



**Defence
Infrastructure
Organisation**

Future Defence Storage and Redistribution Programme,
Redevelopment of MOD Bicester

Graven Hill: Travel Plan

BIC/OPA/DOC/13

September 2011

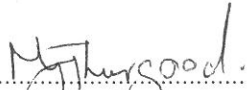
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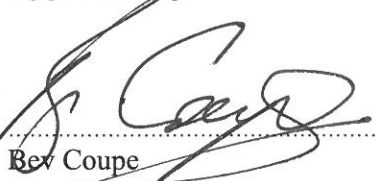
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Defence Infrastructure Organisation

Future Defence Storage and Distribution Programme - Redevelopment of MOD Bicester

Graven Hill: Travel Plan
(BIC/OPA/DOC/13)

September 2011

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UK Limited



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1. Introduction

1.1 Background

- 1.1.1 AMEC Environment and Infrastructure UK Ltd (AMEC E&I)¹ has been commissioned by Defence Infrastructure Organisation (DIO)² to produce masterplans and technical assessments to support an Outline Planning Application (OPA) for the re-development of Graven Hill and C Site at MOD Bicester, in Oxfordshire. The location of each site is shown in Figure 1.1.
- 1.1.2 The Ministry of Defence currently occupies some 600ha of space around Graven Hill and Arncott Hill in Bicester. The opportunity provided by the MOD Bicester Estate became the focus of the Treasury (HMT) Operational Efficiency Programme (OEP) in late 2008, which charged MOD with looking at its storage and distribution function, run by Defence Logistics Commodities & Services (LCS, formerly the Defence Storage and Distribution Agency (LCS)), along with the estate it occupies to determine whether there are any opportunities to release funds back to HMT. The OEP has explored a range of options for the future of LCS and the associated estate implications, including the strategic location and opportunities provided at Bicester as a core site.
- 1.1.3 The Graven Hill Site and C Site have been identified as being viable for redevelopment for storage intensification, mixed use development, employment and civilian housing. The Graven Hill site has been identified for disposal but C Site would still remain under MOD control/ownership and be solely used as part of the LCS operations.
- 1.1.4 Discussion with Oxfordshire County Council (OCC) has identified the requirement for separate Travel Plans (TP) for Graven Hill and for C Site. These have been produced alongside a single combined Transport Assessment (TA) for both developments, from which all technical assumptions for the TPs are taken.
- 1.1.5 This TP covers the proposed development at Graven Hill and a separate TP is submitted for the proposed development at C Site.
- 1.1.6 Following discussions with OCC, the requirement for a TP for the proposed Graven Hill development has been identified and this has been produced alongside a single

¹ Following its acquisition by AMEC, Entec UK Ltd was integrated into AMEC Environment and Infrastructure in July 2011, all references are now to AMEC E&I.

² The Defence Infrastructure Organisation was formed on 01 April 2011 when the former Defence Estates was brought together with other property and infrastructure functions in the MOD to form a single organisation.



combined Transport Assessment (TA), from which all technical assumptions are taken. A separate TP will be submitted for C Site.

- 1.1.7 This TP will provide a framework for all elements of the site, including the proposed residential, commercial and educational development, therefore offering a coordinated response to the numerous transport requirements identified.

1.2 Travel Plan Policy

National Policy

- 1.2.1 Research, both in the United Kingdom (UK) and internationally, has evaluated the impact of workplace TPs on commuter travel patterns and considered the likely success factors for reducing single occupancy vehicles (SOV). In 2002, a DfT study examined 20 TPs in the UK and found, on average, the plans produced an 18% reduction in the proportion of SOV vehicle trips to participants' sites (DfT 2002).
- 1.2.2 These findings were further confirmed by DfT's 2004 *'Smarter Choices'* report, which highlighted the potential impacts of a range of 'smart' measures. Reported benefits of travel planning included helping "to reduce congestion, relieving parking pressure, making sites more accessible, informing staff travel choice and aiding employee retention" (DfT, 2004).
- 1.2.3 In November 2008, a UK *'National Standard for Workplace Travel Plans (PAS 500)'* was published. This document aims to provide guidance for a specific standard for TPs to further highlight their potential in influencing travel behaviour in workplaces.
- 1.2.4 In April 2009, DfT published a revised guidance document *'Good Practice Guidelines: Delivering Travel Plans through the Planning Process'*, which provides detailed best practice for the implementation of TPs sought through development planning.
- 1.2.5 Residential TPs can provide a key mechanism for ensuring that sustainable access is in place from the earliest stages of occupation. They are also important in clarifying how the TP will be implemented during the period of construction and following completion of the development. The benefits of residential TPs are highlighted within the DfT document, *'Making Residential Travel Plans Work: Guidelines for New Development, 2005'* and the DfT summary document, *'Making Residential Travel Plans Work, August 2007'*.

OCC Policy and Guidance

- 1.2.6 OCC guidance *'What type of Travel Plan is required?'* is the policy guidance which specifies the overall approach required for TPs within Oxfordshire. This has been consulted whilst developing this TP, along with regular discussions with the Travel Choices Transport Planner at OCC.



1.3 Approach to the Graven Hill Travel Plan Development

- 1.3.1 This document has been prepared using information provided by the applicant and makes reference to current national guidance for TPs, such as '*National Standard for Workplace Travel Plans*' (PAS 500), Department for Transport (DfT) '*Good Practice Guidelines: Delivering Travel Plans through the Planning Process*', OCC Guidance '*What type of Travel Plan is required?*' and guidance policies produced by the Highways Agency (HA). A draft of the document was submitted to the Travel Choices Transport Planner in Highways and Transport, OCC in June 2011 who has provided comments on it. This is an updated version of that document which has been revised to incorporate those comments.
- 1.3.2 This is an overarching TP for the Graven Hill site as a whole; therefore measures included may be applicable to all elements of the site, or specific to individual elements; namely residential, workplace or educational.
- 1.3.3 At Outline Planning Application stage, the specific purpose of this TP is to set out the applicant's commitment to encouraging sustainable travel behaviour by all people living, working or visiting the site and the measures which will, or may, be implemented to facilitate this aim.
- 1.3.4 At this stage, it is assumed that the occupancy levels for site will be in the region of 4,560 people within the residential element of the site (based on a 2.4 occupancy rate per dwelling) and 1,870 people employed on site.
- 1.3.5 This and subsequent TPs will be a process requiring monitoring and review, as the development proceeds through to construction, and occupation. The timescales on the monitoring and review programme will be agreed with OCC. Initial proposals are included within chapter 7 of this document as per discussions with OCC and from pre-identified guidance documents.
- 1.3.6 The primary ethos of this TP is to establish and facilitate an environment where users of the site choose sustainable travel modes over SOV.

