



SHEFFIELD CITY COUNCIL Individual Cabinet Member Decision

Report of: Executive Director, Place

Date: 12th March 2015

Subject: Gleadless Key Bus Routes - Gleadless Road/Blackstock Road. Revised Scheme layout - Outcome of further consultation.

Author of Report: Andrew Marwood, 2736170

Summary:

This report sets out officer responses to comments received during the public re-consultation exercise, following the development of a revised layout for the Gleadless Road / Blackstock Road junction. The revisions were made to minimise the ecological impact of the carriageway widening works. An Ecological Assessment (EA) and Arboriculture Impact Assessment (AIA) have also been produced to determine the impacts and mitigation measures to enable an inbound bus lane to be provided.

Reasons for Recommendations:

The highway works described in this report will contribute to improvements in the punctuality and reliability of bus services in the Gleadless area and improved accessibility to bus stops.

Recommendations:

Complete detailed design and implement the Gleadless Road / Blackstock Road scheme as described in this report, taking full account of the recommendations outlined in the Ecology Assessment (EA) and the accompanying Arboriculture Impact Assessment (AIA) to mitigate the negative impact of the scheme.

Inform all parties responding to the recent re-consultation.

Note that full funding for this scheme is yet to be secured.

Background Papers:

Appendix 'A' - Location Plan.

Appendix 'B' - Blackstock Road/Gleadless Road – Revised Scheme drawing (TM-LT109-P3A).

Appendix 'C' - Ecological Assessment (EA) and Arboriculture Impact Assessment (AIA) and summary.

Appendix 'D' - Consultation responses.

Appendix 'E' – Calculations of time savings resulting from the proposed Blackstock Road bus lane.

Category of Report: OPEN

Statutory and Council Policy Checklist

| |
|---|
| Financial Implications |
| Cleared by: Gaynor Saxton |
| Legal Implications |
| Cleared by: Nadine Wynter |
| Equality of Opportunity Implications |
| Cleared by: Annemarie Johnstone |
| Tackling Health Inequalities Implications |
| NO |
| Human rights Implications |
| NO: |
| Environmental and Sustainability implications |
| NO |
| Economic impact |
| NO |
| Community safety implications |
| NO |
| Human resources implications |
| NO |
| Property implications |
| NO |
| Area(s) affected |
| Gleadless Valley |
| Relevant Cabinet Portfolio Leader |
| Leigh Bramall |
| Relevant Scrutiny Committee if decision called in |
| Economic and Environmental Wellbeing |
| Is the item a matter which is reserved for approval by the City Council? |
| NO |
| Press release |
| YES |

GLEADLESS KEY BUS ROUTE 2014/15 - RESPONSES TO RE-CONSULTATION AND SUBMISSION OF AN ECOLOGICAL ASSESSMENT

1.0 SUMMARY

1.1 This report sets out officer responses to comments received during the public re-consultation undertaken following the development of a revised arrangement at the junction of Gleadless Road and Blackstock Road and preparation of an Ecological Assessment (EA). The EA is required to determine the potential environmental impact of carriageway widening to accommodate an inbound bus lane.

2.0 WHAT DOES THIS MEAN FOR SHEFFIELD PEOPLE?

2.1 The Gleadless Key Bus Route (KBR) is one of the corridors being progressed to improve Sheffield's public transport facilities. Improvements to the bus routes in this part of the city will reduce delays in bus travel, help to make travel by public transport to and from the City more reliable, and improve the accessibility of public transport services, contributing to making the City a '*Great Place to Live*'.

3.0 OUTCOME AND SUSTAINABILITY

3.1 It is anticipated that when the proposals are in place they will improve the reliability and accessibility of bus services between Gleadless Valley and the City Centre. Together with the other Gleadless KBR improvements taking place in the Gleadless valley between Meadowhead and Queen's Road, these measures will make journeys by bus a more attractive travel option and help to reduce reliance on the private car.

3.2 The proposals will address queuing delays for buses at a key location, improving journey times and contributing to the reduction in harmful exhaust emissions.

4.0 REPORT

Introduction

4.1 The purpose of the Gleadless KBR is to improve bus journey times, service reliability and punctuality (see appendix 'E'), tackle congestion hotspots, enable enforcement of existing restrictions and improve passenger access, safety and information at bus stops. All 37 bus stops along the Gleadless corridor will be brought into compliance with the Equality Act 2010 through the provision of raised kerbs and tactile paving to aid passengers boarding and alighting. Bus clearway waiting restrictions will prevent parking and enable buses to pull up to the kerb. New bus shelters and real-time bus timetable information displays will also be provided where appropriate.

4.2 The improvements are supported by the Sheffield Bus Partnership,

comprising First Group, Stagecoach, South Yorkshire Passenger Transport Executive, Sheffield City Council and Sheffield Community Transport

- 4.3 A report was submitted to the Individual Cabinet Member's Decision (ICMD) session on September 11th 2014 outlining the background to the Gleadless KBR and detailing progress to date. Details of four highway improvement schemes, developed to address delays for buses at further key locations along the Gleadless bus corridor were also reported, together with the outcome of the public consultation undertaken for each of the proposals.
- 4.4 Two of the schemes, Blackstock Road/Gleadless Road and Spencer Road/Prospect Road/Myrtle Road were deferred pending the submission of an EA and a revision of both schemes to seek to minimise the impacts on the local environment. This was in response to the significant level of concern expressed by a number of respondents to the public consultation relating to the negative impact on areas of public open space and loss of trees.
- 4.5 A further round of public consultation has been undertaken with regard to the findings of the EA at each location. The results of the second round of consultation at Prospect Road / Spencer Road will be presented to a future meeting of the ICMD session.

Proposed measures

- 4.6 Widening of Blackstock Road between Bankwood Road and Gleadless Road to accommodate an inbound bus lane and provision of 2 refuges on Blackstock Road to assist pedestrians (see appendix 'B').
- 4.7 Bus stops in the immediate vicinity of the proposed improvement scheme will be upgraded in conjunction with the works.
- 4.8 Implementation of the scheme will require the acquisition of various parcels of land adjacent to the highway, currently the responsibility of Housing Services. Transfer procedures have commenced with regard to the relevant areas required.

Public consultation

- 4.9 During July/August 2014, interested parties were consulted about the proposal at Gleadless Road / Blackstock Road and the appropriate Traffic Regulation Orders were advertised. The outcome was documented in a report to the ICMD session on September 11 2014.

The decision at the September meeting approved the start of detailed design and implementation of the zebra crossing and traffic calming on Gleadless Road but deferred a decision on the proposed bus lane from Bankwood Road to Gleadless Road pending the submission of an EA and revised scheme layout which minimises the impact on the local environment.

- 4.10 The EA and accompanying AIA submitted in respect of the Blackstock Road widening scheme are included in Appendix 'C'.
- 4.11 At this location, because residences do not directly front onto the proposals, a plan and brief description of the scheme together with a copy of the EA was made available to view in Gleadless Library and the Gleadless Valley TARA office (see Appendix 'C'). The Chair of the TARA circulated copies to interested parties and details of the scheme/EA were also despatched to all parties who had responded to the original consultation.
- 4.12 One objection from the Gleadless Valley Wildlife Trust remains following the revised scheme layout. Appendix 'D' summaries the main points together with officer's responses.

Other Consultees

- 4.13 The emergency services, Veolia and South Yorkshire Passenger Transport Executive (SYPTTE) were previously consulted about each of the four 'service reliability' schemes and no objections were received.

Relevant Implications

- 4.14 The cost of the measures on the Gleadless KBR is estimated to be in the region of £2m (including the works completed in 2013/14 at a cost of £290K). A sum of £745,000 has already been allocated to the Gleadless project. The remaining £1.255m would be secured through the Sheffield Bus Partnership Board should the scheme go ahead.
- 4.15 The City Council will need confirmation of full funding before the Blackstock Road / Gleadless Road scheme can be implemented. In this regard investment in improved public transport facilities has been made possible by a Government award to SYPTTE of approx. £18m of "Better Bus Area" funding (BBA2), in support of the Sheffield Bus Partnership. SYPTTE administer the fund. The Sheffield Bus Partners are currently reviewing BB2 allocations in the light of emerging priorities. Indications are that the benefits calculated to result from the proposed improvements strongly justify the required funding.
- 4.16 An Equality Impact Assessment has been conducted and concludes that the proposals are fundamentally equality neutral affecting all local people equally regardless of age, sex, race, faith, disability,

etc. However, some aspects will be positive, e.g. for the young, elderly and disabled as some of the proposed measures improve accessibility. No negative equality impacts have been identified.

4.17 The Council has the power to make a Traffic Regulation Order under section 1 of the Road Traffic Regulation Act 1984 for reasons that include the avoidance of danger to persons or other traffic using the road; to facilitate the passage on the road of traffic (including pedestrians); and to prevent the use of the road by vehicular traffic of a kind which is unsuitable to the existing character of the road. However before the Council can make an Order it must consult the relevant bodies in accordance with the Local Authorities Traffic Orders (Procedure) (England and Wales) Regulations 1996. It must also publish notice of its intention in a local newspaper. These requirements have been complied with. Although there is no requirement for public consultation, extensive consultation has taken place and the Council has considered and responded to all public objections received.

4.18 The Council has the power to widen highways under section 72 of the highways Act 1980 and to enter into agreements for the dedication of part of the adjoining land for highway purposes. The land required is in the ownership of the Council and the interim Director of Housing and Neighbourhood Services and the Director of Children, Young People and Families Department have been consulted. No objections have been raised and the transfer procedures are underway with regard to the parcels of land required.

5.0 ALTERNATIVE OPTIONS CONSIDERED

5.1 The current Blackstock Road widening scheme was developed following a review of an earlier proposal to provide a minor bus-only facility at the junction of Gleadless Road. This was discounted as, without the additional length of bus lane now proposed, the limited time saving benefits for buses did not justify the scheme cost. Additionally, the alignment of the new section of carriageway across the public open space has been revised as much as practicable to minimise the negative impact on trees.

6.0 REASONS FOR RECOMMENDATIONS

6.1 The proposals described in this report will contribute to improvements in the punctuality and reliability of bus services in the Gleadless area together with accessibility improvements to/from bus stops.

