

**The Town and Country Planning (Environmental
Impact Assessment)(England and Wales)
Regulations 1999**

Environmental Impact Assessment Scoping Request

Proposed Colney Lane Bus Link,
University Campus to Colney Lane

For

The University of East Anglia

December 2006

University of East Anglia
Proposed Colney Lane Bus Link

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Table of Contents

1	INTRODUCTION.....	1
	Background	1
	The Strategic Importance of the UEA.....	1
	The Bus Link Concept and the Need for the Development	2
	The Purpose of this Report	4
	Cumulative Effects	6
	Off-Site Effects	6
	Alternatives.....	6
	Consultation	6
2	THE PROPOSED DEVELOPMENT	7
	Site Location and Context	7
	Description of the Development	7
	Consideration of Alternatives	9
3	THE PROPOSED SCOPE OF THE EIA.....	10
	Planning Policy	10
	Air Quality.....	11
	Recreation and Sport	11
	Cultural Heritage	12
	Ecology.....	13
	Landscape and Visual Impact	14
	Contamination	15
	Noise	15
	Socio-economic.....	16
	Transportation	16
	Water Quality, Hydrology and Flood Risk.....	18
4	SUMMARY OF THE PROPOSED SCOPE OF THE EIA	19

Appendices

Appendix A Scoping as Part of the EIA Process

Appendix B Plan 1: Existing Bus Regime Relating to Norwich City Centre, the UEA and NNUH

Plan 2: Location of UEA in Relation to Norwich City Centre

Plan 3: Bus Link Options Plan

1 INTRODUCTION

Background

- 1.1 This document sets out the proposed scope of the Environmental Impact Assessment (EIA) that will be carried out by the University of East Anglia (UEA) for the Colney Lane Bus Link Project. The proposals will establish a dedicated bus link between the UEA and Colney Lane and the Norwich Research Park Institutes including the Norfolk and Norwich University Hospital (NNUH). The scheme straddles two Local Planning Authority (LPA) boundaries and this Scoping Request will, therefore, be submitted to South Norfolk Council and Norwich City Council, for their formal EIA 'Scoping Opinion'.

The Strategic Importance of the UEA

- 1.2 The UEA is a campus university located two miles outside of Norwich city centre set in 320 acres of parkland. UEA admitted its first undergraduate students in 1963. It currently has over 13,000 students including 1,200 international students from 100 countries worldwide. It employs over 2,200 staff (approximately 1,500 full-time) and offers a choice of over 300 courses through 23 Schools of Study operating within four faculties - Science, Social Sciences, Humanities and the Institute of Health.
- 1.3 As well as the Schools of Study referred to above, the university incorporates a number of other functions and facilities, namely:
- The Nursing and Midwifery School (NAM) based at the NNUH site.
 - The UEA is a leading member of the Norwich Research Park (NRP), a co-operative including the John Innes Centre (JIC), the Institute of Food Research (IFR), the Sainsbury Laboratory and the NNUH NHS Trust. The NRP has 6,500 staff and over 900 postgraduate research science students. It has strong links with the Norfolk and Norwich University Hospital NHS Trust and other health providers, in all aspects of bio-medical research involving the UEA Schools of Health, Biological Sciences and Environmental Sciences.
 - A recently constructed multi-million pound Sportspark, including a 50m competition swimming pool, a climbing wall, fitness centre and a human performance laboratory.
 - The Sainsbury Centre for Visual Arts housing the Sainsbury Collection, combining modern Western works with fine and applied arts from across the globe.
- 1.4 As well as providing teaching, learning and research to students the UEA offers a wide range of services that are also available to businesses, visitors and the local community.

The Bus Link Concept and the Need for the Development

- 1.5 The concept of a bus only link between the main UEA campus and Colney Lane was initially considered in 1995 during the formulation of the application for planning permission for the new NNUH. This exercise indicated that it would be extremely beneficial in public transport terms to establish a direct bus link across the University playing fields from UEA to the new hospital. This was because a bus-only route through the University campus could significantly reduce journey times between Norwich City centre, the University campus and the new hospital. This would have made the service much more attractive to passengers and have significantly reduced bus operating costs and emissions through a reduction in bus kilometres. The proposal did not however proceed at that time.
- 1.6 Further consideration was given in 2003 to a bus link given the increasing links and movements between UEA and NNUH and the Research Park Institutions after the opening of NNUH in 2002. Following a workshop arranged by UEA, stakeholders and potential users expressed an interest and made positive suggestions towards the implementation of a bus link, which was generally considered to have very beneficial public transport potential. Since 2003, linkages between UEA and NNUH have significantly increased, particularly as a result of the opening of the University Medical School and the School for Nursing and Midwifery such that there are now many more journeys made between the Campus and Colney Lane.
- 1.7 The existing bus regime relating to Norwich City Centre, the UEA and the NNUH is shown on **Plan 1** contained at **Appendix B**. UEA currently accommodates a one-way system through the campus, with an entrance off Earlham Road and the exit onto Bluebell Road. This means any buses travelling from the City Centre to UEA and then onto NNUH and NRP have to go back on themselves via Bluebell Road and Earlham Road, which increases bus miles. Hence the direct distance between the UEA's bus turning circle and Colney Lane is approximately one kilometre, whereas the distance that buses currently have to operate between these points is almost six kilometres. The existing route followed by buses is highly congested particularly during peak periods and somewhat tortuous with seven sets of traffic signals between UEA and NNUH to further slow down the passage of buses.
- 1.8 Until 2005 the local operator, 'First', operated its core service 25 (Norwich Station-City Centre-Unthank Road-Avenues-UEA-Hospital) via the current highway link to the hospital. However, in 2005 the company withdrew the service from the hospital so that it terminated at the UEA campus thus severing the frequent link between UEA and the hospital and much reducing public transport links between parts of the city and the hospital. In withdrawing the service First Bus cited the very poor regularity achieved on the campus to hospital section because of

the congestion on Earlham/Watton Road and its impact on the service overall and on operating costs.

1.9 First are committed in principle to reintroducing a frequent link between the campus and the hospital should the bus link become available.