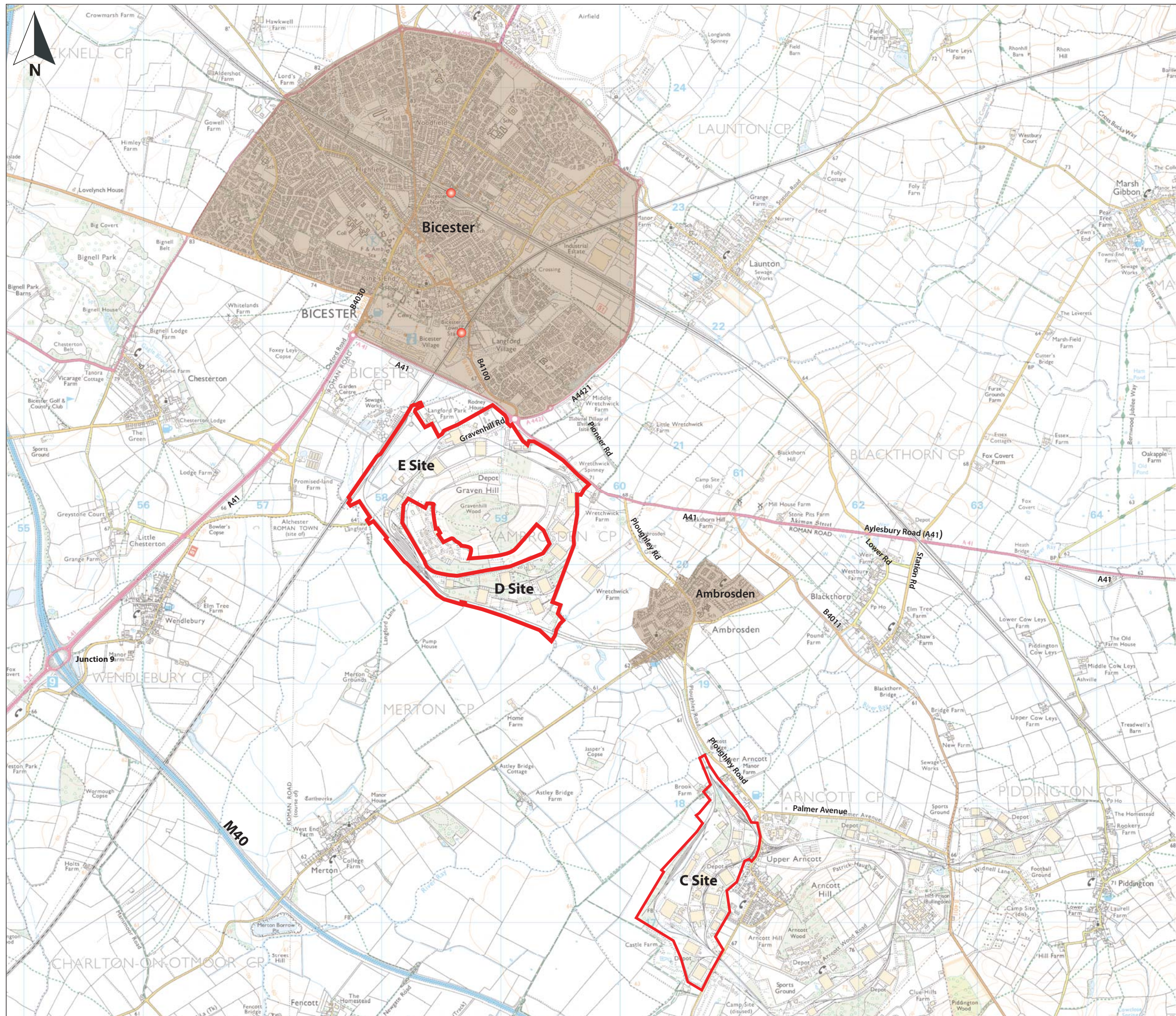
1.4 Structure of the Document

- 1.4.1 The TP is structured as follows:
- chapter 2 sets out the existing situation of the site;
 - chapter 3 established the development proposals;
 - chapter 4 identifies the predefined objectives and targets;
 - chapter 5 informs of the proposed management structure;
 - chapter 6 describes the committed and proposed measures associated with this TP;
 - chapter 7 sets out the proposed monitoring and review methodology;



- chapter 8 demonstrates the proposed Graven Hill Action Plan, incorporating the measures, which elements of the site they relate to and who is responsible in delivering them; and
- chapter 9 includes document references included within this TP.





Key

- Site boundaries
- Railway stations
- Built up area

0 m 1000 m
Scale @ A3



Redevelopment of MOD Bicester

Figure 1.1
Graven Hill & Arncott Hill
Site Locations

June 2011
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2. Existing Situation

2.1 Introduction

- 2.1.1 This section identifies the existing site and transport conditions, including a description of the existing land use and occupation.

2.2 Site Description

Location

- 2.2.1 The existing site plan is shown in Figure 2.1. The Graven Hill site is located on the south east edge of Bicester, Oxfordshire and is approximately 0.9 miles from Bicester town centre³. The site is within the Cherwell District Council (CDC) and OCC boundaries.
- 2.2.2 The key characteristics of the area are the existing military development, Bicester town and large swathes of rural farmland. In addition, there are small villages in the vicinity, including Ambrosden to the east.
- 2.2.3 E Site is located to the south-east of the main town of Bicester. It is bounded to the north east by the A41 Aylesbury Road, the railway line to the west, railway tracks and sidings to the south-west and Graven Hill to the east. The site includes the Bicester International Freight Terminal (BIFT) which is in the north of the site along the A41 and in total extends to c. 6ha.
- 2.2.4 Graven Hill currently comprises D and E Sites. E Site is c. 70.5ha in total and contains four main large warehouses. There are also several smaller offices, administration and industrial buildings scattered across the site. Vehicular access to the site is in the north east corner off the A41. A further access point (currently closed) is to the south off Langford Lane, which in turn leads out to join the A41 to the west. Rail access into the site is from the south near the sidings area. The main rail route forms the majority of the northern and western edges of the site. The northern part of the site is not developed and is still farmed with grazing livestock.
- 2.2.5 D Site is located to the south-east of Graven Hill. It is bounded to the north-east by the A41 Aylesbury Road. The southern and eastern boundaries of the site are formed by adjoining agricultural fields with a railway line within the site on both these edges.
- 2.2.6 D Site is c. 57ha in total and contains eight large warehouses. There are also a number of smaller buildings centrally in the form of a training building and fire station

³ Measured from the A41 roundabout entrance to E Site via London Road to the southern end of Sheep Street.



complex and five large hardstanding areas along the southern edge of the site. The main site access is currently via E Site for security reasons but there is a vehicular access off the A41 in the north of the site via Pioneer Road. Rail access into the site is from the south western corner with spurs servicing all of the large warehouses.

- 2.2.7 The remainder of the Graven Hill site (extending to c. 73ha) includes pasture and woodland. St David's Barracks, which lies to the south of the hill, is to be retained for military use.

2.3 Highway Network

Strategic Road Network

- 2.3.1 The strategic road network (SRN) in the area comprises the M40 to the west of Bicester and the A43(T) at Junction 10, some five miles to the north of the town centre, and accessed via the B4100. Junction 9 is the main point of access to/from Bicester via the A41, but is also the key route into north Oxford via the A34. Both junctions suffer from peak hour congestion, more acutely at Junction 9 because of the A34 route to Oxford. The Highways Agency has recently completed improvements at the junction, namely:

- the M40 Junction 9 southbound exit slip-road has been increased from two lanes to three lanes;
- the roundabout between the A41 exit and entry points has been modified to provide three lanes;
- the A34 southbound has been widened for approximately 600m and increased from two to three lanes; and
- new traffic signals with extra low voltage (ELV) LED lights have been installed as well as three CCTV cameras which will be accessible by both the Highways Agency and OCC1, providing improved operation of the A34/M40 roundabout and response times to incidents on the junction.

- 2.3.2 The Highways Agency has identified a Phase Two improvement scheme, however, this will only be completed when funding becomes available, most likely through developer contributions. The planned improvements include:

- widening the A34 northbound carriageway approach from two lanes to three lanes, then to four lanes at the roundabout;
- introduction of traffic signals on the A34 northbound approach;
- widening the A41 northbound exit from two lanes to three lanes; and
- extension of the A41 southbound three lane approach flare.