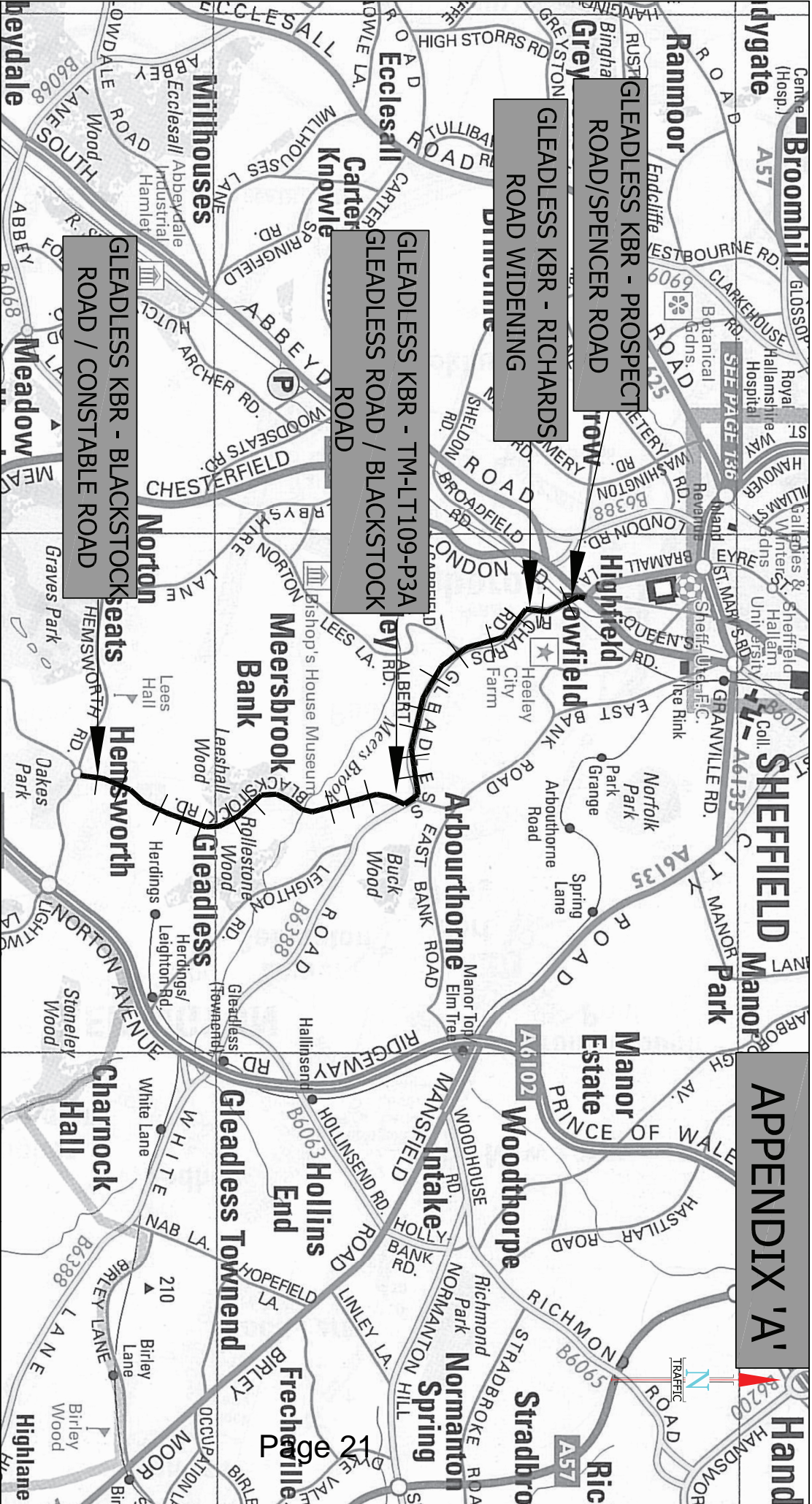
6.2 Whilst it is acknowledged that the proposed scheme will impact on adjacent public open space and trees to varying degrees, the recommendations outlined in the EA and AIA to mitigate the negative aspects will be fully investigated and adopted where practicable and beneficial.

7.0 RECOMMENDATIONS

- 7.1 Complete detailed design and implement the Gleadless Road / Blackstock Road scheme described in this report. The scheme will take full account of the recommendations outlined in the EA and accompanying AIA to mitigate the negative impact of the scheme, subject to the Council's Capital Approval procedures.
- 7.2 Inform all parties responding to the recent re-consultation.
- 7.3 Note that full funding for this scheme is yet to be secured.

Simon Green
Executive Director, Place

09th February 2015



APPENDIX 'A'

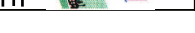
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Scheme: Gleadless Key Bus Route

Drawing No.: TM-LT109-LP
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Date: MAR 15



A Service Area of Place
 Sheffield City Council

AUTHOR: ATM
 MAR 15

CHECKED:

Drawing Title: Appendix A
 Scheme Location Plan

SCHEME DESIGN



Preliminary ecological appraisal

Gleadless Key Bus Route

Blackstock Road proposed widening and bus lane

Sheffield City Council Ecology Unit

October 2014

Author: Chris Smith (Casual Ecology Assistant)

Surveyors: Chris Smith
Angus Hunter (Community Forestry Development Officer & Ecologist)

Bat surveyor: Martin Nowacki MCIEEM, Natural England Bat Licence 2014-3332-CLS

Executive summary

Sheffield City Council Ecology Unit was commissioned to undertake a Preliminary Ecological Appraisal of works proposed under the Gleadless Key Bus Route (KBR) scheme. Part of this scheme comprises the widening of a section of Blackstock Road and the addition of a new bus lane at the junction with Gleadless Road, necessitating the loss of grass verge, a small expanse of amenity grassland and several mature and semi-mature trees and shrubs.

The appraisal relates to scheme design drawing TM-LT109-P3 REV A and topographical map TM-LT109-P3 TOPO.

Two site visits were made on the 11th and 17th September 2014 to assess ecological interest and likely impacts on species or habitats identified or potentially present on site. A preliminary assessment was made of the trees on site to evaluate potential for bats.

The site was judged to be of medium ecological interest generally, but contains some significant features in the form of a relict orchard dated at between 60-100 years old and a number of mature trees, including a locally rare holm oak (*Quercus ilex*). Faunal interest comprised a number of locally common invertebrates and bird species, with one mammal record.

The habitats found on site comprise elements of habitats of priority or principal importance as defined by the Natural Environment and Rural Communities (NERC) Act Section 41, these being *wood-pasture and parkland* and *traditional orchard*. These are habitats highlighted as conservation priorities and as such every opportunity should be taken to minimise loss and wherever possible make enhancements that benefit biodiversity.

Initial scoping for bats graded the trees potentially affected by the works as borderline Category 1/ Category 2, as defined by the Bat Conservation trust (BCT) guidelines. One tree is likely to be felled as part of the works (a large sycamore, *Acer pseudoplatanus*) and it is recommended that a further inspection by a licensed bat worker is conducted before any work commences. If bats are present the tree can only be felled under a European Protected Species (EPS) License.

Care should be exercised to minimise damage to the orchard trees and any other specimens next to the route of the proposed bus lane. Enhancements should be made where possible and these could include sensitive and appropriate planting of native British species, bird and bat boxes and using felled wood to create deadwood habitat. Overall, the enhancements should aim to contribute a net improvement for wildlife on this site.

Amendment

Subject to further survey by an ecologist holding a Natural England Bat Licence (No: 2014-3332-CLS), the trees were assessed and graded for bat potential (See Appendix 9.3). The sycamore is graded as Category 2 as it is a mature tree, but has very limited features that could offer roost potential. The tree may be felled taking reasonable avoidance measures. Stop works and seek advice in the event bats are found, in order to comply with relevant legislation.

Preliminary ecological appraisal

Gleadless Key Bus Route

Blackstock Road proposed widening and bus lane

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1.0 Introduction

1.1 A need has been identified to undertake various highway improvements to an area around the junction of Blackstock Road with Gleadless Road to help reduce delays to buses and improve service reliability. The measures include the proposed widening of a stretch of Blackstock Road on its eastern side between its junctions with Plowright Mount and Gleadless Road and a new length of bus-only road across an area of partly wooded public open space. The works will necessitate the loss of grass verge, a small area of amenity grassland and several mature and semi-mature trees and shrubs.

1.2 This preliminary appraisal aims to evaluate the potential ecological impact of the scheme through an assessment of the habitats and species present and any possible consequences of the works that are proposed. In particular, the study will seek to identify the presence of UK and local Biodiversity Action Plan (BAP) species and habitats. All current legislation and policy will be specified where relevant and recommendations and enhancements will be suggested in mitigation. Ecological methodologies will be explained clearly, highlighting any constraints or need for further survey.

2.0 Site description

2.1 The area surveyed comprises 2 small pockets of public green space located in a generally urban setting, but also in close proximity (< 1600m) to numerous expanses of ancient broadleaved woodland. To the east of Blackstock road is a very small area (approx. 0.2 ha) of regularly managed urban parkland, dominated by a small grouping of around 7 veteran fruit trees (mostly *Malus* sp and *Pyrus* sp) comprising a relict orchard. Anecdotal evidence suggests this is Victorian, but the earliest OS map upon which the orchard can be *clearly* identified is 1951. To the west of Blackstock Road is a slightly larger area (approx. 0.7 ha) of urban parkland dominated by large mature trees and a few smaller shrub species. The wooded area clearly shows up on the 1875 - 95 OS map (more or less in its current shape), giving an indication of possible age for some of these trees.



Fig. 1 Aerial view of the junction of Gleadless Road and Blackstock Road. The area surveyed comprises the top left corner of the photograph.

3.0 Legislation and policy

3.0.1 The Natural Environment and Rural Communities (NERC) Act came into force on 1st Oct 2006. Section 40 of the Act requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'Biodiversity duty'.

3.0.2 Section 41 of the NERC Act comprises a list of species and habitats of principal importance which should be high on the list of material considerations in any proposed development. These are all the habitats in England that were identified as requiring action in the UK Biodiversity Action Plan (UK BAP) and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework. The UK BAP and Local Biodiversity Action Plan (LBAP) will still be referred to in this text.

3.0.3 The National Planning Policy Framework (NPPF) states:

- The planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains for biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.
- To minimise impacts on biodiversity and geodiversity, planning policies should promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan.

3.0.4 The client needs to determine whether planning permission is required in this instance.

3.0.5 It is understood that works will be carried out under the Highways Act 1980.

3.0.6 The principal design document for the layout of roads is the Design Manual for Roads and Bridges (DMRB). The DMRB was introduced in 1992 in England and Wales, and subsequently in Scotland and Northern Ireland. It provides a comprehensive manual system which accommodates all current standards, advice notes and other published documents relating to the design, assessment and operation of trunk roads (including motorways). Although the DMRB sets a standard of good practice for Trunk Roads it may be applicable to other roads with similar characteristics. Specifically:

Where it is used for local road schemes, it is for the local highway authority to decide on the extent to which the documents in the manual are appropriate in any particular situation.

While the requirements given in the DMRB may be used by local highway/road authorities, such authorities should ensure that their application to local road schemes does not compromise health and safety, result in poor value for money, or have an unacceptable impact on the environment.

3.0.7 Within the DMRB document there is a specific section on Nature Conservation and Biodiversity. Addressing the principles of how nature conservation and biodiversity issues should be treated within the design and construction of road infrastructure projects, and their post-completion management is dealt with in Mitigation and Enhancement section of this report.

3.1 Protected species legislation

3.1.1 All UK bats are protected under Regulation 41 of the Conservation of Habitats and Species Regulation 2010 and Section 9 of the Wildlife and Countryside Act (1981) as amended. Under these legislative measures it is an offence to recklessly kill or injure bats. It is also an offence to disturb bats or to destroy or obstruct a roost even if the roost is at the time unoccupied.

3.1.2 Where bats are found on a potential development site a licence from Natural England may be needed to carry out proposed works where these may cause an offence under relevant legislation. Natural England issue European Protected Species licences. In the instance that planning permission is required before planning approval can be granted LPA's must be satisfied with the level of survey and methods used to ensure they fulfil their obligations under Regulation 9(5) of the Habitats and Species Regulations 2010. These can only be issued where full planning permission has been granted. The presence/absence of protected species is a material consideration in the assessment of planning applications.