1.10 UEA is committed to applying environmental principles in the way it manages and operates its estate. There are a number of key areas where UEA has set out its strategic commitment to making the environment and the issues of sustainable development a central element in decision-making. These are:

- 1. Through the UEA Conservation Development Strategy.**
- 2. Through the preparation and implementation of a Campus wide travel plan**
- 3. Through the implementation of an Environmental Management System;**
- 4. Through their approach to project procurement; and**
- 5. Through stakeholder involvement.**

1.11 The travel plan aims to minimise the number of private car journeys to and from the campus by encouraging car sharing, the use of other modes of transport, particularly buses, and where appropriate walking and cycling. UEA frequently reviews the effectiveness of the travel plan and the number of car borne visitors to the main campus. This is done for a number of reasons:

- There is currently insufficient car parking availability on the campus to accommodate demand even at the levels set in PPG 13 for higher educational establishments.
- There are no plans to improve the local road network, which is inadequate to serve the existing level of peak hour traffic along Earlham Road, and which seriously impedes access to the University and this part of Norwich generally.
- To accommodate UEA's changing travel patterns that alter as new schools open and linkages with other institutions and catchment areas adapt accordingly.

1.12 The University's development plan makes provision for continuing expansion in student numbers such that it is now anticipated that by 2008, there will be approximately 20,000 staff and students. This development is clearly dependant upon staff, students and employees being able to satisfactorily access the campus.

University of East Anglia
Proposed Colney Lane Bus Link

- 1.13 It is vital therefore that the travel plan is effective in enabling existing and future students, staff and visitors access the university which increasingly will depend on greater use of other modes of transport than the private car, which inevitably means greater use of public transport. This is becoming increasingly difficult as buses get caught up in traffic congestion, thus delaying services and eventually leading to the withdrawal of routes as has already occurred on route 25.
- 1.14 The Bus Link project is therefore being proposed to create an alternative direct and considerably more rapid public transport route between UEA and Colney Lane, thus bypassing the worst section of congested route along Earlham Road, and Watton Road and Bluebell Road. If this link is created, the following benefits are anticipated:
- There will be a considerably shorter bus route between UEA and the hospital and the Institutes on Colney lane than presently exists, saving many potential bus miles and subsequent vehicle emissions. It would also greatly reduce the number of bus movements on the local road network which should help relieve some of the existing congestion.
 - The shorter less congested distance will make bus use more attractive than the private car in terms of overall journey times, which should encourage people to use a more sustainable mode of transport in accordance with the aspirations of the travel plan.
 - Previously reduced bus services, notably First service 25, could be restored and enhanced to create a better bus service between the City and the Hospital and Colney Lane Institutes.
 - A safe and reliable public transport link would be created to ferry the increasing number of persons that need to travel between UEA and the Hospital and Colney lane Institutes.
 - The link would also create the potential for a significantly improved bus service into UEA from the western approaches to the University, thus encouraging staff students and visitors from this direction to use public transport.

The Purpose of this Report

- 1.15 UEA is voluntarily undertaking an EIA to support the planning application for the proposed bus link. By doing so the EIA will be subject to and carried out in accordance with, *The Town and Country Planning (Environmental Impact Assessment)(England and Wales) Regulations 1999*

- SI No. 293 (hereafter referred to as the 'Regulations'). More information is given about the EIA process in **Appendix A** of this document.

1.16 The Regulations provide a procedure whereby the scope of any EIA undertaken for a development project should be agreed with the LPA prior to it being carried out. Regulation 10 requires the following to be included as part of any request for an EIA 'scoping opinion' from the LPA:

- A plan sufficient to identify the land;
- A brief description of the nature and purpose of the development and its possible effects on the environment; and
- Such other information or representations as the person may wish to provide or make.

1.17 This scoping request will therefore, be submitted to the two LPA's for their formal scoping opinion prior to preparation of the Environmental Statement (ES), which is the document that reports the findings of the EIA.

1.18 The need for this focusing exercise is reflected in the Regulations and advice in DETR Circular 02/99. The Regulations state that an ES must consider those aspects of the environment **'likely to be significantly affected'**¹ and take them forward for detailed assessment. This, therefore, recognises that decisions need to be made about significance without the benefit of having carrying out a detailed assessment.

1.19 Consideration of which effects are likely to be significant will be made utilising information about:

- the expected magnitude of effects;
- susceptibility of sensitive receptors to exposure to effects;
- the expected duration of effects; and,
- the potential for mitigation to reduce any potential adverse effects to an acceptable level.

¹ EIA Regulations 1999, Schedule 4, Part 1, Paragraph 3.

- 1.20 The EIA will consider environmental effects arising from both the construction and operational phases of the development. It is intended that the EIA process will assist in informing the contractor in the preparation of the final design solution for the development.

Cumulative Effects

- 1.21 The EIA will take into account and consider other development proposals within the UEA estate and the Norwich Research Park (NRP) area. This process will ensure that a strategic overview of cumulative environmental effects can be undertaken.

Off-Site Effects

- 1.22 The EIA process should also consider whether the proposal gives rise to environmental effects elsewhere as a consequence of the development.
- 1.23 These types of issues could be, for example, increases in vehicular traffic on the wider road network or the visual impact of a development within the wider landscape. These will be identified and assessed as part of the EIA process.

Alternatives

- 1.24 As required under the Regulations, the EIA will provide an outline of the main alternatives studied by the UEA and the reasons for progressing with the favoured option.

Consultation

- 1.25 Consultation is an important element of the EIA process. It is designed to allow consultees to become engaged in the evolution of the development proposals and to ensure that their concerns and ideas are identified and can then be considered. Consultation starts with the scoping report.
- 1.26 Discussions have been held with both LPA's prior to issuing the Scoping Report. Further extensive consultations are intended to be held with other relevant consultees including Norfolk County Council, Local Parish Councils, statutory undertakers, amenity organisations and groups, transport user groups, and the local community, including the University during the formulation of the EIA.

2 THE PROPOSED DEVELOPMENT

Site Location and Context

- 2.1 **Plan 2** contained at **Appendix B** identifies the location of the UEA in relation to Norwich City Centre. The potential options and the surrounding environs are identified on **Plan 3** contained at **Appendix B**. The UEA is a campus University situated in an open parkland setting. The main part of the campus is located on the eastern side of the River Yare valley, which segregates the main built campus from Colney Lane, the NNUH, John Innes Institute and NRP to the West. Land between the western edge of the UEA Campus and the River Yare consists of plantation woodland and reedbed / meadow. The land between the River Yare and Colney Lane consists of grassland and existing UEA sports pitches, changing facilities and pavilion and depot area in an old quarry. A network of existing footpaths and cycleways link the UEA and Colney Lane and the NRP.