Local Road Network

- 2.3.3 As identified in Figure 1.1, the main highway network feeding the sites is the A41 running north-south to Junction 9 of the M40 and A34, and A41 running east-west towards Aylesbury and north London.
- 2.3.4 Between the M40 and B4030 the A41 is a dual carriageway county road linking the M40 partially signalised roundabout junction with the B4030 roundabout and there is a compact grade separation junction at Chesterton and Wendlebury, some 1,100m south of the B4030 roundabout. The A41/B4030 roundabout is a four arm junction with an Esso petrol filling station with service area on the west approach. On the east side of the A41, 500m south of the B4030 roundabout, is a retail park with, currently, a left in, left out access off the southbound carriageway of the A41.
- 2.3.5 On the B4030, 150m to north of the Esso roundabout is another roundabout providing access to a Tesco superstore and Bicester retail village, and there is pelican crossing immediately north of the A4030 (Tesco) roundabout. 100m north of this roundabout is a three arm mini roundabout with the B4030 link westwards to Whitney. The B4030 is de-restricted just south of the mini roundabout and 40mph to the north.
- 2.3.6 The A41 east of the B4030 roundabout is a single carriageway county road approximately 7.3m wide with a number of junctions along its length, which provide access to the MOD sites south of the A41.
- **A41/B4100/A4421 junction** - a five arm roundabout with 70m total inscribed circle diameter (ICD) including circulating carriageway. The A4421 runs around the edge of Bicester, providing access to the Bicester Industrial Estate, linking up with the A4095 at the north of the town. The B4100 London Road provides a route into Bicester town centre and access to Bicester Town Rail Station. The site has direct access onto this junction from Graven Hill Road.
 - **A41/Pioneer Road junction** - a priority junction with a ghost island right turn lane from the A41. This right turn has a capacity for around 15 cars. Pioneer Road approach has two short lanes on the approach to the give way line. Visibility in both directions is to standard. Both the A41 and Pioneer Road are subject to 60mph speed limits on the approach to the junction. The junction provides access to MOD D Site where the access road has restricted entry/exit.
 - **A41/Ploughley Road junction** - a priority junction with a ghost island right turn lane from the A41. This right turn has a capacity for around 15 cars. The Ploughley Road arm has two short lanes on the approach to the give way line. Visibility in both directions is to standard. Both the A41 and Ploughley Road are subject to 60mph speed limits on the approach to the junction. Ploughley Road routes through the village of Ambrosden and there is some sensitivity of the routing of MOD Arncott traffic, particularly HGVs, through the village.
 - **A41/B4011 Junction** - a priority junction B4011 to Tame with a ghost island right turn from the A41. The right turn lane has a capacity for up to eight cars. The B4011 arm flares on approach to the give way line providing a short slip for left turning vehicles towards Bicester, and is signed for all HGVs to MOD Bicester. Visibility in both directions is to standard. Both the A41 and B4011 are subject to



60mph speed limits on approach to the junction, enforced by a speed camera east of the junction for westbound vehicles.

- **A41/Lower Road Junction and A41 Station Road** - east of the B4011 there are two further junctions to the south off the A41 towards Piddington, both of which have HGV restrictions. The A41 along this section of road has a 50mph restriction and they are simple junctions with no right turn lanes. Along this section of A41 there are also two junctions to the north towards Launton and Marsh Gibbon. Visibility in both directions is to standard. There is a speed camera near the junction to Launton, which enforces the speed limit on the A41 for westbound vehicles.

- 2.3.7 The villages of Lower and Upper Arncott have a mix of vertical and horizontal traffic calming in the form of speed cushions and chicanes. HGV traffic from the existing MOD sites is advised (through signing) to use Palmer Avenue to minimise the impact on the village of Lower Arncott and Ambrosden. Palmer Avenue is subject to a 60mph speed limit and is accessed from the West off Ploughley Road via a mini three arm roundabouts and from the east off the B4011 via a priority T junction.

Parking Facilities

- 2.3.8 There are numerous existing car parking facilities within the vicinity of the site, with the majority within Bicester. The parking provided at the nearby supermarket is currently free, as is the facilities at Bicester Village. Parking within the town centre is approximately £2.00 per hour.

2.4 Pedestrian and Cycling Facilities

Pedestrian Facilities

- 2.4.1 As an existing military site, there is limited access by the public and there are no Public Rights of Way (PRoW), through the site. The majority of the permeability is provided by the existing highway network. There are a series of PRoWs surrounding the site for access through and around what is predominately farmland. Within the site however, there are extensive routes which may be retained as the site is re-developed.
- 2.4.2 An existing pedestrian underpass provides a direct crossing point under the A41 to the B4100 and Bicester town centre. The underpass is accessed from the north-west of the Graven Hill Site and leads to a footpath and access road to four properties off the B4100. Whilst the condition of the underpass is good and it is wide enough to accommodate pedestrians and cyclists, the appearance and perceived safety of the route will need to be improved.
- 2.4.3 There are pedestrian crossing facilities in the form of dropped kerbs at the five arm roundabout junction between the A41 Aylesbury Road and the A4421 Seelschild/Neunkirchen Way, and the B4100 London Road. However, given the speed and volume of traffic along the A41, this is not an ideal pedestrian environment in its existing form.



- 2.4.4 There are good pedestrian links on the routes off the roundabout. A shared use pedestrian/cycleway runs alongside the A4421 and partly along the B4100. A footpath extends along the southern section of the A41 east of the roundabout. The B4100 London Road provides an important pedestrian link from the Graven Hill site to both Bicester Town Railway Station and Bicester town centre.
- 2.4.5 Figure 2.2 illustrates the key walking routes in the locality of Graven Hill.

Cycling Facilities

- 2.4.6 The Graven Hill site benefits from the National Cycle Route 51 between Oxford and Milton Keynes. An 'on road' section of the route running from Oxford into Bicester crosses the M40, passing through Wendlebury, joining up with the A41 on a separate cycle lane south of Bicester. A new cycle route is proposed along the A41 running south east from the junction with the B4030 up to the railway line.
- 2.4.7 There are a number of links through the centre of Bicester which form part of the cycle route, including a path along the brook between Langford Village and Bicester. This can be accessed from the London Road, approximately 500m from the north of the Graven Hill site, and from here a link is possible along a combination of 'on road' and 'traffic free' cycle routes to North Bicester Railway Station.

2.5 Bus Services

- 2.5.1 The site is currently not directly served by a bus service. Bus services 23, 30, 94 and S5 (Oxford to Langford bus route via Bicester) passes by the site to the north along the A41 and the B4421 London Road.
- 2.5.2 The Graven Hill bus stop on the London road is located approximately one minute walk from the entrance to the site. In addition, the Langford Village, Ravencroft bus stop is located approximately five minutes walk from the Graven Hill site. A summary of the regular bus services which are applicable to the Graven Hill site is set out in Table 2.1.

Table 2.1 Existing Regular Bus Services

		Monday to Saturday Daytime	Evenings and Sundays	
S5	Oxford - Gosford - Bicester - Glory Farm - Langford	Every 60 mins	2 journeys on Sunday. Services until 0034 on weekdays (half hourly until 1959, then hourly)	Stagecoach
23	Bicester Town circular via Southwold, Caversfield and Bure Park	Every 60 mins	No service	Grayline

Source: Oxfordshire County Council. Journeys from Oxford stop at Langford Village, Ravencroft. Journeys to Oxford stop at Graven Hill, London Road



- 2.5.3 Figure 2.3 illustrates the existing bus services in Bicester shows the location of the bus stops in the vicinity of the site.

2.6 Rail Services

- 2.6.1 Bicester has two rail stations.