3.2 Legislation with regard to wild birds

3.2.1 The primary legislation protecting wild birds in England and Wales is the Wildlife and Countryside Act 1981 (subject to a number of amendments, including the Countryside and Rights of Way Act 2000 and the NERC Act 2006). The basic principle of this Act is that all wild birds, their nests, and eggs are protected by law and some rare species are afforded additional protection from disturbance during the breeding season.

3.2.2 Because of the wide variety of habitats used by birds, surveys for birds may be necessary in urban and suburban areas as well as rural situations. The requirement to undertake detailed surveys for breeding birds should be determined on a case-by-case basis. However, avoidance measures built into development proposals may remove the need for detailed survey work and similarly, mitigation measures built into proposals may also reduce the amount of survey work required (including survey effort and spatial extent), though there must still be sufficient information supplied to understand the nature of impacts and their likely effect on the conservation status of the species concerned.

3.3 Survey guidelines

This survey was carried out following the guidance set out by the Institute of Ecology and Environmental Management, '*Guidelines for Preliminary Ecological Appraisal*' (2012).

Survey methodologies followed those set out in the Joint Nature Conservation Committee (JNCC), '*Handbook for Phase 1 habitat survey*' (2010) and the '*Hedgerow Survey Handbook*', Defra (2007)

Preliminary scoping for bats followed guidelines set out in Natural England's '*Bat habitat assessment prior to arboricultural operations*' (2010) and the '*Bat surveys Good Practice Guidelines*' 2nd Edition (2012), published by the Bat Conservation Trust.

3.4 Bat surveying and Bat Conservation Trust Guidelines

Scoping for possible bat presence involved ground level visual inspection of the trees for any cracks or crevices in which bats could roost. Using the aforementioned Natural England and BCT guidelines, these observations give a score which is used to inform decision making on further surveying. This might include an aerial inspection (using rope access) or dawn and dusk emergence surveys carried out by a licensed bat worker or ecologist.

Table 1. Protocol for visual inspection of trees due to be affected by arboricultural work, to assess the value of the trees to bats. (Bat Conservation Trust, 2012).

| Tree category and description | Stage 1 Initial survey requirements | Stage 2 Further measures to inform proposed mitigation | Stage 3 Likely mitigation |
|---|--|---|---|
| Known or confirmed roost | Follow SNCO guidance and these guidelines wherever possible, to establish the extent to which bats use the site. This is particularly important for roosts of high risk species and/or roosts of district or higher importance and above | | The tree can be felled only under EPS licence following the installation of equivalent habitats as a replacement. |
| Category 1* Trees with multiple, highly suitable features capable of supporting larger roosts | Tree identified on a map and on the ground. Further assessment to provide a best expert judgement on the likely use of the roost, numbers and species of bat, by analysis of droppings or other field evidence. A consultant ecologist is required | Avoid disturbance to trees, where possible. Further dusk and pre-dawn survey to establish more accurately the presence, species, numbers of bats present and the type of roost, and to inform the requirements for mitigation if felling is required. | Felling would be undertaken taking reasonable avoidance measures such as 'soft felling' to minimise the risk of harm to individual bats. |
| Category 1 Trees with definite bat potential, supporting fewer suitable features that category 1* trees or with potential for use by single bats | Tree identified on a map and on the ground. Further assessed to provide a best expert judgement on the potential use of suitable cavities, based on the habitat preferences of bats. A consultant ecologist required | Avoid disturbance to trees, where possible. More detailed, off the ground visual assessment. Further dusk and pre-dawn survey to establish the presence of bats, and if present, the species and numbers of bats and type of roost, to inform the requirements for mitigation if felling is required. | Trees with confirmed roosts following further survey are upgraded to Category 1* and felled under licence as above. Trees with no confirmed roosts may be downgraded to Category 2 dependent on survey findings |
| Category 2 Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats. | None. A consultant ecologist is unlikely to be required | Avoid disturbance to trees, where possible. No further surveys. | Trees may be felled taking reasonable avoidance measures. Stop works and seek advice in the event bats are found, in order to comply with relevant legislation. |
| Category 3 Trees with no potential to support bats | None. A consultant ecologist is not required unless new evidence is found | None. | No mitigation for bats required. |

4.0 Methodologies

4.1 Desk study and data search

4.1.1 A desk study was conducted to gather existing ecological data about the site. This included a search of all records of flora and fauna held on the Sheffield Biological Records Centre database recorded within 500m of a site centroid point. Particular emphasis is placed on records of protected, species of principal importance (NERC Act Section 41) or 'notable' species¹. Consideration will also be given to proximity to other local wildlife habitats, particularly those designated as Local Wildlife Sites and/or Local Nature Reserves.

4.1.2 Use was made of aerial photography and historical Ordnance Survey maps in helping to further define the character of the survey area.

4.2 Field surveys

4.2.1 Two 'walk-over' site visits were made in mid-September 2014 to gather field data on all aspects of the ecology of the site.

11.9.2014 - First site visit to gather floristic and faunal data using JNCC Phase 1 methodologies.

17.9.2014 - Site visit with Sheffield City Council Trees & Woodland Tree Manager to assess arboricultural impact of the proposed scheme. See separate report.

4.2.2 Field survey results are presented in the form of a Phase 1 style habitat map with accompanying 'target notes' detailing points of interest and a comprehensive list of all species (Appendix 9.1) currently recorded on site and any protected, priority or notable species from historical records.

4.2.3 Due to the size and age of some of the trees within the proposed scheme area and the necessity for specimens to be felled for the bus lane, a separate arboricultural report covers this aspect of the site ecology.

¹ Nationally Scarce (also termed Nationally Notable) relates to species which are found in between 16 and 100 hectads. This category is subdivided into Nationally Scarce (Nationally Notable) A — species found in 16 to 30 hectads, and Nationally Scarce (Nationally Notable) B - species found in between 31 and 100 hectads. It is a measure of relative rarity as defined by the Joint Nature Conservation Committee (JNCC).

5.0 Constraints

5.1 Habitat surveying is normally conducted earlier in the year. This maximises the potential to record plants that flower during the spring and summer months and observe invertebrates, amphibians, birds and mammals, many of which flourish during this time. The optimal time for conducting woodland surveys is during April, May and June; grasslands are surveyed during June and July. Conducting a botanical survey in September, whilst acceptable, many result in some species of spring and early summer going unrecorded. Regular mowing of amenity grassland and parkland often makes identification of grass species difficult. This site had been recently mown and the sward cut very short.

5.2 Bats can generally be surveyed throughout the year, although differing methods are used depending on whether the surveyor is looking for active bats or their roost sites. September is late in the year for bat detector surveys, but still acceptable for tree inspections, these are often carried out between December and March (Bat Conservation Trust, 2012)

6.0 Results

6.1 Desk study

6.1.1 Analysis of Ordnance Survey maps (1875 - 95, 1948 and 1951 editions) suggests that the wooded area to the west of Blackstock Road (though which the proposed bus lane passes) has existed since Victorian times. The mature specimens present may represent former wood pasture or have been part of a larger expanse of woodland. The smaller area to the east of Blackstock Road has likely been heavily landscaped and re-seeded during the development of the Gleadless Valley, but the presence of veteran orchard trees again, give an indication of historical use.

6.1.2 Using a site centroid point (**SK 366 844**), distances were calculated to nearby woods and green spaces. Ten substantial sites lie within 2km, forming a broad mosaic of grassland and ancient woodland habitat in this generally densely populated part of south Sheffield. These are:

| | Distance from site |
|--|--------------------|
| Hang Bank Wood (part of site 141) | 276m |
| Buck Wood (site 143) | 365m |
| Carr Wood (part of site 141) | 516m |
| Gleadless Valley Grasslands (site 142) | 570m |
| Leeshall Wood (site 141) | 968m |
| Coneygree Wood (part of site 141) | 974m |
| Rollestone Wood (site 145) | 1060m |
| Ashes Wood (part of site 141) | 1300m |
| Herdings Wood (part of sites 145/142) | 1560m |
| The Lumb (part of sites 145/142) | 1600m |

6.1.3 Four of these sites are Local Wildlife Sites (LWS) that are also afforded the designation of Local Nature Reserve (LNR) due to their high biodiversity value. These are:

| Site number | |
|-------------|-----------------------------------|
| 141 | Gleadless Valley: Leeshall Wood |
| 142 | Gleadless Valley: Grasslands |
| 143 | Gleadless Valley: Buck Wood |
| 145 | Gleadless Valley: Rollestone Wood |

6.2 Data search

6.2.1 The data search of Sheffield's Biological Records Centre (SBRC) database yielded 308 records of plant, fungi, bird, mammal and amphibian within a 500m radius. Priority species as defined by the UK BAP and NERC Act Section 41 and found within this search area are listed below:

| | Priority species | Date | Notes |
|---------|--|------------|--------------------------|
| Mammals | Brown hare <i>Lepus europaeus</i> | 1.1.1976 | |
| | Non-descript bat | 1.4.2004 | Trapped in lead flashing |
| Birds | Dunnock <i>Prunella modularis</i> | 1987/ 1993 | |
| | Herring gull <i>Larus argentatus</i> | 1.1.1987 | |
| | House sparrow <i>Passer domesticus</i> | 1987/1993 | |
| | Starling <i>Sturnus vulgaris</i> | 1987/1993 | |
| | Willow tit <i>Poecile montanus</i> | 30.3.2011 | |

6.3 Field surveys

6.3.1 11.9.2014 - Conditions were fine and dry, 18°C. All aspects of the site ecology recorded, including trees, ground flora, invertebrates, birds and mammals. An initial ground-level inspection was made of the trunk and limbs of the mature trees for cracks and crevices that could potentially provide roosting habitat for bats. Most trees were assessed to have low bat potential, however the mature specimens of beech, sweet chestnut, lime and sycamore were difficult to assess from the ground and, due to the presence of dead limbs and cracks were judged to be of medium potential (using Natural England assessment methods). Under the Bat Conservation Trust guidelines these observations would rate as borderline Category 1 and Category 2, indicating a possible need for further inspection higher in the canopy. Further inspection is recommended to fully comply with BCT guidelines and this is particularly relevant to the mature sycamore if this tree is to be felled or thinned in any way (See Appendix 9.3).

6.3.2 Faunal interest was limited to a small number of invertebrate and bird observations, with 1 mammal observation (grey squirrel, *Sciurus carolinensis*). Trees of this age and size harbour plenty of potential for nesting and it is anticipated that any works would need to be sensitive to [nesting] birds.

6.4 NERC Act Section 41 habitats and species

Based on the findings of the desk study, historical records and field observations, the survey area contains elements of two Section 41 Habitats of Principle Importance in England - *traditional orchard* and *wood-pasture and parkland* and herein four [historical] records of Section 41 species relevant to these kind of habitats: house sparrow, dunnock, starling and [un-identified] bat. As such, these habitats and species should be given priority when implementing NERC Section 40 duty and should be an important consideration in the design and mitigation measures of this scheme.

6.5 Habitat map



6.6 Target Notes

1. Relict orchard comprising 7 veteran trees of mostly apple (*Malus domestica*) and pear (*Pyrus sp*), with one specimen of rowan (*Sorbus aucuparia*) and one honey locust (*Gleditsia triacanthos*). The orchard trees are estimated at between 60 -100 years old.