Description of the Development

- 2.2 **Overview** – Existing bus routes in and around the UEA, NRP and NNUH have been previously described. A number of options have been considered for possible routes for a bus link from UEA to the NNUH.
- 2.3 The proposed bus link, which is to be the subject of the EIA, would be a restricted roadway linking the present bus turning area at the western end of the UEA core campus, with Colney Lane, via one of 4 potential route options as follows:
- 1(i)(ii)(iii) The route follows the existing road from the bus turning circle at the end of Chancellors Drive, along the 'causeway' and over the River Yare Bridge. A dedicated exclusive bus route would follow a new line between the sports pitches with 3 minor variations until it exits to the south of the NNUH roundabout onto Colney Lane.
 - 2 The route follows the existing road from the bus turning circle at the end of Chancellors Drive, along the 'causeway' and over the River Yare Bridge. A dedicated exclusive bus route would follow a new line alongside the existing footway/cycleway via the Changing rooms adjacent Colney Lane.

These potential route options, with accompanying provision for cyclists and pedestrians, would be assessed as part of the ES.

- 2.4 **Turning Circle to River Yare Crossing** – From the existing turning circle to the River Yare crossing (approximately 160m) it is proposed that a single-track shuttle operation bus lane is

- provided, with a bus passing facility between the western end of the one-way section and the bridge itself.
- 2.5 The 160m section between the turning circle and River Yare will operate on a shuttle basis, one way at a time, with line of sight operation. Buses from the hospital (western, River Yare) section of the alignment will have priority over those from the main campus. Operators will be required to adhere to the overall campus maximum speed limit of 32km/h (or 20 mph). This will ensure that the potential for conflicts to arise with pedestrians and cyclists are minimised and that noise and other emissions are kept low. The shuttle operation requirement through the wooded area and across the Yare bridge will also impose some limitations on operations that will ensure that operating speeds are low.
- 2.6 **Bridge Crossing** – The existing bridge may be of sufficient strength to support shuttle based bus operations. Whilst wide enough for bus operations, separate provision would need to be made for pedestrians and cyclists. Thus a completely new bridge may be required to support the bus and cycleway or a new structure to provide for pedestrians and cyclists constructed adjacent to the existing structure. The most likely construction for a new bridge would be driven steel pile abutments (to avoid working close to the river), and a pre-stressed concrete beam deck.
- 2.7 Should the pedestrian and cycle route through the woodland section be physically separate from the bus link it is proposed to provide a second pedestrian 'boardwalk' type bridge across the river Yare to link the east side of the River Yare with the existing pedestrian route on the west side.
- 2.8 **Pedestrians and Cycles: River Yare Crossing to Colney Lane** - A combined busway, cycleway and footway, or a separate busway from combined cycleway and footway, or a combined busway and cycleway with separate footway, will continue to Colney Lane.
- 2.9 **Bus: River Yare Crossing to Colney Lane** - A dedicated exclusive bus route would follow one of four potential new lines between the sports pitches until it exits onto Colney Lane. The junction with Colney Lane would require traffic signals and its location would need to be carefully selected to ensure safety is maintained.
- 2.10 **Types of Buses to be used**- The bus capacity of the link will be determined by the land owner, UEA. Bus types will be a matter for the operator but the link will be designed to accommodate double deck vehicles and single deck up to the maximum permitted length of 18.75 metres. Buses will be no more than 2.55 metres wide, the current maximum permitted.

- 2.11 ***Anticipated traffic volumes and Frequency of Movements*** - It is likely that UEA will impose a maximum frequency of bus movements across the link to ensure the environment in the river valley and through the campus is as far as possible retained. This limit could be increased to allow additional small buses linking any extended development in the area with the campus.
- 2.12 ***Lighting*** – In addition to the present lighting over parts of the route it will be necessary to light the new sections of the bus link. This would be provided to the minimum standard required to ensure cycle/ pedestrian and safe bus operations, and in a form that respects environmental conditions.
- 2.13 ***Construction period*** – It is anticipated that construction of the works will commence in 2008 with the works due for completion within 18 months.

Consideration of Alternatives

- 2.14 The EIA Regulations place increased emphasis upon a review of alternatives to the proposed development. The alternatives considered by the UEA in relation to a bus link scheme are thus:
1. The do-nothing scenario.
 2. The dualling of University Drive to enable 2-way use by buses.
 3. The provision of a bus service between UEA and the NNUH and the potential alternative routes within this option including:
 - The provision for buses, cyclists and pedestrians and precisely how they would interface within the proposed scheme; and therefore, linked to this
 - The nature of the river crossing.
 - The exact route of the bus link to Colney Lane.

3 THE PROPOSED SCOPE OF THE EIA

Planning Policy

- 3.1 In respect of decision making in considering planning applications the presumption in favour of the development plan unless material considerations indicate otherwise is re-enacted as s.38 of the Planning and Compulsory Purchase Act 2004

"If regard is to be had to the development plan for the purpose of any determination to be made under the planning Acts the determination must be made in accordance with the plan unless material considerations indicate otherwise".

- 3.2 The ES will contain a section that describes current national, regional, strategic and local planning policy relating to the proposed development. This will provide the planning policy context for the proposals.

- 3.3 **National planning policy** – This is contained within a series of Planning Policy Statements (PPSs), Guidance Notes (PPGs) and Government Circulars. The following documents will be reviewed to set the planning policy context within the ES:

- PPS1: Delivering Sustainable Development.
- PPS9 - Biodiversity and Geological Conservation.
- PPG13 – Transport.
- PPG15 – Planning and the Historic Environment.
- PPG16 – Archaeology and Planning.
- PPS17 - Sport and Recreation.
- PPS23 - Planning and Pollution Control.
- PPG24 – Planning & Noise.
- PPS25 – Development and Flood Risk.

- 3.4 Relevant emerging policy statements will be reviewed.

- 3.5 **The Development Plan** – The following documents constitute the development plan:

- Regional Planning Guidance for East Anglia to 2016 (November 2002).
- The Norfolk County Structure Plan (1999).
- The City of Norwich Replacement Local Plan (Adopted November 2004).

- The South Norfolk Local Plan (Adopted 2003).

3.6 In addition, the following emerging documents will be reviewed:

- The draft regional spatial strategy (RSS) published in December 2004 and the Panel Report into its Examination in Public.
- The emerging City of Norwich Local Development Framework.
- The emerging South Norfolk Council Local Development Framework.
- The NRP development brief

Air Quality

3.7 The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (AQS) was published in January 2000. It supersedes the earlier National Air Quality Strategy (NAQS) published in March 1997, and provides a revised framework for reducing air pollution at national and local levels from a wide range of emission sources.