- Bicester Town Station is located approximately 1km to the north-west of the Graven Hill site, within comfortable walking distance (10-15 minutes journey time). The rail station is served by trains to Oxford. From Oxford, connections are available to a number of stations across the south of the country including; Swindon, Reading and London Paddington. Services between Bicester and Oxford currently operate at a frequency of one every 90 minutes every day, with a journey time of around 25 minutes. The Bicester to Oxford passenger rail line runs along the western edge of the site. The freight line serving the MOD Bicester estate is a spur off this main line which links along the southern edge of Graven Hill and onto the sites at Upper Arccott.
- North Bicester Railway Station is located approximately 2km north-west of the Graven Hill site. The station is within 30 minutes walking distance from the site, and approximately five minutes drive. Passenger services to and from Bicester North Station are provided by Chiltern Railways, providing direct services between Birmingham and London Marylebone. Services between North Bicester and London Marylebone operate at an average frequency of one every 15 minutes every day, with an average journey time of one hour and five minutes.

Major Scheme Proposals - Chiltern Railways' Evergreen 3

- 2.6.2 The proposed Chiltern Railways' Evergreen 3 scheme proposes to dual the track between Oxford and Bicester in order to achieve a service frequency of every 30 minutes. The scheme which has undergone a Transport and Works Act application and a Public Inquiry was anticipated to receive approval and commence construction in September 2011 with completion between May to September 2012; however it is understood that the scheme has been delayed for 12 months.
- 2.6.3 Langford Lane will be realigned to bypass the ancient scheduled monument in order to provide a bridge to replace the existing surface level crossing. The road will route some 500m southwards in the vicinity of the MOD boundary, and then westwards across the railway line connecting to Wendlebury Lane just south of the slip road onto/off the A41 southbound.



2.7 Current Travel Patterns

Bicester Travel to Work Patterns

- 2.7.1 Bicester is located within the authority of CDC, which is the second largest district in Oxfordshire with a population of approximately 132,000. The Bicester population is known to be around 29,000.
- 2.7.2 To identify potential modal splits, interrogation has been made of the neighbourhood statistics derived from the 2001 Census, as contained on the National Statistics website (www.neighbourhood.statistics.gov.uk).
- 2.7.3 Table 2.2 illustrates the method of transport used to travel to work by the resident population of Bicester South (the nearest ward to the Graven Hill site) and Bicester town.

Table 2.2 Mode of Travel to Work of Residents of Bicester South and Bicester Town

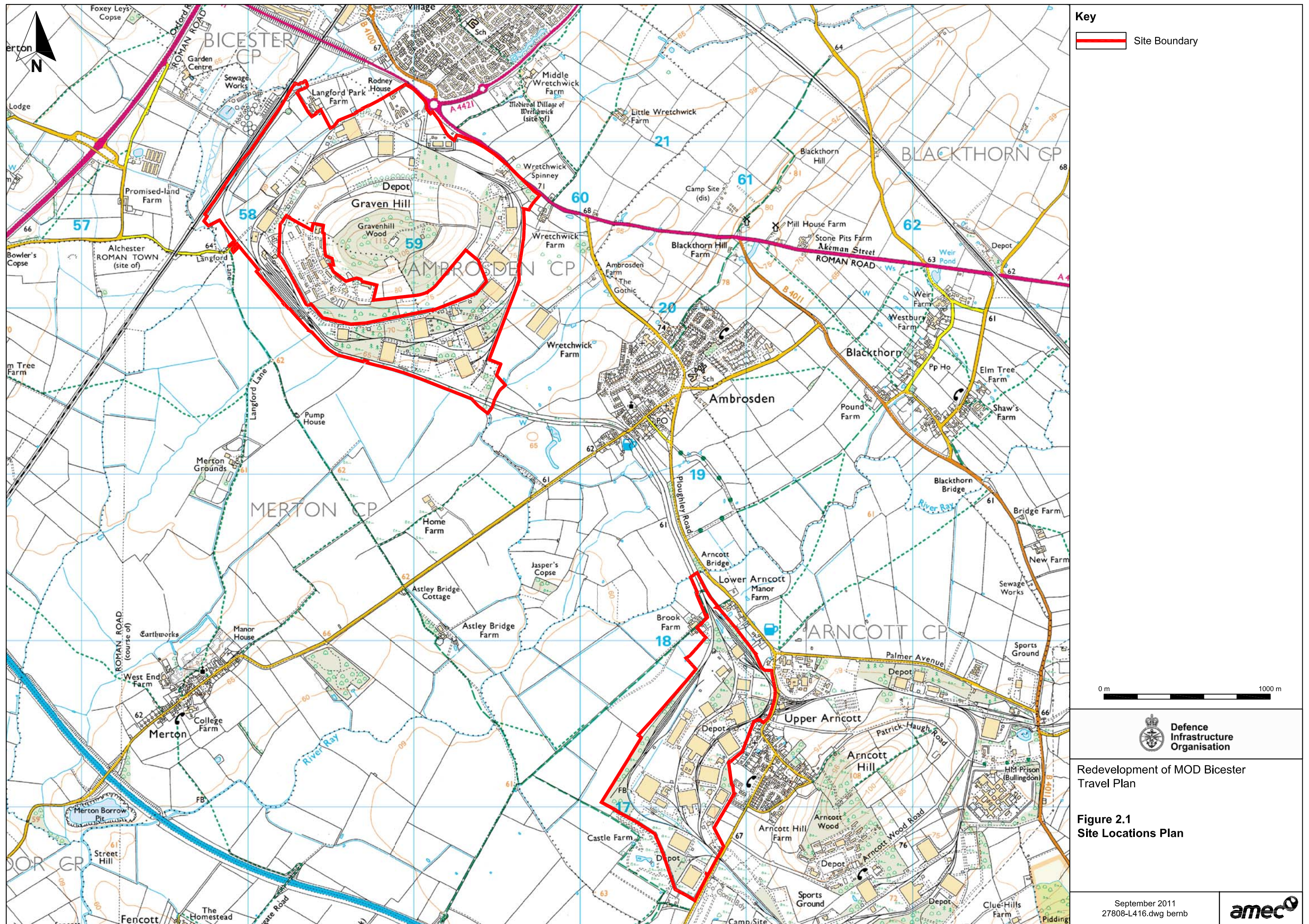
Mode	Bicester South (%)	Bicester Town (%)
Train	3	3
Bus	2	4
Driving a Car/Van	81	71
Passenger in a Car/Van	5	7
Motorcycle	1	1
Bicycle	3	5
On Foot	5	9