Surrounding grassed area is generally unremarkable, dominated by meadow-grass (*Poa sp*) and containing a variety of common grassland species.

2. The honey locust is a deciduous tree native to central North America. They can grow to a height of 20-30m with fast growth, but are relatively short lived at around 120 years. This specimen is an inappropriate planting for this setting and should be removed.

3. Pear tree. This specimen is likely to be of a similar age to the other orchard trees, but is the closest to the proposed works. Every care should be taken to avoid damage to its root system.

4. Ash (*Fraxinus excelsior*). This is a mature tree that will likely be removed as part of the proposed works. Please refer to separate arboricultural report for further advice.

5. Holm oak (*Quercus ilex*). This is an evergreen broadleaf tree native to the Mediterranean region and introduced to Britain in the late 1500s. This is a rare tree for the Sheffield area, SBRC holding records of 8 specimens. Every care should be taken to avoid damage to this tree, again, refer to the arboricultural report.

6. Cherry laurel (*Prunus laurocerasus*). This is a non-native evergreen species of cherry often planted to provide screening. There are no impediments to this being removed.

7. Hawthorn (*Crataegus monogyna*). This is a substantial and aged specimen and consideration should be given to retain it if possible. Hawthorn provides a rich habitat for wildlife providing food for over 150 invertebrate species and birds such as the blackbird, thrushes, chaffinch and starling.

Surrounding ground flora was considered generally unremarkable at this time of year.

8. Ash and wych elm (*Ulmus glabra*), both of which stand to be removed. Refer to arboricultural report.

9. Holly (*Ilex aquifolium*). This is a large and aged specimen and care should be taken to avoid damage. Holly provides an important food source for many bird species such as the blackbird, thrushes and redwing. Other birds, such as robin, dunnock, finches and goldcrest use it for nesting as it provides excellent protection. In close proximity is a large stand of wild cherry (*Prunus avium*), much of which appears to be sucker re-growth.

Also, proximate mature specimens of lime (*Tilia x europaea*), beech (*Fagus sylvatica*) and sweet chestnut (*Castanea sativa*). Of these species, lime attracts a huge number of invertebrates looking for nectar during the summer months, particularly bees.

10. Sycamore (*Acer pseudoplatanus*). Mature specimen likely to have a substantial root system and possibly affected by proposed bus lane. See arboricultural report.

7.0 Discussion and conclusions

7.1 In general, this is a small site with a medium level of ecological interest based on the site observations. The grassed areas contain a variety of common species, all of which will be kept in check by the current regime of regular and close mowing. Of interest are the mature and veteran trees which provide valuable habitat to invertebrates, birds and small mammals. Trees are categorised as 'veteran' due to both size and various physical features such as spreading crowns and thick boughs that are exposed or semi-exposed to sunlight. Valuable resources in these trees include bark crevices, dead bough ends and heart rot. Many species of invertebrates require small cavities, so the trees do not necessarily have to be ancient to be of importance. Veteran trees and relict orchard trees are a local and national priority habitat as defined by the UK BAP and the NERC Act Section 41. In this setting they are likely remnants of former woodland or wood pasture and traditional orchard and as such are of conservation significance. Ecological impact on this area, whilst potentially quite small, should be kept to an absolute minimum and offset by enhancements elsewhere on site in line with the requirements of the NPPF if planning permission is required – to preserve, restore and re-create priority habitats and ecological networks.

7.2 Whilst faunal interest was limited, the species recorded indicate how a small green space such as this forms an important part of the wider matrix of habitats in this part of Sheffield. The trees on site will potentially provide feeding and nesting opportunity for birds and observations suggest that the mature trees may harbour some potential to support bats. With regard to other priority groups, the site is judged to have low potential for reptiles and no current potential for amphibians.

7.3 Conservation of biodiversity is increasingly embracing a 'mosaic' approach, as described in the UK Governments *Biodiversity 2020* strategy. Many highly mobile terrestrial species such as birds and mammals require a large-scale mosaic of priority and non-priority habitats. They require some types of habitat to breed, nest or roost in and others in which to feed or forage. Some species require physical links between habitats, so connecting corridors and networks will be of benefit. For others, the closer that sites are together the better it is for dispersal; this applies also to many species living in a small-scale mosaic. Conservation in Sheffield is increasingly embracing this approach - seeking to improve the wildlife potential of many small sites, to serve as 'islands' linking up larger habitats such as woodland, grassland and heathland, especially those designated as Local Wildlife Sites or Local Nature Reserves. The importance of these [small sites] should not be overlooked and where possible measures taken to mitigate against the works that are proposed.

8.0 Mitigation and enhancement

8.1 If the Blackstock Road bus lane and road widening scheme is to proceed, a number of measures are proposed for both mitigation and enhancement of wildlife opportunities. These should contribute an overall net *improvement* to the site ecology when the works are completed.

- Tree works - felling, ground excavation or removal of tree limbs should closely follow the advice set out in the arboricultural report minimising damage to remaining trees and their root systems.
- The bus lane could be redesigned to minimise land take, avoiding the holm oak and possibly the sycamore.
- Planting of replacement trees and/or shrubs should occur and this must be relevant to setting i.e. fruit trees in the orchard area and native British species in the wooded area.
- The honey locust should be removed and replaced with a native fruit tree.
- A change in grass-cutting management to a more ecologically sensitive regime, therefore encouraging greater grassland diversity.
- Bird boxes could be installed in some of the mature trees. Data search results and the Sheffield Bird Atlas would be used to inform this.
- Bat boxes could be installed in some of the mature trees if deemed appropriate for this site.
- Some felled wood could be left on site, providing valuable deadwood habitat for invertebrates.

8.2 Further survey recommendations

It is recommended that a further inspection by a licensed bat worker or ecologist is conducted of the sycamore to check for cracks and crevices that may provide roosting potential for bats. If the tree is deemed to have limited potential to support bats and no confirmed roosts it may be downgraded to Category 2 (as per BCT guidelines) and felled if necessary. In the event that bats are confirmed, the tree is upgraded to category 1* and all works should cease in order to comply with relevant legislation. A category 1* tree can only be felled under a European Protected Species (EPS) license and following the installation of equivalent habitats as a replacement.

9.0 Appendices

9.1 Species list

Trees

| Common name | Latin Name | Notes |
|----------------|------------------------------|--|
| Apple | <i>Malus</i> sp | 3 Veteran orchard trees. (National and Local BAP habitat). |
| Ash | <i>Fraxinus excelsior</i> | |
| Beech | <i>Fagus sylvatica</i> | Mature specimen |
| Cherry | <i>Prunus avium</i> | Sucker regrowth |
| Cherry laurel | <i>Prunus laurocerasus</i> | Mature specimen |
| Elder | <i>Sambucus nigra</i> | |
| Hawthorn | <i>Crataegus monogyna</i> | Veteran coppiced tree |
| Holly | <i>Ilex aquifolium</i> | Sucker re-growth |
| Holm oak | <i>Quercus ilex</i> | Mature specimen - some rot holes in main trunk. Locally rare species. |
| Honey locust | <i>Gleditsia triacanthos</i> | Inappropriate non-native planting for a Veteran orchard and BAP habitat. |
| Common lime | <i>Tilia x europaea</i> | Mature specimen |
| Pear | <i>Pyrus</i> sp | 3 Veteran orchard trees. (National and Local BAP habitat). |
| Rowan | <i>Sorbus aucuparia</i> | |
| Sycamore | <i>Acer pseudoplatanus</i> | Mature specimen |
| Sweet chestnut | <i>Castanea sativa</i> | Mature specimen |
| Wych elm | <i>Ulmus glabra</i> | Sucker re-growth |

Herbaceous Plants

| | | |
|------------------------|---------------------------------|--|
| Black medick | <i>Medicago lupulina</i> | |
| Bramble | <i>Rubus fruticosus</i> agg | |
| Creeping buttercup | <i>Ranunculus repens</i> | |
| Chickweed | <i>Stellaria media</i> | |
| White clover | <i>Trifolium repens</i> | |
| Cow parsley | <i>Anthriscus sylvestris</i> | |
| Daisy | <i>Bellis perennis</i> | |
| Dandelion | <i>Taraxacum officinale</i> agg | |
| Broad leaf dock | <i>Rumex obtusifolius</i> | |
| Groundsel | <i>Senecio vulgaris</i> | |
| Hawkweed sp | <i>Hieracium</i> sp | |
| Ivy | <i>Hedera helix</i> | |
| Common knotgrass | <i>Polygonum aviculare</i> | |
| Annual meadow-grass | <i>Poa annua</i> | |
| Nettle | <i>Urtica dioica</i> | |
| Pineapple weed | <i>Matricaria discoidea</i> | |
| Greater plantain | <i>Plantago major</i> | |
| Ribwort plantain | <i>Plantago lanceolata</i> | |
| Ragwort | <i>Jacobaea vulgaris</i> | |
| Shepherds purse | <i>Capsella bursa-pastoris</i> | |
| Thyme-leaved speedwell | <i>Veronica serpyllifolia</i> | |
| Wood avens | <i>Geum urbanum</i> | |
| Yarrow | <i>Achillea millefolium</i> | |

Fungi and lichen

| | | |
|-------------------|----------------------------|--|
| Fibrecap | <i>Inocybe</i> sp | |
| Lichen | <i>Xanthoria parietina</i> | |
| Sycamore tar spot | <i>Rhytisma acerinum</i> | |