3.8 Liaison will take place with the Council's Environmental Health Officers to agree the approach to the assessment. Existing baseline data will be gathered and potential sources of air quality impairment to the site will be identified.

3.9 This information will provide existing background data and projected air quality data enabling an assessment to be carried out. This will focus on traffic-generated emissions and dust during construction and traffic generated emissions during operation. The assessment will be structured as follows:

- Establishment of baseline conditions.
- Assessment of potential development impacts during both construction and operation.
- Identification of any mitigation or abatement measures should they be necessary.

Recreation and Sport

3.10 This section of the ES will consider the effects of the proposed scheme on formal and informal recreational use in and around the site. Whilst there are no established methodologies for the assessment of effects on recreation and sport, the following activities will be undertaken:

- Relevant policy, government legislation and guidance will be examined.
- Consultation with relevant Local Authority officers will take place.
- Consultation with interested groups will take place.

- A site survey and review of the recreational elements of the site will take place.
- 3.11 An estimation of informal and formal recreational use and the predicted effects of the proposal on this recreational use, during construction and operation, will be provided. Any potential impact on the playing fields or informal recreational uses will be identified.
- 3.12 Where necessary, mitigation will be proposed.

Cultural Heritage

- 3.13 In considering the potential effects of construction and operation on cultural heritage features it is important to define the known and potential nature of features that may be involved. This requires consideration of a number of factors:
- Development can affect features of cultural heritage interest not only through direct impacts (e.g. land take) but also indirect impacts, such as the setting of Scheduled Ancient Monuments;
 - Desk-based assessment involves a review of current information only and there may be further features within the site that are not yet known. The potential for this may be assessed from the conditions of the site, features within the wider area and a history of land use within the site;
 - Not all cultural heritage features are considered of equal 'importance' and the significance of the features should be identified. This is done through reference to legislation, policy guidance and professional judgement.
- 3.14 A mainly desk based assessment of the site will be carried out. This will involve the following:
- Site assessment by an archaeological specialist;
 - For the purposes of establishing the pattern of historic land use, a map regression exercise will be undertaken, including those of 20th Century date;
 - Inspection of the Sites and Monuments Records;
 - Consultation with the relevant archaeological regulator, Norfolk Landscape Archaeology.
- 3.15 The findings of this will inform the assessment and any potential mitigation strategy, if required.

Ecology

- 3.16 The ecological and nature conservation assessment will consider the potential implications from the differing stages of the project to habitats and species of conservation concern including any designated sites. This will include legally protected habitats and species, with consideration also given to those covered by national and local biodiversity action plans as appropriate. The assessment will relate information from biological records and specific habitat and species survey work along the route corridor.
- 3.17 **Habitat survey** - A habitat survey of the route corridor will be provided. Main habitat types will be plotted and species present will be recorded as target notes.
- 3.18 **Breeding birds** - A breeding bird survey comprising morning and evening period starting in mid April through to July will be provided five separate occasions following the breeding bird survey method.
- 3.19 **Herpetofauna** - There are recent records for smooth newt but none for the protected great crested newt. There are records for grass snake and on this basis a reptile survey of the UEA Fen and the Lusty Hills depression would be provided. For the avoidance of doubt water courses/bodies within 500m of the route for great crested newt would be checked. The survey would need to be undertaken in May. It would include a day time survey of the water bodies for the presence of eggs and fish. For those suitable water bodies this would be followed by night time torch survey, egg strips and bottle trapping as appropriate.
- 3.20 **Water vole** - Records for water vole in the wider area suggest a need to examine the dykes within the UEA Fen for this species. This would include examining for field signs of water vole along the banks of dykes including burrows, latrines, food piles, foot prints and runs. The survey would examine dykes with the UEA fen within 20 m either side of the route corridor.
- 3.21 **Bats** – The results of a bat activity survey over two separate nights will be provided. This would assess trees within the survey corridor for potential as bat roosts and aim to identify main species through flight characteristics, echolocation and recordings.
- 3.22 **Otter** - Signs of otter in suitable locations along the river Yare and the adjacent dykes would be noted taking account of the disturbed area of the route corridor associated with informal recreation.
- 3.23 **Invertebrates** - The scope for invertebrate surveys can be wide ranging and we would focus on the possibility that one of the ditches may be affected by the scheme. A visit to gain an overall feel for the likely invertebrate interest of the site to include sampling for aquatic and bank side invertebrates would be undertaken, and also sweep net survey of the adjacent

marshy area. The first survey will provide the basis on which species require more survey effort to target with follow up visits.

- 3.24 **Survey findings** - The survey findings will assess the existing conservation status of the route corridor and consider the implications resulting from the construction, commissioning and subsequent landscape management including opportunities for enhancement.

Landscape and Visual Impact

- 3.25 The Landscape and Visual Impact Assessment (LVIA) will focus on the potential effects on the existing landscape character and quality and views from visual receptors. Key issues will include the potential effects on visual receptors which may include:

- any local residents;
- users of the highway network;
- users of footpaths and cycleways.

- 3.26 The methodology for the LVIA will be based on 'The Guidelines for Landscape and Visual Impact Assessment, Second Edition' (The Landscape Institute and the Institute of Environmental Management and Assessment 2002) which may be applied to all types of landscape.

- 3.27 The Landscape Institute advises the separate assessment of landscape and visual effects as two different but closely related subjects, i.e. 'Landscape Assessment' and 'Visual Assessment'. Fundamental to the LVIA as a whole is the evaluation and assessment of landscape and visual sensitivity against the likely degree of change or magnitude posed by the proposed development. It is the consideration of these two criteria together that allows a judgement to be made as to the nature and level of the landscape or visual effect and a determination of the significance of these effects in the context of the existing landscape resource. In addition the effects of development (as defined by the EIA Regulations) may be direct or indirect, adverse or beneficial, temporary or permanent, and may vary in their duration. Development effects may also be cumulative, in that they may result in incremental change caused by other development in the past, present and in the future where reasonably foreseen.

- 3.28 The LVIA will consider potential effects during construction and operation, which may include removal / protection of existing vegetation, temporary site office/parking areas, signage, lighting, new services and construction activity.