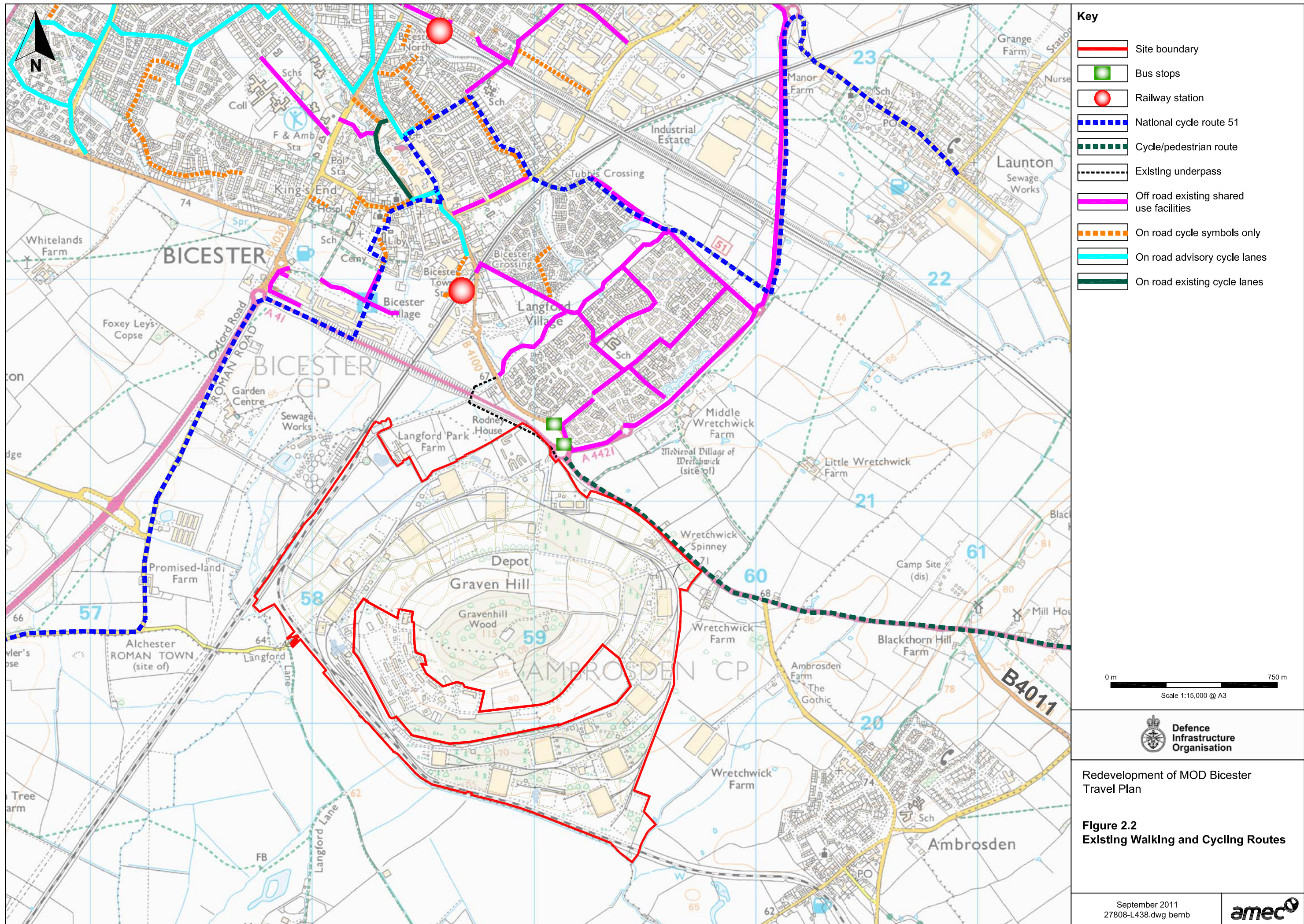
Source: 2001 Census Data (www.neighbourhood.statistics.gov.uk)

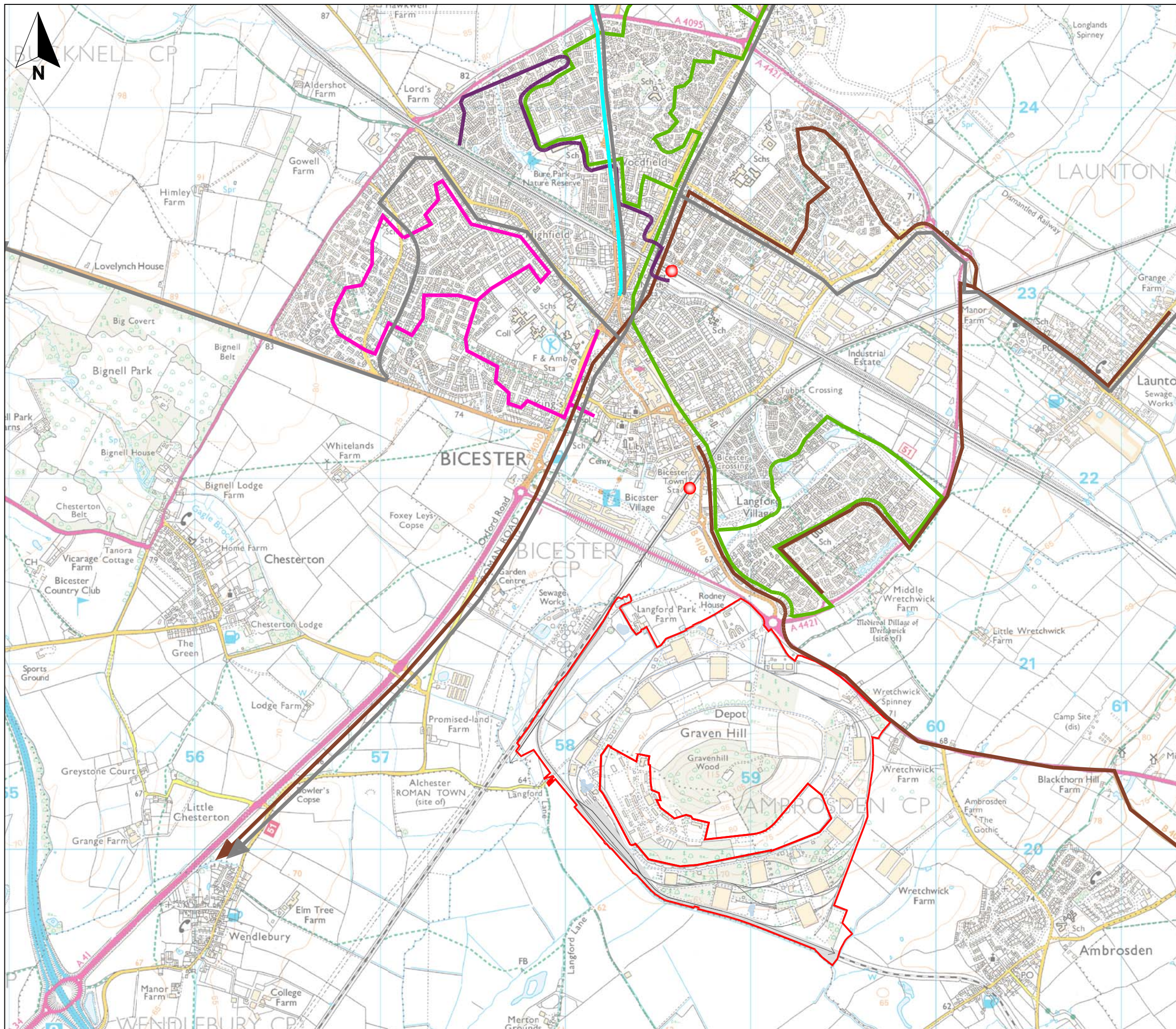
- 2.7.4 The modal choice of residents in Bicester is influenced by location and as is expected, the higher accessibility to alternatives corresponds with a lower number of 'Driving a Car/Van' selections.
- 2.7.5 Within Bicester South, the private car choice is the most popular mode of travel, with 81% of residents driving to work. That suggests that a maximum 24% of the population is travelling in a sustainable manner (assuming that 5% of car drivers have a passenger and are therefore car sharing).
- 2.7.6 Similarly, in Bicester town, it is assumed that 36% of the town population is travelling in a sustainable manner, reflecting the generally good accessibility via rail, bus, walking and cycling.
- 2.7.7 This is a good base point to estimate the potential travel patterns of users and residents at the Graven Hill site and to set suitable targets for influencing travel choices, as per the strategy included within this TP.











Key

Site boundary

Railway station

Bus Routes:

21

22, 23

S5

16, 18, 25, 25A, X5, X88

3

37

0 m 1000 m
Scale 1:20,000 @ A3



Redevelopment of MOD Bicester
Travel Plan

Figure 2.3
Existing Bus Network

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3. Development Proposals

3.1 Proposed Development Scheme

- 3.1.1 The Graven Hill proposals include both the existing D Site and E Site and incorporate a wide range of redevelopment proposals. These have evolved following discussions with OCC and CDC, plus via public consultation events where early influence has been encouraged. The Graven Hill Land Use plan is shown in Figure 3.1.
- 3.1.2 The proposed development at Graven Hill will comprise a mix of commercial and residential development plus associated community facilities. Public open space is also to be provided in line with Cherwell District Council requirements, including existing woodland areas that will form part of an integrated landscape and open space network.