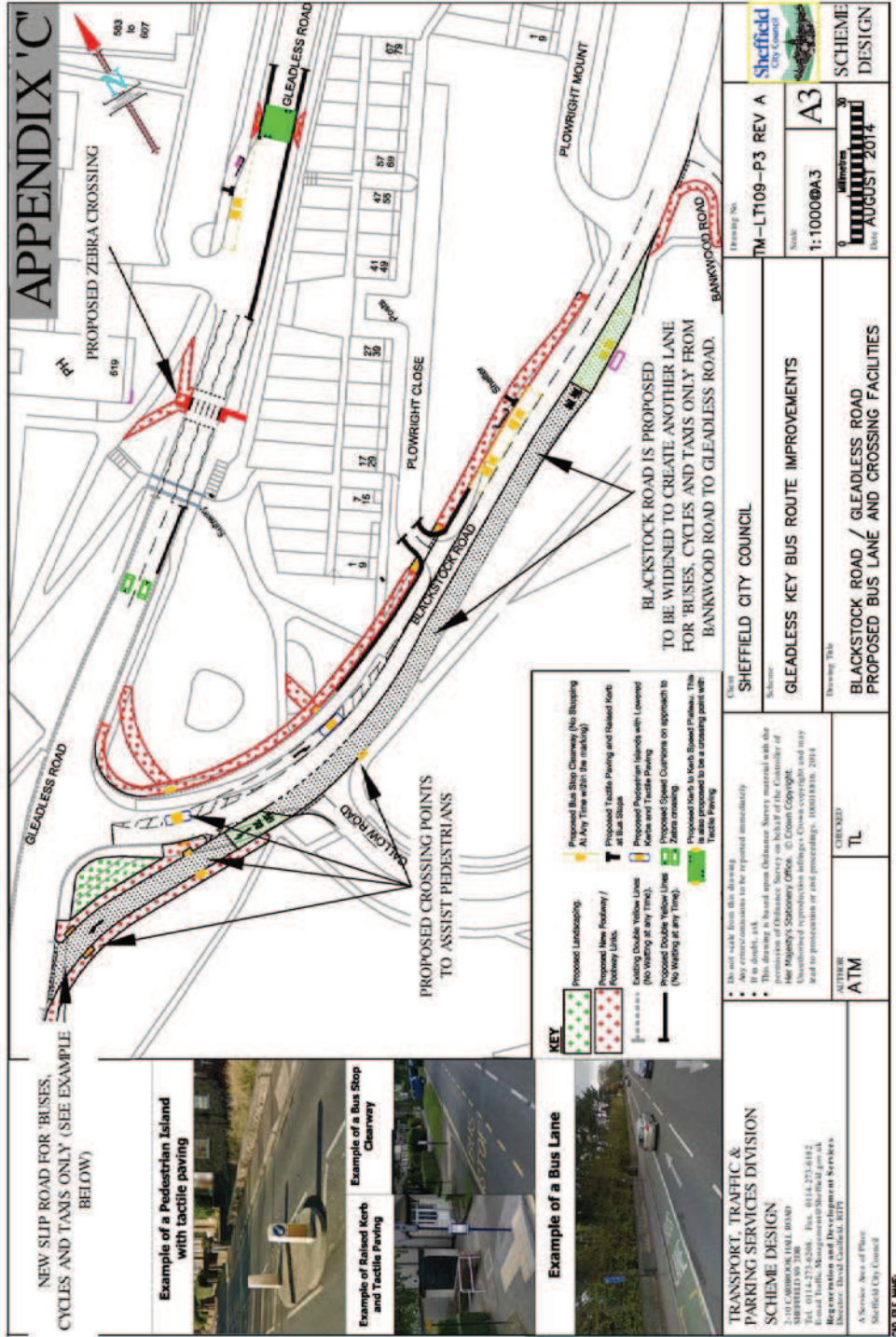
Invertebrates

| | | |
|------------|-----------------------|--|
| Crane fly | Tipulidae | |
| Drone fly | <i>Eristalis</i> sp | |
| Hoverfly | Syrphidae | |
| Sac spider | Clubionidae | |
| Wasp | <i>Vespa vulgaris</i> | |

Birds and mammals

| | | |
|---------------|--------------------------------|--|
| Magpie | <i>Pica pica</i> | |
| Feral pigeon | <i>Columba livia domestica</i> | |
| Wood pigeon | <i>Columba palumbus</i> | |
| Grey squirrel | <i>Sciurus carolinensis</i> | |

9.2 Survey design document TM-LT109-P3 REV A



9.3 Report on the potential for bat roost of trees associated with the Gleadless KBR

Introduction

A planned road improvement scheme on Gleadless Road from the Blackstock Road area down to the junction with Myrtle Road will require some widening of the carriageway. This will impact upon trees on the side of the road to varying degrees with some required to be felled, others having crown reductions. The legal protection given to bats has meant that the Highway Authority has required an assessment of the trees which may be affected to ensure that bats or their roosts are not impacted. Therefore a survey was commissioned to assess the potential for bat roosts of all trees that could be affected by the planned improvement works.

Legislation

All British bats are listed under Annex IV of the EC Directive 92/43/EEC 'The Conservation of Natural Habitats and of Wild Fauna and Flora', the Habitats Directive. They are protected under the Conservation of Habitats and Species Regulations 2010 (which transpose the EU Habitats Directive into UK law) as 'European Protected Species'.

It is illegal under this regulation to: -

- deliberately capture or kill a wild animal of a European protected species;
- deliberately disturb any such animal;
- damage or destroy a breeding site or resting place of such an animal.

Bats are also afforded full legal protection under Schedule 5 of the Wildlife and Countryside Act (1981) and subsequent amendments i.e. Countryside and Rights of Way (Crow) Act 2000. Under the provisions of Section 9 it is an offence for anyone without a licence to:

- intentionally kill, injure or take a species of bat;
- recklessly or intentionally damage or obstruct access to, or destroy any place of shelter, or protection, or disturb any animal, whilst they are occupying such a place of shelter or protection;
- possess or control any live or dead specimen or anything derived from a bat.

Once a bat roost is confirmed the above legislation and regulations apply whether bats are physically present or not.

The assessments

The assessments were carried out by out by experienced ecologist Martin Nowacki MCIEEM who holds a Natural England Bat Survey Level 2 Class Licence 2014-3332-CLS. Assessments used the BCT Best Practice Guidance 2012 (Hundt L, BCT, 2012) for the categorisation of trees for bat roost potential.

Gleadless Road, Blackstock Road junction. A sycamore (*Acer Pseudoplatanus*) that had been subject to previous assessments was assessed as being Category 2 as it is a mature tree but has very limited features that could offer roost potential. There are some small cavities but these are generally upward pointing and of a shallow depth that would offer no protection for roosting bats. Ivy growth on the trees is limited and not substantial enough to provide roosting opportunities.

9.4 References

Defra (2007) *Hedgerow Survey Handbook*. A standard procedure for local surveys in the UK.

Hundt, L. (2012) *Bat Surveys Good Practice Guidelines*, 2nd Edition, Bat Conservation Trust

Institute of Ecology and Environmental Management (2012) *Guidelines for Preliminary Ecological Appraisal*

Joint Nature Conservation Committee (2010) *Handbook for Phase 1 habitat survey*, A technique for environmental audit

Natural England (2010) *Bat habitat assessment prior to arboricultural operations*, Guidance for Natural England's National Nature Reserves



TREE CONDITION SURVEY &
ARBORICULTURAL IMPACT ASSESSMENT
FOR:

**Blackstock Road / Gleadless Road
Proposed Bus Lane**



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Tree Condition Survey & Arboricultural Impact Assessment: Blackstock Road/Gleadless Road Proposed Bus Lane

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Tree Condition Survey & Arboricultural Impact Assessment: Blackstock Road/Gleadless Road Proposed Bus Lane

1. Terms of Reference

- 1.1. This tree survey has been requested by the Transport, Traffic and Parking Services Division of Sheffield City Council to consider the impact on nearby trees of proposals to construct a bus lane near the junction of Blackstock Road and Gleadless Road, Sheffield. This report is based on the layout of the scheme as shown on drawing number: TMLT-109-P3-Revision C.
- 1.2. This survey is based upon British Standard 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*, to provide the following information:
 - The location and overall condition of those trees that are likely to be affected by the proposals.
 - To consider the likely impact on those trees and whether the proposals may result in their retention, pruning or removal.
 - To define Root Protection Areas
 - To provide general information on potential replacement tree planting.

2. Survey Conditions

- 2.1. Name of arboricultural consultant(s)/surveyor(s): Jerry Gunton, Tree Manager, Sheffield City Council
- 2.2. Date(s) of inspection: 1st October 2014
- 2.3. Weather Conditions: dry and bright

3. Data Collection Methods

- 3.1. A visual tree assessment of the canopy, stem and rooting area (visible surface roots only) was carried out from ground level. Hidden defects could exist within the crowns, which could only be identified via an aerial inspection.
- 3.2. Please note this report refers to conditions on the dates the sites were inspected (trees are dynamic organisms subject to change).

4. **Key to Survey** (read in conjunction with survey schedule on page 12)

- 4.1. **Tree ref** - Individual or groups of trees as identified on the tree plan and in survey schedule (prefixed 'T' for an individual tree, or 'G' for a group).
- 4.2. **Species** – English/Common name with botanical name in brackets
- 4.3. **No.** - Indicates the number of individual trees within the group.
- 4.4. **Height** – Approximate height in metres.
- 4.5. **Stem diameter** – Stem diameter measurement in millimetres, taken at 1.5 metres from ground level using a calibrated diameter tape. Multi-stemmed trees are measured immediately above the root flare (where possible), or quantified as two-thirds of the total individual stem measurements. Estimated measurements are made where access difficulties do not allow an accurate reading to be taken.
- 4.6. **Crown spread** – Approximate radial branch spread in metres for each of four compass points.
- 4.7. **Age class** – Approximate age based on the following categories:
Y: Young – Established tree in the first third of life expectancy for species.
EM: Early-mature – Still actively growing, and gauged to be in the second third of life expectancy for species.
M: Mature – Tree which has substantially attained full height and spread for species.
OM: Over-mature – Tree that has attained full stature and in decline, usually in final third of life expectancy for species.
- 4.8. **Condition** – Physiological condition classified as follows:
G: Good – Tree free from significant defects and good physiological condition
F: Fair – Tree with remediable defect(s) and/or below average physiological condition
P: Poor – Tree with significant/irremediable defect(s) and/or poor physiological condition
D: Dead tree
- 4.9. **Life expectancy** – Values are approximate and based on the general condition, species, vigour and maturity of individual specimens at the time of inspection and classified as follows:
<10: Less than 10 years
10+: 10-20 years
20+: 20-40 years
40+: 40+ years
- 4.10. **TQA (Tree Quality Assessment) category** – Trees to be considered for retention or removal are categorised as follows (based on BS 5837):

- **Category U** refers to trees in such a condition that any existing value would be lost within 10 years and which, in the current context, can be considered for removal for reasons of sound arboricultural management. They are identified on the plan with the colour **red**.
- **Category A** trees are of high quality and value, in such a condition as to make a substantial contribution (a minimum of 40 years is suggested) – where possible these trees should be retained. They are identified on the plan with the colour **green**.
- **Category B** trees are of moderate quality and value, in such a condition as to make a significant contribution (a minimum of 20 years is suggested) – again, efforts should be made to retain these trees unless their retention would have a significant impact on the design proposals in which case their removal should be mitigated by appropriate new planting. They are identified on the plan with the colour **blue**.
- **Category C** trees are of low quality and value or young trees with a stem diameter below 150mm. Condition is adequate to retain until new planting is established. However, where this would impose significant constraints on development, they will not usually be retained. Where this is the case, young trees with a stem diameter below 150mm may be considered for relocation. They are identified on the plan with the colour **grey**.

These are placed into subcategories as follows with the use of a number after the letter:

- 1: Mainly arboricultural qualities
- 2: Mainly landscape qualities
- 3: Mainly cultural values, including conservation

Each subcategory carries equal weight (i.e. a tree categorised as A1 has the same retention value as a tree categorised as A2 or A3).

- 4.11. **RPA radius (m)** - Root Protection Area radius, measured in metres from the centre of the trunk in all directions. It defines the minimum area to be established around each tree selected for retention to be protected by fencing (as per BS 5837:2012) and considered off limits to any excavation work, vehicle movement (unless suitable hard standing exists) or storage of materials during any redevelopment of the site. It provides protection to sufficient rooting volume to ensure survival of the tree.
- 4.12. **Comments** – Indicate the most obvious features and/or problems evident on site, relevant to an individual specimen or group of trees.