- 3.29 Mitigation is widely considered as an integral part of the overall design and assessment process to avoid adverse effects. The project design team may for example seek in the first instance, to avoid potential impacts, to reduce those that remain. The landscape architect will work in conjunction with the consulting engineers for the project in relation to any specific mitigation or design solutions, which may have been built into the proposed development to avoid or reduce potential landscape and visual effects.
- 3.30 The potential routes of the bus link cross through a varied valley landscape, with a range of habitats, shade and visual enclosure. Views are affected by the varying topography and enclosure created by woodland, hedgerow and individual trees.
- 3.31 The existing route between the University and the NRP provides access across the valley for pedestrians and cyclists, plus limited use for on-site vehicles via IFR. This currently provides a relatively quiet route for pedestrians and cyclists, and is a busy route for people crossing between the University and the JIC/NUH.
- 3.32 The walk alongside the river is well used recreationally, although there is perceived traffic noise from Colney Lane and Earlham Road/Watton Road.
- 3.33 In summary, it is considered that the main issues in the assessment will be:
- Visual impact of the movement of buses through the landscape;
 - Physical impact of new hard surfacing, lighting and possible embankments, and cuttings, and the bridge across the River Yare;
 - Physical removal of landscape features, such as trees and hedgerows.

Contamination

- 3.34 It would appear that there has been no past industrial use of the land along the route that may give rise to contamination. However, a desk study will need to be carried out to establish the potential for any previous contamination. There is a potential for contaminants to be released during the construction stages and the EIA will comment on the construction method to be used and specific measures that may be taken to minimise the release of contaminants.
- 3.35 An assessment will also be included of the risk of contamination and mitigation measures to overcome this when the bus link becomes operational.

Noise

- 3.36 It is considered that the restriction of the link to bus use only, and the sparsity of development along the proposed route will mean that the impact of noise will be limited.

3.37 A methodology for noise assessment will therefore be agreed with Environmental Health Officers of the respective councils considering:

- Construction Noise Assessment - The expected significance of construction noise at locations of interest would be assessed and appropriate criteria recommended, based on the guidance in BS 5228 Part1:1997 Noise Control on Construction and Open Sites. In addition to considering the noise impact arising from the construction process on the site itself, the assessment would consider the effect of any additional transportation movements that may arise from the movement of materials to and from the site.
- Operational Noise Assessment - It is anticipated that the operational noise assessment will focus on any additional noise associated with traffic generated by the bus link compared to existing ambient levels. This will be informed by data from the traffic impact assessment.

Socio-economic

3.38 There is no established EIA methodology for the assessment of socio-economic effects. The proposed development has potential to make a positive impact upon employment during construction. When completed it will improve public transport and accessibility in the locality. It will enhance the future development of UEA and the NRP institutions including NNUH, by providing a more sustainable public transport link.

3.39 The assessment will identify the benefits to UEA, the NRP institutions and the surrounding area, and to potential users of the new bus link

Transportation

3.40 The EIA will consider the impacts from construction and operational traffic arising from the scheme on the highway network and sensitive receptors, with specific reference to the UEA travel plan. Traffic generated during the construction period, which could cause environmental effects, would include:

- Movement of materials to and from the site;
- Vehicles for construction workers and contractors; and
- Any other plant and equipment required.

3.41 Details will be required of the construction programme and the volumes of traffic likely during these operations in order to assess the worst case scenario during the construction period.

This would be the period when the largest volumes of traffic (HGVs, site staff vehicles, materials deliveries etc.) are required to travel to and from the site concurrently.

- 3.42 For both the construction and operational stages of the project, sensitive areas will be identified on the road links serving the proposed development.
- 3.43 Changes in traffic flows will have potential consequences for the pedestrians, cyclists and other road users, which will be used to gain access to the site by construction vehicles, particularly as a result of increases in delays, severance, and the risk of accidents.
- 3.44 The methodology used in the assessment is based on a comparison between predicted traffic flows on potentially affected roads with and without construction and operationally generated traffic. Criteria are then applied to establish whether significant environmental effects are likely. These criteria take into account:
- The sensitivity of the receptors; and
 - Any changes in the composition of traffic, specifically if more heavy goods vehicles (HGVs) are anticipated. (HGVs are defined as goods vehicles exceeding 7.5 tonnes gross vehicle weight.)
- 3.45 This methodology is based on guidance given in the document 'Guidelines for the Environmental Assessment of Road Traffic', published by the Institute of Environmental Management and Assessment (IEMA), formerly the Institute of Environmental Assessment. The methodology includes in the assessment:
- Highway links where traffic flows will increase by more than 30% (or the number of large goods vehicles will increase by more than 30%); and
 - Any specifically sensitive areas where traffic flows have increased by 10% or more.
- 3.46 The transport impact of the proposals will be subject to an assessment comprising an initial transport statement. This will consider the likely level of traffic generated by the proposal and its impact on the wider road network. Road junctions that are likely to be addressed in the statement are:
- The Colney Lane roundabout situated to the south of the NNUH access;
 - Bluebell Road/University Drive;
 - Fiveways roundabout, Earlham Road;
 - Earlham Road/University Drive;
 - Watton Road/Colney Lane;

- The impact of 2-way bus only access on University Drive and its impact on the relevant road junctions;
- Any new junction with Colney Lane.

Water Quality, Hydrology and Flood Risk

- 3.47 The need to assess site hydrology and water quality is recognised. During construction there is the potential for changes in groundwater and surface water quality as a result of the release of contaminants due to the normal nature of construction site operations and the potential for residual contamination. The release of contaminants could result in deterioration in water quality, which could have adverse consequences for:
- Targets relating to ground and surface water quality;
 - Public health.
 - Wildlife
- 3.48 The proposed methods of construction will be considered, the risks of pollution of watercourses or groundwater will be assessed, and practical mitigation measures will be identified to avoid adverse impacts. This assessment will be used to inform the design brief for the consultant team appointed to a project to replace the existing bridge with a new structure(s)
- 3.49 Other water quality issues such as disposal of on-site generated sewage and run-off will also be covered in this section. The LPA's, the Environment Agency (EA) and relevant utility company will be consulted on the proposals to ensure all issues are adequately covered.
- 3.50 Parts of the development lie within an identified flood plain. A separate Flood Risk Assessment (FRA) will be prepared in accordance with Planning Policy Statement 25: 'Development and Flood Risk' (PPS25) and submitted in support of the planning application. The summary findings of the FRA will be incorporated into the ES.
- 3.51 The EA is a statutory consultee in the planning process and will therefore be consulted over the proposals. In addition to the need for an FRA, works in, over, under or adjacent to main river require a flood defence consent under the Water Resources Act, 1991.