3.2 Access and Movement

- 3.2.1 The guiding principles underpinning the proposed access strategy are:
- providing a choice of routes into the development from the external highway network and avoid excessive traffic loadings at any single point;
 - ensuring no more than 150 homes are served by a single access point off the internal distributor road network;
 - creating an internal street network which maximises opportunities for access by bus services, and thus encourages the provision of attractive and sustainable public transport;
 - creating a fully connected internal layout which minimises barriers to walking and cycling, naturally calms traffic speeds and encourages these modes as a attractive means of travel; and
 - within the residential areas, the streetscape and layout is designed as a “people first, car second” environment.

Access from the External Highway Network

- 3.2.2 Graven Hill is located at a point where traffic accessing and leaving the site will take two different routes, depending upon their origin and destination. The key site access routes are:
- enhanced roundabout junction between A41 Aylesbury Road, the A4421 Neunkirchen/Seelscheild Way and Gravenhill Road North; and



- new roundabout junction between A41 Aylesbury Road and re-modelled Pioneer Road, replacing existing ghost island priority junction.

Streets and Spaces

3.2.3 The street network within the development comprises of a hierarchy including:

- Potential South East Peripheral Road;
- Primary, Secondary and Tertiary Main Streets;
- Main Residential and Residential Streets;
- Lanes;
- Pedestrian/Cycle Routes; and
- Employment Access Roads.

3.2.4 In designing the street network, reference has been made to the OCC's '*Residential Road Design Guide*', the more recent draft Street Hierarchy table which sets out a design guide for residential roads, as well as the Institution of Highways and Transportation's (IHT) '*Manual for Streets 2*', 2010.

Pedestrian/Cycle Routes

3.2.5 The pedestrian and cyclist routes proposed throughout the site comprise a main circular route around the perimeter of the site, ideal for cyclists or as a running route (or potential trim trail) at 5.75km, with a series of connecting paths along green corridors. These 'green' pathways and cycleways avoid the need for road use and provide a total of 14.4km of traffic-free, safe pedestrian and cyclists routes throughout the site.

3.2.6 The network of pedestrian and cyclist routes proposed around the site are predominantly located along the green fingers which connect to the top of Graven Hill (as the key recreation destination). These green fingers provide a radial pattern on all sides of the hill offering pedestrians and cyclists a variety of routes around the site.

3.2.7 These recreational routes will predominantly be a minimum width of 3m and will be geometrically-designed and surfaced in accordance with current Sustrans specifications for 'traffic-free paths'. A number of routes (both existing and proposed) will be provided through the woodland of Graven Hill which reflect current desire lines through the woodland and historic routes which have become overgrown. These routes will be less formal and likely to comprise woodchip/bare-earth surfacing.

Parking Approach and Levels

3.2.8 It is intended that cycle and car parking within the development will be in accordance with the current OCC parking standards as provided by the highway authority officer.



- 3.2.9 It would be intended to create a single combined public cycle/car park serving the Local Centre to minimise the need to travel to different sites within this single location and to provide the greatest flexibility in uses of the cycle/car parking area.
- 3.2.10 Appropriate levels of cycle/car parking will be provided which prioritise sustainable transportation modes but also integrates provision for the car at key locations.

Accessibility

- 3.2.11 An indication of the proximity of the development proposals to facilities and services is shown in Figures 3.2 and 3.3 which are isochrone maps set out in 500m distances. Separate mapping has been undertaken for the main residential area to the north and the employment area to the south.

3.3 Phasing

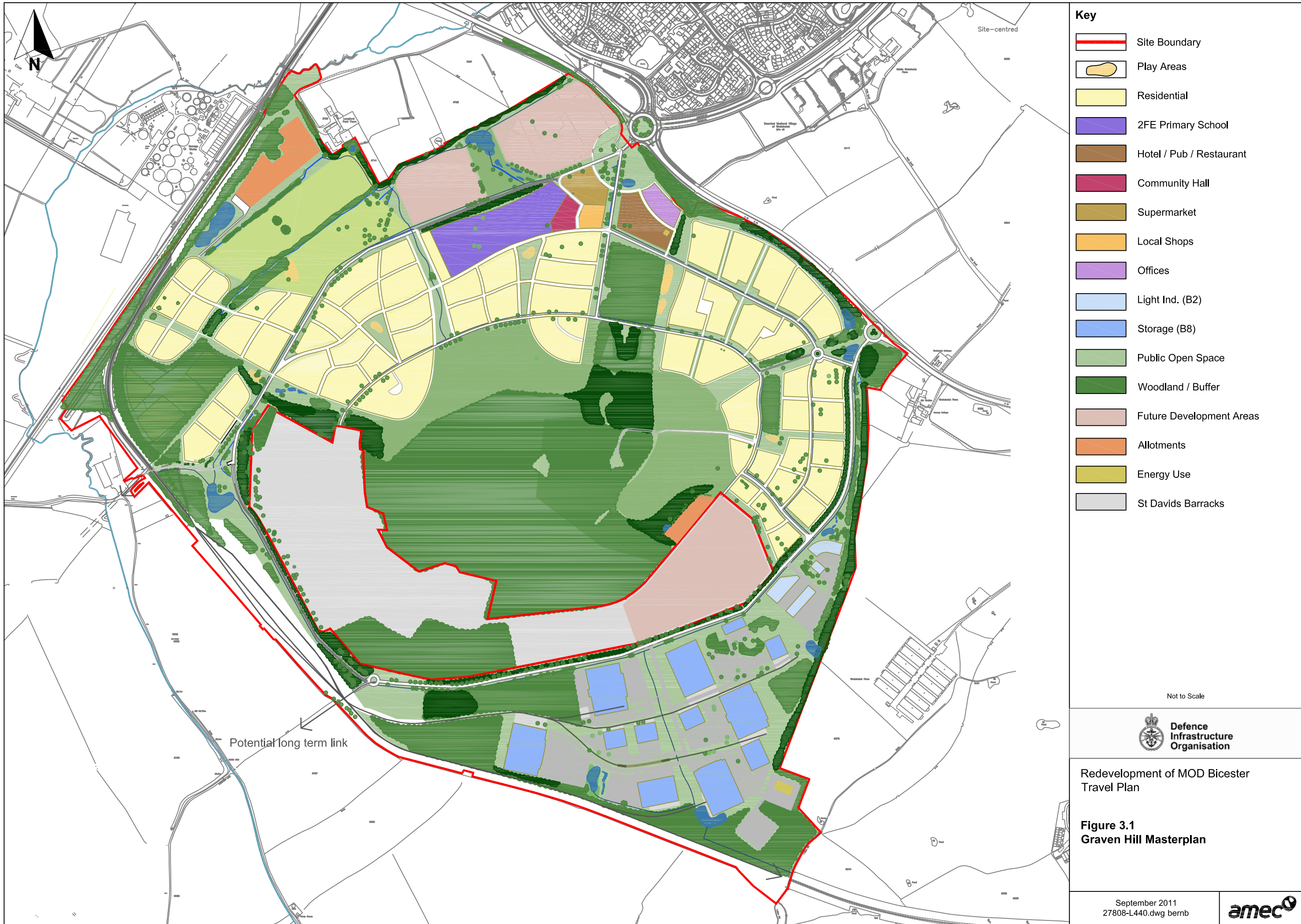
- 3.3.1 Table 3.1, below, summarises the anticipated phasing of the development proposals.