5. Importance of Trees and Woodlands

- 5.1. All trees make a contribution to the urban forest, enhancing the appearance of sites and providing a whole variety of benefits that are particularly important to quality of life.
- 5.2. Trees dramatically improve and enhance the local environment. They soften the built environment, making urban areas more attractive. They have a positive impact on health issues such as asthma, skin cancer and stress related illnesses by absorbing noise and air pollution, filtering out dust and particulates from the atmosphere, producing oxygen, providing shade from harmful solar radiation and providing attractive, calming settings for relaxation and recreation. They contribute to biodiversity by bringing birds and wildlife into the city. Furthermore, trees attenuate excessive temperatures, reduce wind speed, provide shelter and moderate air turbulence around buildings, all of which serve to reduce heating and cooling costs. They also intercept rainfall and reduce ground water run-off, playing an important role in flood control and sustainable urban drainage schemes.
- 5.3. Property developers believe that established trees situated in appropriate locations can increase the value of property by up to 18%.

6. Summary of Survey Findings

- 6.1. The survey area includes the two public open spaces either side of Blackstock Road at its junction with Gleadless Road, Sheffield. On the western side of the junction is a large relatively flat open space containing many mature and early mature trees including large specimens of Beech, Lime, Oak and Sycamore. To the east of the junction is a small steep open space with a number of old fruit trees and one large Ash tree. Both open spaces and in particular their existing tree cover are considered important for the visual amenity of the area, as a habitat for wildlife and for their ability to filter the surrounding air of harmful pollutants at what is a busy road junction.
- 6.2. Whilst the 2 open spaces contain many trees, this survey only details those that are likely to be affected by the proposals and specifically those proposals shown on drawing number: TMLT-109-P3-Revision C. The proposals only affect the edge of both open spaces and all those trees not included in the survey are considered to be of sufficient distance away that the proposals should have no significant impact on either their root systems or crowns. Measures recommended to protect the trees should construction go ahead are given in 7.0
- 6.3. Photographs of the trees detailed in this survey are shown in Appendix 1 of this report.
- 6.4. 11 specific trees are detailed in this report including 3 large specimens of Sycamore, Ash and Holm Oak. The Holm Oak is notable in that it is one of only a handful of its species established in Sheffield. Also included are a

group of 4 mature fruit trees (Pear and Apple) that appear to be the remnant of an old orchard, 2 young Ash (probably self-set) and a group of 3 young Elm stems which probably originated as root suckers from an old Elm stump nearby. The final tree is a large spreading Laurel. Most of these trees are in fair or good condition and all contribute to the current amenity of the area.

6.5. The current proposals are likely to have the following impact on these trees:

- The large Ash (T1); Laurel (T7); young Ash (T8 & T10); young Elm (T9) and large Sycamore (T11) will be affected to such a large extent that all would need to be removed to undertake the proposed construction.
- The mature fruit trees (T2 – T5) in the old orchard area are sufficiently far away from the proposed construction and are therefore unlikely to be affected by the proposals.
- The Holm Oak (T6) will only be marginally affected by the proposals where the edge of the proposed new footpath crosses over one edge of the recommended root protection area. Careful construction of this particular part of the proposals should ensure that any impact on this tree is minimised allowing its long term retention.

6.6. In terms of impact on the amenity of the area, the two significant losses will be the Ash (T1) and the large Sycamore (T11)

6.7. The loss of these trees can be mitigated to some extent by the planting of new trees within the existing open spaces. See 10.0 for further details.

7. Protection of Retained Trees

7.1. Those trees identified for retention need to be adequately protected throughout the construction process. Compaction and/or even minor changes in existing soil levels can cause significant damage to the root systems of established trees. It is therefore, essential that a suitable root protection area is established encompassing all those trees that are to be retained, protected by fencing and considered off limits to any excavation work, vehicle movement (unless suitable hard standing exists) or storage of materials.

7.2. The dimensions for recommended root protection areas (RPA) are given for each tree within the attached survey schedule and shown on the map as a dotted magenta coloured line.

7.3. Appropriate fencing in compliance with the recommendations made in British Standard 5837:2012 *Trees in relation to design, demolition and construction*. Should be erected prior to any excavations or construction taking place or any vehicles entering the grass areas of the site.

7.4. On this particular site, it is assumed that the protective fencing will follow a line just outside the outermost edge of the proposed footpath beside the

carriageway. If it is deemed essential for machinery to enter any root protection areas then the use of suitable ground protection (steel plates etc) must be employed.

- 7.5. Where the proposed footpath crosses the edge of the root protection area of the Holm Oak (T6) construction should incorporate a 'no-dig' solution. In this particular location the footpath should be constructed on top of the existing ground utilising a three-dimensional cellular confinement system, two-dimensional load suspension system, pads or suspended beams. Details for this particular part of the design should be agreed with the Tree Manager prior to construction.

8. Wildlife, Habitat Regulations and European Protected Species

- 8.1. Since 1994 it has been an offence, under the Habitats Regulations, to deliberately kill or cause significant disturbance to a protected species, or to deliberately destroy their eggs. It has also been an offence to 'damage or destroy a breeding site or resting place' used by them.
- 8.2. However, recent changes have been made to the Habitats Regulations to ensure that it complies with the EU Habitats Directive. It impacts on land management by increasing the level of legal protection given to protected species (including all species of bats).
- 8.3. It is now an offence to cause any damage or destruction of a breeding site or resting place. (Previously, if damage was 'an incidental result of a lawful operation', and reasonable precautions had been taken to avoid it, it would not have been an offence).
- 8.4. Tree maintenance/management works need to be carried out in accordance with good practice guidance to minimise the risk of causing damage or disturbance to European protected species and to meet the relevant amended Regulations. This would include careful planning, necessary checks and a licence sought where required.

9. Tree Work

- 9.1. As a minimum requirement, all tree felling and pruning works should comply with British Standard 3998 *Tree work*.
- 9.2. Trees can be protected under Tree Preservation Orders, Conservation Areas and/or other Planning Conditions. The Environmental Planning Section of the Local Authority/Council should be consulted prior to finalising any tree work programme.

10. Tree Planting

10.1. Consideration should be given to the introduction of a tree-planting plan to achieve the following aims:

- Replace, on a 2 for 1 basis, trees that are due to be removed.
- Improve, expand on and enhance existing planting, with species selected for their botanical interest, form and autumn colour, appropriate to the setting. Careful species selection will minimise future problems/maintenance costs whilst ensuring continuity of tree cover. One suggestion would be to plant native, long lived species in the open space on the west side of Blackstock Rd and fruit trees within the remnant orchard on the east side of the road.
- Encourage greater diversity of structure both in terms of tree age and range of wildlife habitats.
- Positioned so as to enhance, not obscure open vistas and interesting landforms. It should also create green links and wildlife corridors with existing trees/groups, woodlands and green spaces. Other considerations may influence planting layout.

10.2. Planting should take place between the months of October and March inclusive.

11. Community Forestry

11.1. The successful establishment of trees and woodlands in the urban environment is dependent on a number of factors. Apart from the usual environmental factors, one of the most important considerations is the 'winning of hearts and minds'. Schemes that do not have the support of the local community are likely to be blighted with vandalism and complaints. Schemes that have been developed with significant input and in consultation with local residents are likely to be looked after, 'policed' and valued by a community who feel a sense of ownership for the scheme.

11.2. Community Forestry is about helping to improve the local environment through the management of existing trees and planting of new trees. It aims to improve and enhance the treed environment for the benefit of both present and future generations of residents.

11.3. For Community Forestry to be successful, it has to involve local people, schools and community groups, in all the different elements: from planning and decision making, through to implementation, planting and tending the trees. The beauty of Community Forestry is that everyone can get involved. The cost of a tree is a fraction of its potential value when you consider that it can have an impact on the environment for hundreds of years.

12. Other Useful Contacts

Tim Shortland, Community Forestry Manager, Parks & Countryside -
Tel: 0114 2734190; Mob: 07785 362289 – General community forestry advice

Richard Harris, Ecology Manager, Parks & Countryside –
Tel: 0114 2734481 – Advice on ecology/biodiversity issues, Wildlife, Habitat Regulations and European Protected Species.

Andrew Conwill, Environmental Planning –
Tel: 0114 2734224 - Tree Preservation Orders, Conservation Areas & Environmental Planning issues

13. References

British Standard 5837:2012, Trees in relation to design, demolition and construction – Recommendations
British Standard 3998, Tree Work
Bat Conservation Trust, Bat survey protocol
EU Habitats Directive
Mattheck, C – Updated Field Guide for Visual Tree Assessment
NHBC Practice Note 3, Precautions to take when building near trees

14. Tree Condition Survey Schedule - See attached spreadsheet and plans

APPENDIX 1: Photographs of trees likely to be affected by the proposals.



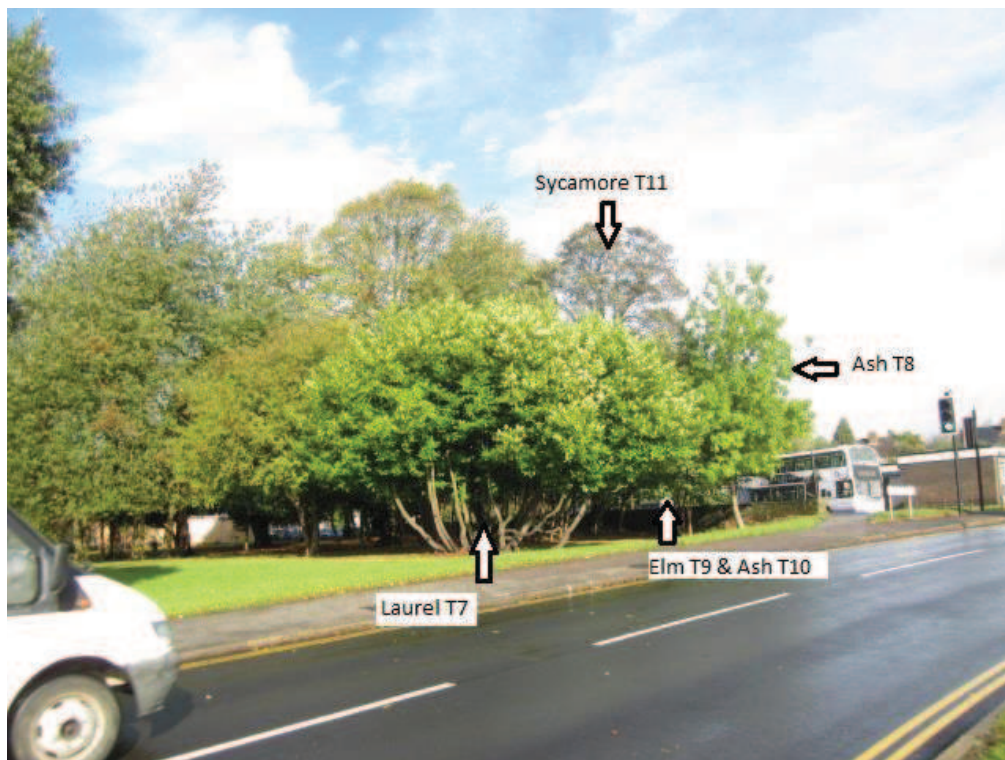
Photo 1: Trees affected by proposals. All those labelled (except Holm Oak T6) would be removed