4 SUMMARY OF THE PROPOSED SCOPE OF THE EIA

4.1 In summary the EIA will consider the following matters:

- Background to the Scheme.
- The Strategic Importance of the UEA.
- The Bus Link Concept and the Need for the Development.
- Description of consultation carried out in relation to the scheme and the EIA.
- Description of the site location and the wider site context.
- Description of the Development.
- Outline of alternatives considered.
- Planning Policy Context.
- Air Quality.
- Recreation and Sport.
- Cultural Heritage.
- Ecology.
- Landscape and Visual Impact.
- Contamination.
- Noise.
- Socio-economic.
- Transportation.
- Water Quality, Hydrology and Flood Risk.
- Summary of any Cumulative Effects.
- Summary of Significant Effects.
- Table of Mitigation Measures.
- A Non-Technical Summary covering the above topics.

Appendix A

Scoping as part of the EIA process

EIA AS A PROCESS

EIA is a process by which information about the environmental effects of a project is collected, evaluated and presented in a form that provides a basis for consultation and enables decision-makers to take account of these effects when determining whether or not a project should proceed. The process also includes environmental monitoring and other work that is carried out following any decision to allow the development to proceed (e.g. monitoring carried out during the construction phase).

The EIA process has a number of key characteristics:

- it is systematic, comprising a sequence of tasks defined both by regulation and by practice;
- it is analytical, requiring the application of specialist skills from the environmental sciences;
- it is impartial, its aim being to inform the decision-maker rather than to promote the project;
- it is consultative, with provision being made for obtaining feedback from interested parties including local authorities and statutory agencies;
- it is interactive, allowing opportunities for environmental concerns to be addressed during the planning, design and implementation of a project.

APPROACH

A key purpose of the EIA process is to identify opportunities to minimise the adverse environmental effects of a new development and to maximise its benefits. This should involve considering the need for the development and alternative ways of meeting this need. For the development option that is taken forward after this review of need and alternatives, the EIA process involves incorporating into the design of the scheme appropriate opportunities to:

- reduce potential adverse effects (i.e. to mitigate potential effects so that they are reduced or eliminated); and
- increase the environmental benefits through environmental enhancements, some of which might compensate, at least in part, for adverse effects.

The EIA must assess only the **likely significant environmental effects** and evaluate these against accepted and clearly defined criteria. The findings of this assessment are presented in an 'environmental statement' (ES). The scoping report is an essential precursor to the detailed assessment as it helps to define, inter alia, what are likely to be the significant effects of the development.

Box 1 summarises the key tasks that should be undertaken as part of the EIA process (these are based on the EIA Regulations, Government guidance and good practice).

Box 1 Key Steps in the EIA Process

- defining the project;
- considering the need for the project and alternatives for meeting this need;
- deciding on the potentially significant effects that need to be assessed and how this assessment will be carried out (i.e. scoping);
- consultation over the scope of the EIA and refining the scope in response to the comments that are received;
- describing the baseline environment that is relevant to the potentially significant effects (i.e. that existing before commencement of the project and assumed to develop in its absence) and establishing the sensitivity of identified receptors/resources within that environment;
- identifying measures to mitigate significant effects and liaising with the project design team to incorporate these (where possible) into the proposals;
- ongoing consultation with statutory consultees and other interested parties;
- assessing the magnitude of predicted environmental effects;
- evaluating the significance of the predicted effects;
- collating the findings in an ES and summarising the findings in a non-technical summary;
- ongoing environmental monitoring, assessment and other work, as required following the production of the ES.

THE SCOPE OF AN ES

Policy context

In preparing the ES, a review will be undertaken of relevant national planning guidance, and regional, county and local planning policies. This will involve identifying relevant guidance and policies and reviewing the findings of the EIA against them in order to determine whether the proposed development will conflict or conform with the policy. The review will assess the project against policies/criteria relating to sustainability.

Technical scope

Schedule 4 of the EIA Regulations specify that the EIA should address “...*direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects...*”. Schedule 4 also specifies that the ES should describe those “aspects of the environment likely to be significantly affected by the development, including, in particular – population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape; and the inter-relationship between the above factors.”

Certain criteria can be used to evaluate the predicted effects of a proposed development:

- The type of effect, (i.e. whether it is positive, negative or unknown);
- The probability of the effect occurring based on the scale of certain, likely or unlikely. If there is uncertainty this would be noted;
- The policy importance (or sensitivity) for the evaluation, (i.e. international, national, county, district or local/parish importance). An effect can have a policy importance (or sensitivity) at more than one level;
- The magnitude is quantified using a simple scale of high, medium, low and none. In some cases it is not possible to quantify the magnitude of impact and therefore 'not quantified' is used in these instances.
- Professional judgement is used to combine these criteria to an assessment of significance either as major, minor or not significant.

Temporal scope

Stages of the development - The temporal scope of the EIA must cover the period from commencement of remediation work through construction to the operation of the site when it is occupied. In undertaking the EIA, it is helpful to differentiate the key stages in the development process, reflecting the fact that the activities and their effects will differ during these stages.

Construction activities are all short term, whilst operational activities are long term.

Treatment of land use change in relation to stages of the development

A development may involve a permanent change of use over some parts of the site. Consideration will need to be given to any changes in, or intensification of, land uses arising from the development works.

Many developments involve temporary land use changes, for example, where areas are used during construction for the storage of materials but are then returned to their original land use. Both temporary (construction) and permanent (operation) effects will be considered as part of the EIA process.

Baseline conditions

The EIA must compare the predicted changes that would result from the proposed development with the 'baseline conditions', that is the conditions that would exist if the development were not to proceed. When effects are predicted to occur in the future (which will certainly apply to operational effects), it is necessary to consider whether, in the absence of the development, the baseline conditions might have changed. If changes are expected to occur, there may be a need to undertake predictive assessment work in order to define what the new baseline will be.