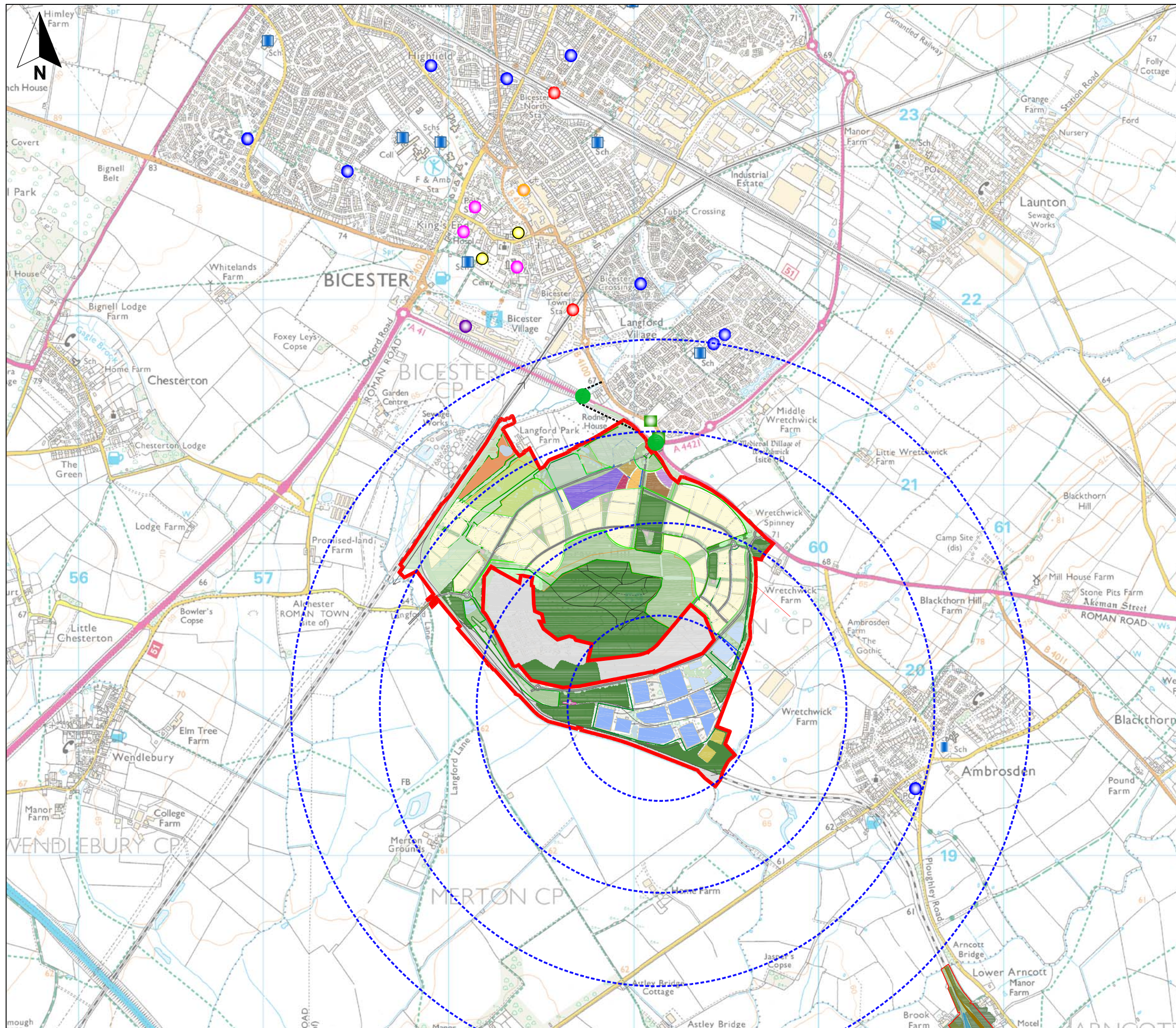
Table 3.1 Phasing of Development: Graven Hill

Phase	Overview of development
Phase 1	<p>Employment land uses Construction of approximately 2.8ha of B2 light industrial units (depending on demand) and/or rental of existing industrial units (2015-2018)</p> <p>Residential land uses 300 dwellings (2015/2016 to 2016/2017)</p> <p>Other land uses Upgrade of the two site access points (2015) Local centre (2015-2016) Opening up of Graven Hill woodland, hill top open spaces and provision of sports/allotments provision (2015-2016). Initial bus link via the new gateways and Circular Road. Primary school</p>
Phase 2	<p>Employment land uses Construction of approximately 11.7ha of B2 light industrial units and B8 warehousing (2018 - 2023)</p> <p>Residential land uses Eastern neighbourhood area - 840 dwellings (2016/2017 to 2021/2022)</p>
Phase 3	<p>Employment land uses Construction of remaining B8 warehousing (2023 - 2027)</p> <p>Residential land uses Western neighbourhood area - 760 dwellings (2021/2022 – 2027/2028)</p> <p>Other land uses Potential Peripheral Road connectivity in place on Graven Hill Circular Graven Hill bus route in place.</p>









Key

- Site boundary
- Pedestrian/cycle improvements
- Chiltern Railways Langford Lane improvement

Local Facilities:

- Railway station
- Bus station
- Bus stops
- Schools
- Local neighbourhood centres
- Public buildings
- Churches
- Hotel/large retail outlet
- Improved existing underpass
- 500m isochrones