Photo 2: Ash T1 – would be removed



Photos 3 & 4: Showing trees that would be removed



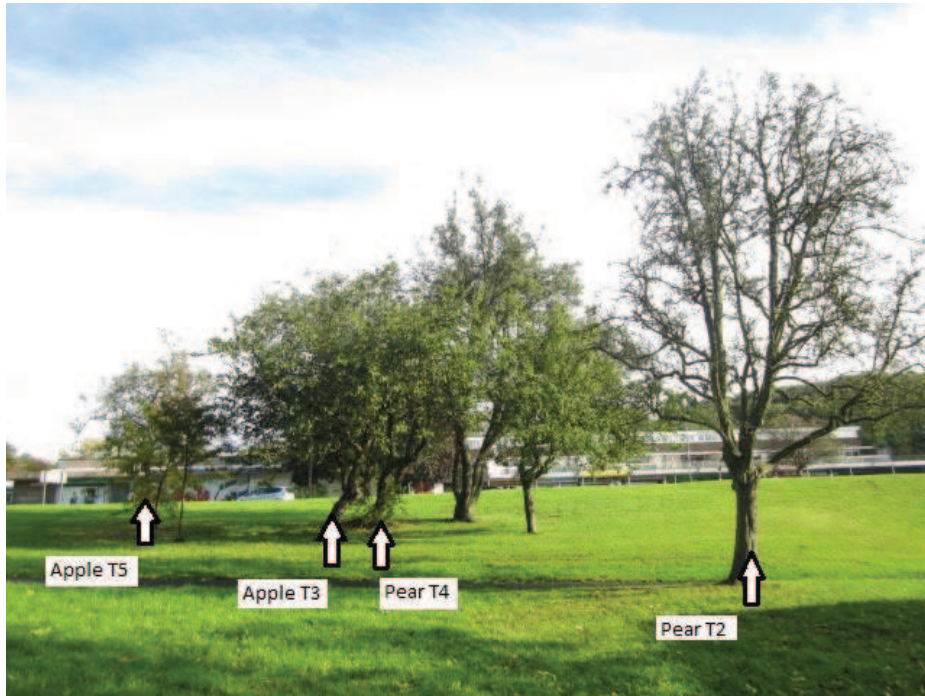


Photo 5: Fruit trees. Unlikely to be affected by proposals



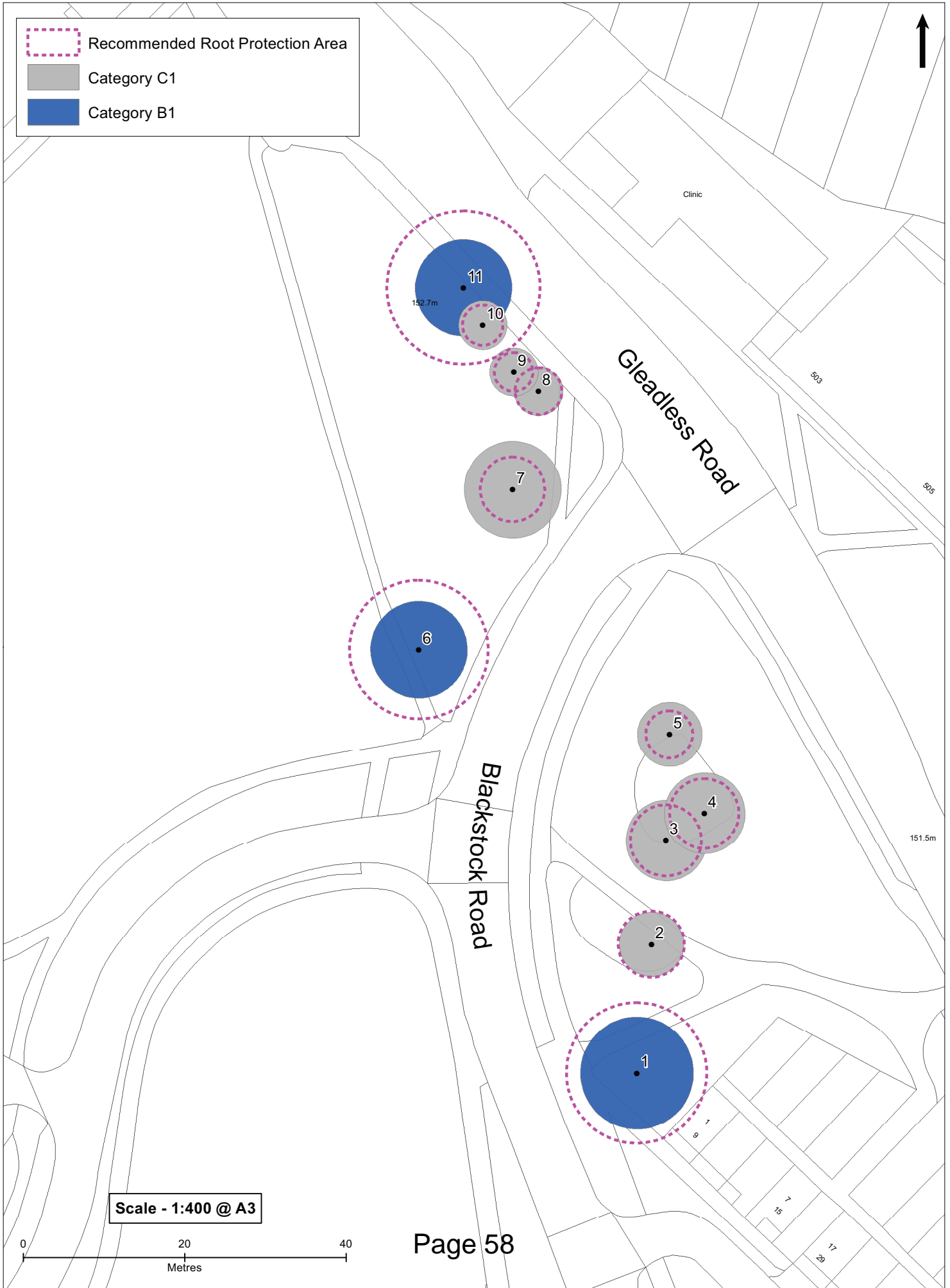
Photo 6: Holm Oak T6 Proposals will encroach on one edge of the recommended root protection area but shouldn't have a significant impact on this tree. Laurel T7 (in background) will be removed

TREE CONDITION SURVEY SCHEDULE

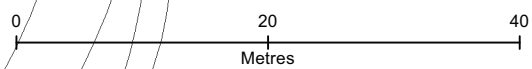
Site: Gleadless Rd & Blackstock Rd bus lane scheme
Date of inspection: 1st October 2014
Arboricultural consultant/survey: Jerry Gunton
Weather conditions: Sunny

| Tree ref | Species | No. | Height (m) | Stem diameter (mm) | Crown spread (m) | | | | | | Height of crown clearance (m) | Age Class | Con-dition | Life expec-tancy | TQA category | RPA (m) | Comments |
|----------|-------------------------------------|-----|------------|--------------------|------------------|---|---|---|--|---|-------------------------------|-----------|------------|------------------|--------------|--|----------|
| | | | | | E | W | S | N | | | | | | | | | |
| 1 | Ash (Fraxinus excelsior) | 1 | 16 | 730 | 6 | 7 | 5 | 7 | | 4 | EM | F | 40+ | B1 | 8.7 | Multi stemmed from base. Current proposals would result in construction taking place approx 3m from base of this tree. Would result in removal of tree | |
| 2 | Pear (Pyrus species) | 1 | 8 | 340 | 4 | 2 | 3 | 3 | | 2 | M | F | 20+ | C1 | 4.1 | Sparse crown with some dieback at tips | |
| 3 | Apple (Malus species) | 1 | 6 | 370 | 3 | 3 | 5 | 3 | | 2 | M | G | 20+ | C1 | 4.4 | | |
| 4 | Pear (Pyrus species) | 1 | 8 | 355 | 2 | 4 | 5 | 3 | | 2 | M | F | 20+ | C1 | 4.3 | Old pruning wound at base. One sided crown due to competition with neighbours | |
| 5 | Apple (Malus species) | 1 | 7 | 240 | 3 | 3 | 2 | 4 | | 2 | M | F | 20+ | C1 | 2.9 | Old pruning wounds at base | |
| 6 | Holm Oak (Quercus ilex) | 1 | 11 | 720 | 6 | 4 | 6 | 3 | | 2 | EM | F | 40+ | B1 | 8.6 | Two large torn wounds on main stem from past limb failures. Relatively rare as a mature tree in Sheffield | |
| 7 | Cherry Laurel (Prunus laurocerasus) | 1 | 8 | 330* | 6 | 6 | 5 | 6 | | 1 | M | G | 20+ | C1 | 4 | Multi-stemmed with approx 13 stems probably originating from one plant. Stem diameter measurement based on 2 typical stems. Recommended root protection area is based on knowledge of species. line of proposed construction runs close to stem base, whilst current crown spread significantly overhangs proposed construction area. Current proposals would result in loss of most of this plant | |

Gleadless Road & Blackstock Road Site - Tree Condition Survey



Scale - 1:400 @ A3



APPENDIX B

Blackstock Road/ Gleadless Road – Ecological Assessment:

In general, this is a small site with a medium level of ecological interest based on the site observations. The grassed areas contain a variety of common species, all of which will be kept in check by the current regime of regular and close mowing. Of interest are the mature and veteran trees which provide valuable habitat to invertebrates, birds and small mammals. Trees are categorised as ‘veteran’ due to both size and various physical features such as spreading crowns and thick boughs that are exposed or semi-exposed to sunlight. Valuable resources in these trees include bark crevices, dead bough ends and heart rot. Many species of invertebrates require small cavities, so the trees do not necessarily have to be ancient to be of importance. Veteran trees and relict orchard trees are a local and national priority habitat as defined by the UK BAP and the NERC Act Section 41. In this setting they are likely remnants of former woodland or wood pasture and traditional orchard and as such are of conservation significance. Ecological impact on this area, whilst potentially quite small, should be kept to an absolute minimum and offset by enhancements elsewhere on site in line with the requirements of the NPPF if planning permission is required – to preserve, restore and re-create priority habitats and ecological networks.

Whilst faunal interest was limited, the species recorded indicate how a small green space such as this forms an important part of the wider matrix of habitats in this part of Sheffield. The trees on site will potentially provide feeding and nesting opportunity for birds and observations suggest that the mature trees may harbour some potential to support bats. With regard to other priority groups, the site is judged to have low potential for reptiles and no current potential for amphibians.

If the Blackstock Road bus lane and road widening scheme is to proceed, a number of measures are proposed for both mitigation and enhancement of wildlife opportunities. These should contribute an overall net improvement to the site ecology when the works are completed.

- Tree works - felling, ground excavation or removal of tree limbs should closely follow the advice set out in the arboricultural report minimising damage to remaining trees and their root systems.*
- The bus lane could be redesigned to minimise land take, avoiding the holm oak and possibly the sycamore.*
- Planting of replacement trees and/or shrubs should occur and this must be relevant to setting i.e. fruit trees in the orchard area and native British species in the wooded area.*
- The honey locust should be removed and replaced with a native fruit tree.*
- A change in grass-cutting management to a more ecologically sensitive regime, therefore encouraging greater grassland diversity.*
- Bird boxes could be installed in some of the mature trees.*
- Bat boxes could be installed in some of the mature trees if deemed appropriate for this site.*
- Some felled wood could be left on site, providing valuable deadwood habitat for invertebrates.*

Tree Condition Survey

(Please refer to the last page of the Survey report in Appendix 'C' for details of tree removals):

Whilst the 2 open spaces contain many trees, this survey only details those that are likely to be affected by the proposals. The proposals affect only the edge of both open spaces and all those trees not included in the survey are considered to be of sufficient distance away that the proposals should have no significant impact on either their root systems or crowns.