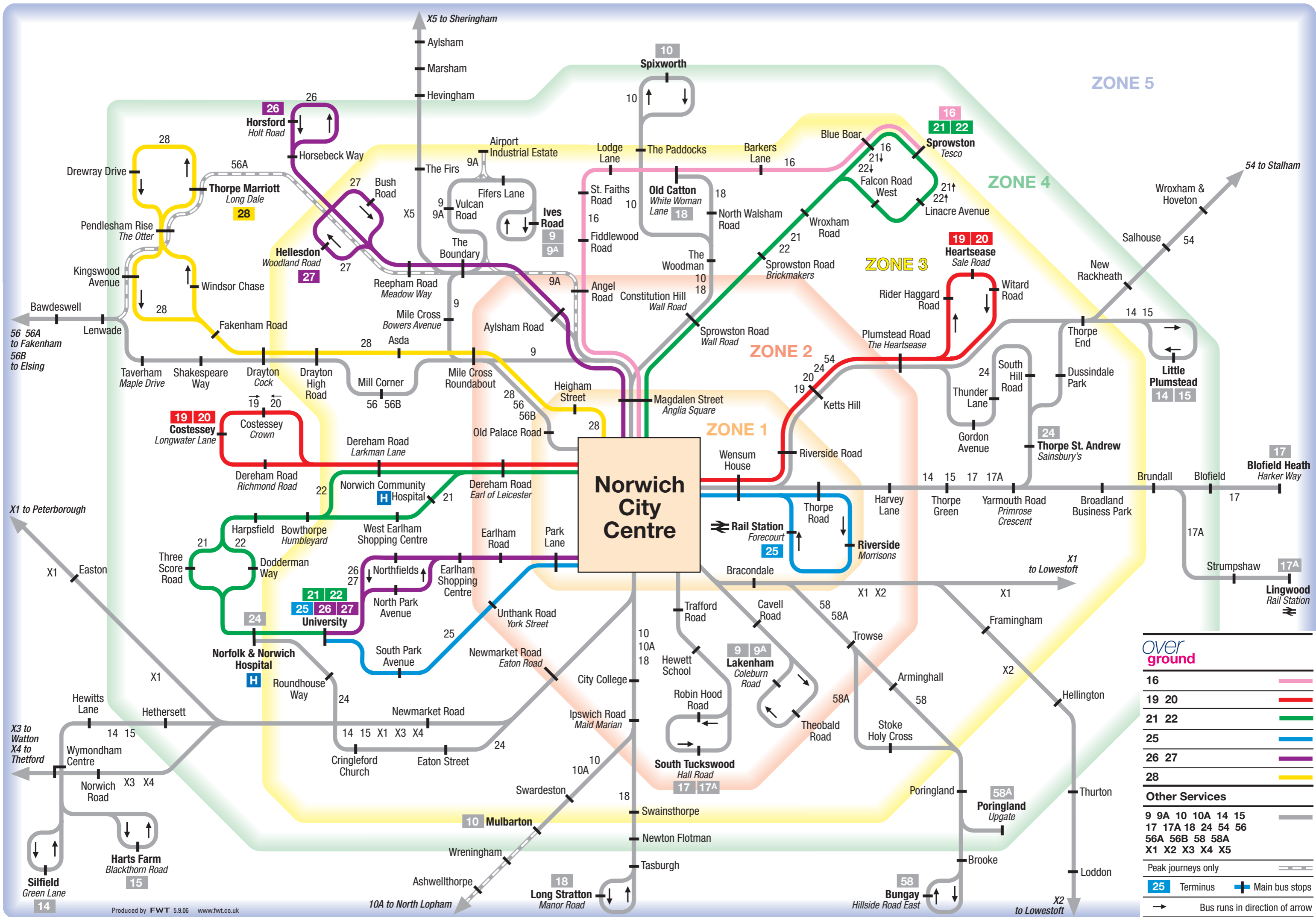
Spatial scope

In its broadest sense, the spatial scope of the EIA is the area over which changes to the environment would occur as a consequence of the development. In practice, the EIA focuses on those areas where these effects are likely to be significant.

The spatial scope will vary between both effects and specialist areas of study, and is defined as part of the scoping study.

