider that if the Local Planning Authority are confident that they can secure and deliver the measures as part of any new development proposal coming forward and that adequate avoidance and mitigation measures can be built into the plan then this should allow the plan to advance with inclusion of these allocations.

I hope you find this information useful if you need any further assistance please do not hesitate to contact me.

For any correspondence or queries relating to this consultation only, please contact Liz Newman at the Nottingham Office on 0300 060 0789/ 07900 608387. For all other correspondence, please contact the address above.

Yours sincerely,

Elizabeth Newman
Lead Adviser
Land Use Operations Team
Elizabeth.newman@naturalengland.org.uk