Eleven specific trees are detailed in this report including 3 large specimens of Sycamore, Ash and Holm Oak. The Holm Oak is notable in that it is one of only a handful of its species established in Sheffield. Also included are a group of 4 mature fruit trees (Pear and Apple) that appear to be the remnant of an old orchard, 2 young Ash (probably self-set) and a group of 3 young Elm stems which probably originated as root suckers from an old Elm stump nearby. The final tree is a large spreading Laurel. Most of these trees are in fair or good condition and all contribute to the current amenity of the area.

The current proposals are likely to have the following impact on these trees:

- The large Ash (T1); Laurel (T7); young Ash (T8 & T10); young Elm (T9) and large Sycamore (T11) will be affected to such a large extent that all would need to be removed to undertake the proposed construction.*
- The mature fruit trees (T2 – T5) in the old orchard area are sufficiently far away from the proposed construction and are therefore unlikely to be affected by the proposals.*
- The Holm Oak (T6) will only be marginally affected by the proposals where the edge of the proposed new footway crosses over one edge of the recommended root protection area. Careful construction of this particular part of the proposals should ensure that any impact on this tree is minimised allowing its long term retention. In terms of impact on the amenity of the area, the two significant losses will be the Ash (T1) and the large Sycamore (T11). The loss of these trees can be mitigated to some extent by the planting of new trees within the existing open spaces.*

Those trees identified for retention need to be adequately protected throughout the construction process. Compaction and/or even minor changes in existing soil levels can cause significant damage to the root systems of established trees. It is therefore, essential that a suitable root protection area is established encompassing all those trees that are to be retained, protected by fencing and considered off limits to any excavation work, vehicle movement (unless suitable hard standing exists) or storage of materials. The dimensions for recommended root protection areas (RPA) are given for each tree within the attached survey schedule and shown on the map as a dotted magenta coloured line.

Appropriate fencing in compliance with the recommendations made in British Standard 5837:2012 should be erected prior to any excavations or construction taking place or any vehicles entering the grassed areas of the site. On this particular site, it is assumed that the protective fencing will follow a line just outside the outermost edge of the footway adjacent to the proposed carriageway. If it is deemed

essential for machinery to enter any root protection areas then the use of suitable ground protection (steel plates etc) must be employed.

Where the proposed footpath crosses the edge of the root protection area of the Holm Oak (T6) construction should incorporate a 'no-dig' solution. In this particular location the footway should be constructed on top of the existing ground utilising a three-dimensional cellular confinement system, two dimensional load suspension system, pads or suspended beams. Details for this particular part of the design should be agreed with the Tree Manager prior to construction.

Consideration should be given to the introduction of a tree-planting plan to achieve the following aims:

- Replace trees that are due to be removed on a 2 for 1 basis.*
- Improve, expand on and enhance existing planting, with species selected for their botanical interest, form and autumn colour, appropriate to the setting. Careful species selection will minimise future problems/maintenance costs whilst ensuring continuity of tree cover. One suggestion would be to plant native, long lived species in the open space on the west side of Blackstock Rd and fruit trees within the remnant orchard on the east side of the road.*
- Encourage greater diversity of structure both in terms of tree age and range of wildlife habitats.*
- Positioned so as to enhance, not obscure open vistas and interesting landforms. It should also create green links and wildlife corridors with existing trees/groups, woodlands and green spaces. Other considerations may influence planting layout. Planting should take place between the months of October and March inclusive.*

APPENDIX 'D'

Consultation Responses

The Gleadless Valley Wildlife Trust –

GVWT have objected to the Blackstock Road bus lane scheme on the following grounds:

- They consider the land to the east and west of the proposals to have 'high local environmental value'.
- Concerns that the widening to the east will have a negative impact on the 'old orchard' where there are 'productive apple and pear trees'.
- They do not believe that the larger specimens of Ash to the east and Sycamore to the west can be replaced by planting. Replacement planting cannot adequately compensate for the loss of these larger older trees, as it will take over 100 years for the newly planted trees to reach a similar age.
- Concerned that the removal of 4 young trees and small shrubs to the west will have a negative impact on nesting bird species.
- Concerns remain on the impact to the Holm Oak to the west which is a valuable species.
- Feel that a small reduction in peak period bus times is not sufficient justification for the loss of valuable trees.
- This 'green oasis' is greatly valued by the group's members and local people.

Officer response:

The design team are aware of the ecological importance of the land to both sides of the proposed carriageway widening and have made a number of adjustments to the alignment of the new slip road and footway so to minimise the ecological impacts. Trees affected by the proposals will be replaced with semi-mature specimens which are robust and fit-for-purpose. The area of parkland affected by the relatively short length of new slip-road (approx. 50m) is not excessive and the areas adjacent to the new highway will be landscaped (as appropriate) and maintained to maximise the attractiveness of the parkland and soften any impact resulting from the new length of highway.

A number of mitigation measures have been identified in both the EA and AIA and it is the intention of the Council to fully implement the recommendations set out in appendix 'C'.

The proposals described in this report will contribute to overall journey time savings for the Gleadless KBR (see appendix 'E'). The journey time savings for this section as well as the overall route are considered significant, enabling improvements to punctuality and reliability and are fully supported by the Bus Partnership.

Overall the design team consider that the mitigation measures and re-planting regime proposed offset the negative impacts on the local environment to enable an inbound bus lane to be implemented.

Appendix -E

Cost & Benefits of Sheffield Gleadless Schemes

| Schemes | Estimated Final Cost (£) | Services | Frequency (buses per hour) | Average inbound time savings/bus | Average Outbound time savings/bus |
|---|--------------------------|---------------------|----------------------------|--|-----------------------------------|
| Schemes Completed to Date | | | | | |
| Phase 1 & 2 Bus Stop Improvements | 221,954 | 79,79A/47,48/20,20A | 3/12/6 | Difficult to quantify, not significant, but will benefit better operation of services along the route and manoeuvring of buses safely and efficiently at junctions | |
| Blackstock Road bus terminus | 55,593 | 79,79A/48/20,20A | 3/12/6 | | |
| Raeburn Road/Constable Road (junction improvements) | 53,365 | 48 | 12 | | |
| Raeburn Road/Leighton Road (minor improvements) | 10,617 | 47 | 12 | | |
| Sub Total | 341,529 | | | | |
| Schemes Approved for delivery | | | | | |
| Phase 3 Bus Stop Improvements | 226,994 | 79,79A/47,48/20,20A | 3/12/6 | Not significant, but will remove bottle necks resulting in time savings | |
| Blackstock Road/Constable Road (junction improvements) | 218,501 | 79,79A /48 | 3/12 | | |
| Richards Road (road widening) | 412,272 | 47 | 12 | 11 secs | 9 secs |
| Sub Total | 857,767 | | | | |
| Schemes Un-Approved | | | | | |
| (Subject to Consultation,scope & EFC may vary) | | | | | |
| Blackstock Road (Bankwood Road to Gleadless Road) Inbound bus lane | 349,788 | 79 | 3 | 86 secs | Not significant |
| | | 79A | 3 | 60 secs | |
| | | 48 | 12 | 76 secs | |
| Prospect Road/Myrtle Road (scope and cost to confirm) Inbound bus lane | 250,000 | 47 | 12 | AM peak - 52 secs PM peak - 21 secs | 9 secs |
| Sub Total | 599,788 | | | | |
| Miscellaneous | | | | | |
| SCC Design Fees, Surevys, TROs and Risk | 170,142 | | | | |
| Grand Total | 1,969,226 | | | | |

Analysis of time savings for the Services along the route

| Services | Distance of the route | Average Scheduled Journey Time | Average Actual Journey Time | Difference (Delay) | Average In bound Bus Time Savings Benefits | % of whole route delay saved |
|----------|-----------------------|--------------------------------|-----------------------------|--------------------|--|------------------------------|
| 47 | 2.73miles | 12m 15 sec | 13m 50 sec | 1m 35 sec | 63 secs | 66% |
| 48 | 3.14miles | 15m 55 sec | 16m 32 sec | 37 sec | 60 secs | 162%(*) |
| 79/79A | 2.78miles | 13m 59 sec | 14m 48 Sec | 49 sec | 60 secs | 122%(*) |

Source: Real Time ACIS Data

Note: (*) Intervention included removal of bus waiting at traffic signals

GLEADLESS KBR

Assessment of potential time savings per bus

Blackstock Road (Bankwood Road to Gleadless road)

Services 79, 79a & 48

The scheme comprises a widening of Blackstock Road on the east side between its junctions with Plowright Mount and Gleadless Road to accommodate an inbound bus lane between Bankwood Road and Gleadless Road. A new bus/cycle left-only slip road between Callow Road and Gleadless Road is proposed to bypass the signals at the Blackstock Road/ Gleadless Road junction. The new junction formed with Gleadless Road will be on a give-way arrangement. A bus entering the slip Road will call a green light at the junction to allow buses direct access to Gleadless Road. The bus lane will be operational at all times and will need to be enforced, ideally with camera enforcement. The scheme will also incorporate a pedestrian refuge near the junction with Callow Road to aid pedestrians crossing Blackstock Road to access the subway beneath Gleadless Road.

Average inbound time savings

The proposed bus-only left slip, (signal-controlled on the approach to Gleadless Road) necessitates full time operation of the inbound bus lane. Accordingly, time savings will apply to all buses throughout the day over the whole section of 0.13 miles. As bus speeds along this length of Blackstock Road currently vary little throughout the day, specific peak hour savings have not been calculated – an average speed has been assumed for the whole of the operational day in each case. Consequently, it's likely that the time savings calculated will be slightly underestimated. All speed/distances are based on Operator's submitted data.

Time-saving calculations by service:

Service 79 (0600 – 2000 hours) – Average speed/bus over section 25 = 4.6 mph, therefore average time taken to negotiate this section (0.15 miles) = 117 seconds.

Average speed/bus over a 'free-flow' section of similar length on Blackstock Road (ie section 23) = 15.1 mph, therefore, assuming a similar average speed, the average time taken to negotiate the proposed bus lane/ bus only slip section (0.13 miles) = 31 seconds.

Average timesaving/bus between 0600 hrs and 2000 hrs = $117 - 31 = 86$ seconds

Service 79A (0600 – 2200 hours) – Average speed/bus = 6 mph, therefore average time to negotiate section 25 (0.15 miles) = 90 seconds

Average speed/bus over 'free-flow' section (section 23, as above) = 15.4 mph, therefore average time taken to negotiate 'new' section (0.13 miles) = 30 seconds.

Average time saving/bus between 0600 hrs and 2200 hrs = $90 - 30 = 60$ seconds

Service 48 (0500 – 2300 hours) – Average Speed/bus = 5.1 mph, time taken to negotiate section 11(as section 25 above, 0.15miles) = 106 seconds.

Average speed/bus over 'free-flow' section 9 (as section 23 above) = 15.5 mph, therefore average time taken to negotiate the 'new' section (0.13 miles) = 30 seconds.

Average time saving/bus between 0500 hrs and 2300 hrs = $106 - 30 = 76$ seconds

Average out-bound time savings

It is not considered that any out-bound time savings of any significance will accrue as a result of the proposed measures.

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