Appendix B

Plan 1 - Bus Regime Relating to Norwich City Centre, the UEA and NNUH



over ground

16	—
19 20	—
21 22	—
25	—
26 27	—
28	—

Other Services

9 9A 10 10A 14 15	—
17 17A 18 24 54 56	—
56A 56B 58 58A	—
X1 X2 X3 X4 X5	—

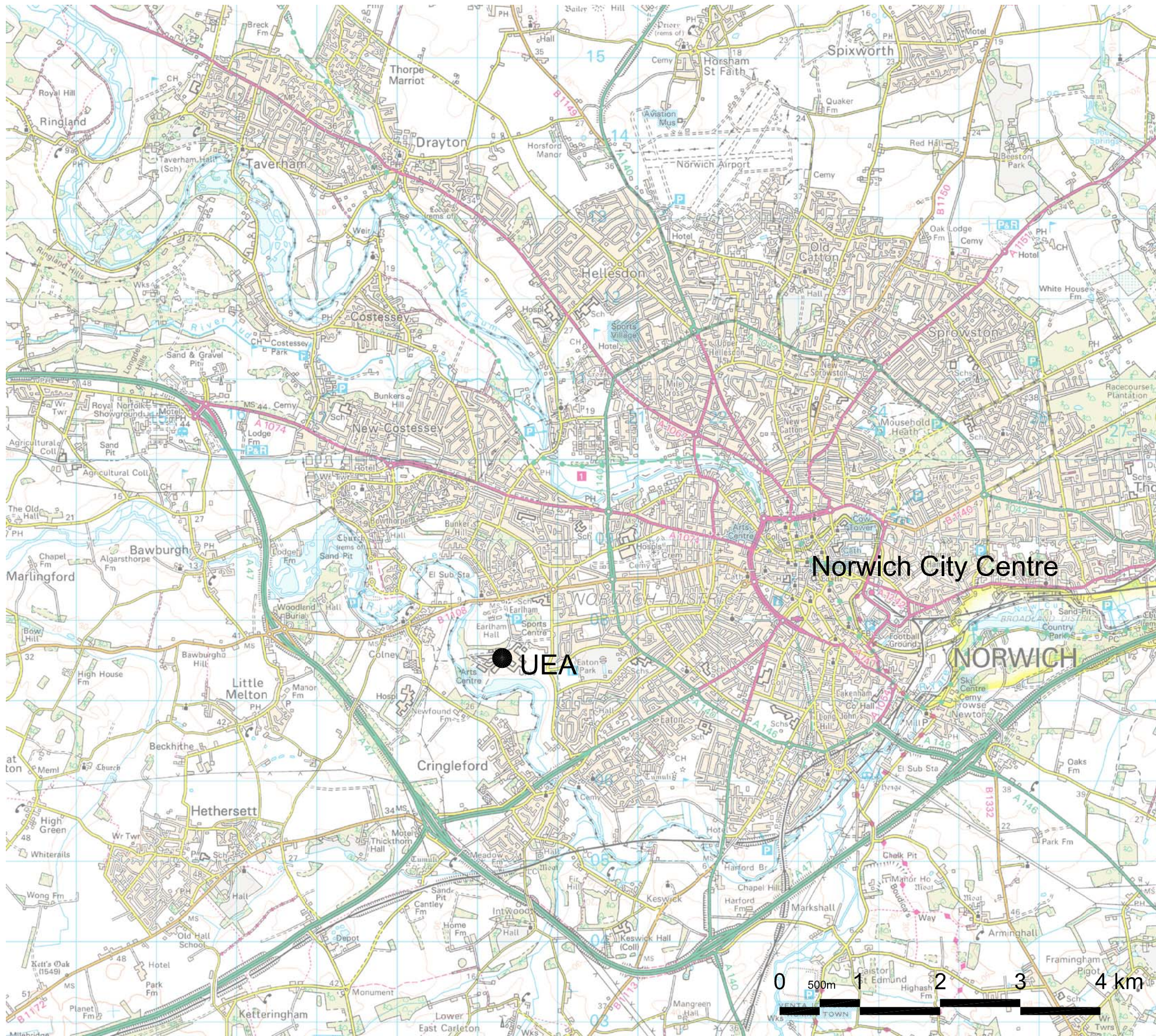
Peak journeys only — — — — —

25 Terminus **+** Main bus stops

→ Bus runs in direction of arrow

Appendix B

Plan 2: Location of UEA in Relation to Norwich City Centre



UEA/Colney Lane Bus Link

Site Location

Drawing no. S442300010-02
Revision

Date Dec 2006
Scale 1:50,000 @ A3

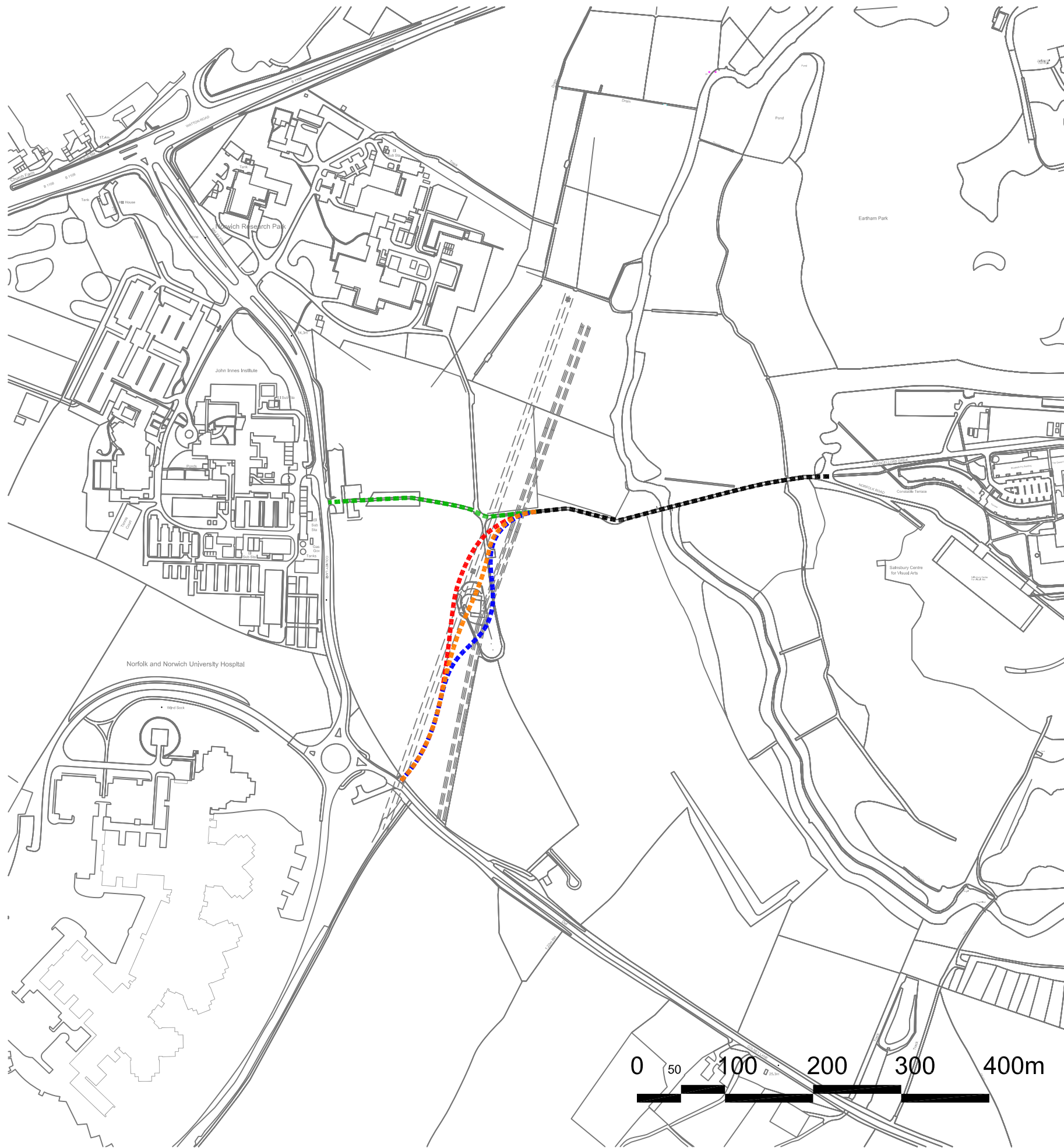
Client UEA
Drawn by LBL
Checked by

1 Ferry Road
Norwich
NR1 1SW
01603 229400
www.bidwells.co.uk

BIDWELLS

Appendix B

Plan 3: Bus Link Options Plan



- - - - - Option 1: Route passes west of existing pylon
- - - - - Option 2: Route passes east of existing pylon and through pit area (to be filled)
- - - - - Option 3: Routes passes east of both pylon and pit area
- - - - - Option 4: Route follows existing footway/cycleway
- - - - - Route follows existing road for all options across causeway and river

UEA/Colney Lane Bus Link

Bus Link Options