0 m 1000 m

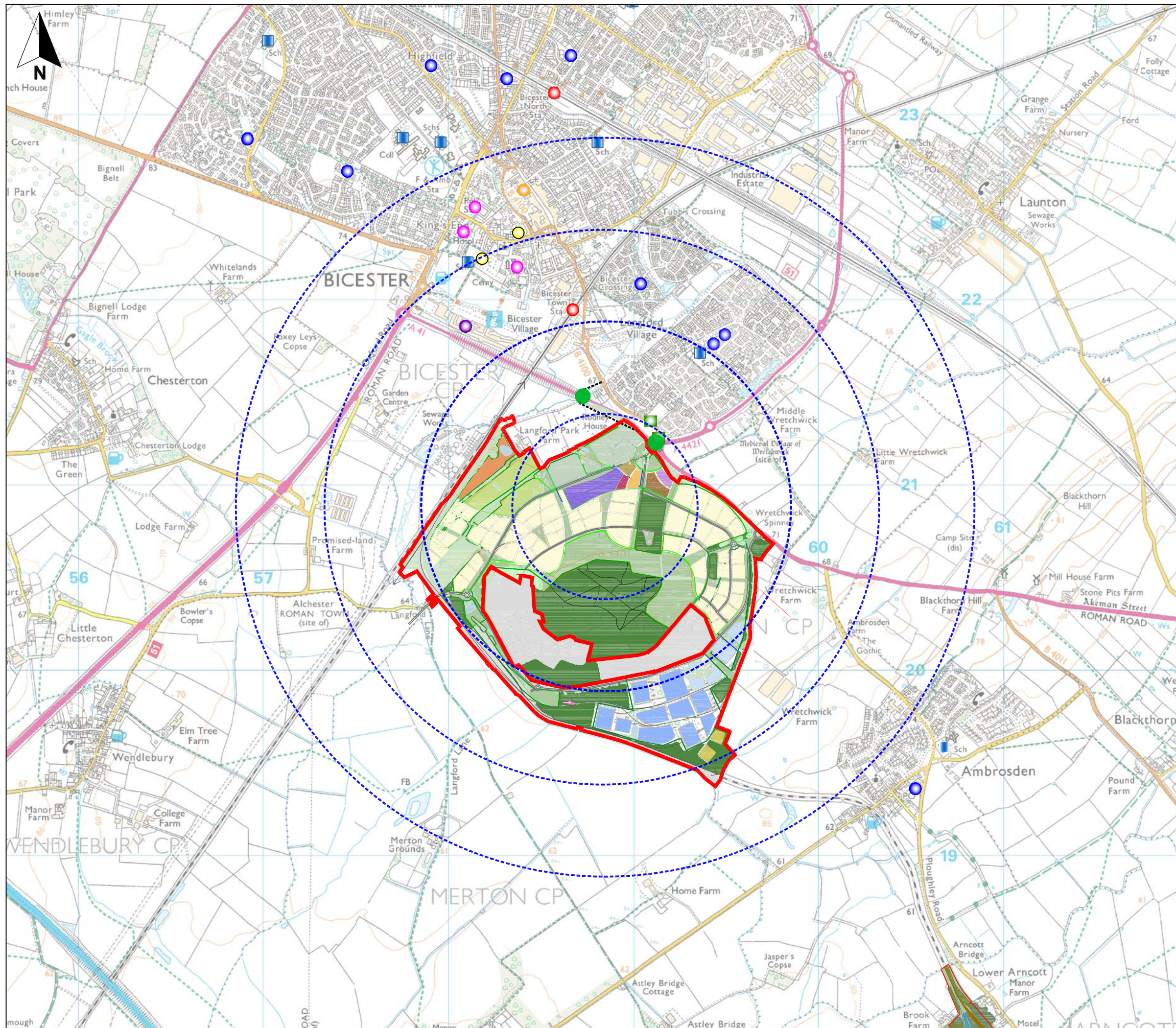
Scale 1:20,000 @ A3

Defence Infrastructure Organisation

Redevelopment of MOD Bicester
Graven Hill Travel Plan

Figure 3.2
500m Isochrones -
Employment Site

August 2011
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Key

- Site boundary
- Pedestrian/cycle improvements
- Chiltern Railways Langford Lane improvement

Local Facilities:

- Railway station
- Bus station
- Bus stops
- Schools
- Local neighbourhood centres
- Public buildings
- Churches
- Hotel/large retail outlet
- Improved existing underpass
- 500m isochrones

0 m1000 m

Scale 1:20,000 @ A3

Defence Infrastructure Organisation

Redevelopment of MOD Bicester

Graven Hill Travel Plan

Figure 3.3

500m Isochrones -

Residential Development

August 2011

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4. Objectives and Targets

4.1 Introduction

- 4.1.1 The following section sets out the main principles of this TP for the proposed development at Graven Hill and aims to establish the main objectives, which will be implemented as part of these proposals.

4.2 Objectives

- 4.2.1 The TP aims to establish the overarching vision for the site and the direction that a full TP will strive to achieve once development begins, and is completed.
- 4.2.2 It is important to set out a number of clear primary objectives, which will aim to be delivered as part of this TP and continued throughout the life of subsequent TPs on-site, and their revision.
- 4.2.3 These are identified below:
- to reduce the volume of car traffic generated by the development, particularly single occupancy vehicles;
 - reduce the need to travel (to and from) the development by private vehicles;
 - promote the increased use of cycling, walking and public transport and therefore healthier living;
 - promote the development of a transport system which enhances the environment and supports a sustainable economy;
 - increase individuals awareness of available travel choices; and
 - to develop a long term ethos of sustainable travel.

4.3 Targets

- 4.3.1 The targets to achieve these objectives will be influenced by the following site and development characteristics:
- feasible access by bus, rail, cycle, car sharing, and walking for residents, visitors and employees;
 - number of residents, visitors and employees on site;
 - site characteristics;



- location of residents' workplaces; and
 - opening hours/times of on-site businesses/community facilities.
- 4.3.2 It is important that targets set should be SMART (Specific, Measurable, Achievable, Realistic and Time Bound).
- 4.3.3 As the end users of the development are currently unknown outside of the proposed land use types, it is difficult to set exact modal share targets. It is proposed that initial targets included within this TP for each development type are developed via existing travel behaviour knowledge, coupled with the data used in the TA to estimate potential traffic generation.
- 4.3.4 Based on the 2001 Census analysis of Bicester town and Bicester South (Table 2.2), the following are considered suitable initial targets for the Graven Hill site. It is noted that the 2001 Census records approximately 7% and 8.5% of employed residents as working from home for the whole of Bicester and Bicester South ward respectively.

Residential

- No more than 81% of employed residents to travel to travel to work in a SOV in the first year post first occupation (including those who work from home);
- No more than 79% of employed residents to travel to work in a SOV at three years post first occupation (including those who work from home);
- No more than 77% of employed residents to travel to work in a SOV at five years post first occupation (including those who work from home);
- No more than 76% of employed residents to travel to travel to work in a SOV in the first year post first occupation (including those who work from home);
- No more than 75% employed residents to travel to work in a SOV at seven years post first occupation (including those who work from home);
- No more than 74% of employed residents to travel to work in a SOV at nine years post first occupation (including those who work from home);
- No more than 73% of employed residents to travel to work in a SOV at eleven years post first occupation (including those who work from home);
- No more than 72% of employed residents to travel to work in a SOV at thirteen years post first occupation (including those who work from home); and
- No more than 71% of employed residents to travel to work in a SOV at fifteen years post first occupation (including those who work from home).

Employment

- A maximum 79% of employees travel to travel to work in a SOV in the first year post first occupation;



- No more than 77% of employees to travel to work in a SOV at three years post first occupation;
- A maximum 75% of employees to travel to work in a SOV at five years post first occupation;
- No more than 73% of employees to travel to work in a SOV at seven years post first occupation;
- A maximum 71% of employees to travel to work in a SOV at nine years post first occupation;
- No more than 69% of employees to travel to work in a SOV at eleven years post first occupation;
- A maximum 67% of employees to travel to work in a SOV at thirteen years post first occupation; and
- No more than 65% of employees to travel to work in a SOV at fifteen years post first occupation.

Education

- 4.3.5 The proposed development provides for a new two form entry (420 pupil) primary school, with sufficient space for the school to be extended to three form entry should this be required in the future (this could accommodate 630 pupils between the ages of 4 and 11 years old if deemed necessary). The Graven Hill site itself would generate the main demand for spaces at the school, resulting in a high level of containment and opportunities for sustainable transport. The remaining catchment would likely be the existing housing developments off Peregrine Way, north of the Graven Hill site.
- 4.3.6 The TA assumes that 15% of the person trips to the school will be external to the site, including staff and pupils. The modal split targets for the external trips are as follows:
- 70% will travel as a 'car driver' trip i.e., either SOV, or a journey specifically to drop off or pick up, 15% will walk, 10% will car share, 3% travel by bus, and 2% cycle.
- 4.3.7 The modal split targets for the person trips internal to the site are as follows:
- 50% will walk, 20% will travel as a 'car driver' trip, 17% will car share, 7% will cycle, 5% will travel by bus, and 1% will travel by other private means.

Conclusions

- 4.3.8 The targets indicated in this TP are an initial baseline and therefore will be reviewed and potentially revised as the development proceeds, especially following the results of scheduled travel surveys.





5. Management

5.1 Introduction

- 5.1.1 To ensure the long term success of a TP, it is imperative to develop a strategy which includes long term ownership and responsibility. It is well documented that a TP where management support is high has a far higher chance of success than one which does not have such support.
- 5.1.2 Whilst this is not possible within a residential development, it is perfectly feasible within the employment and educational elements of the proposed development.
- 5.1.3 Coordination of the TP is also important and this is usually carried out via a TPC, who is responsible for developing the TP and working with all users to facilitate opportunities to make sustainable travel choices.

5.2 Coordination

- 5.2.1 The appointment of an effective TPC working with everyone on site is integral to the success of a TP. The role of the TPC will be to establish the full, overarching TP to ensure that it becomes integral to the occupants of the development from first occupation. This will require TPC involvement during the detailed design, pre-construction and construction stages.
- 5.2.2 The following are likely responsibilities of the site TPC:
- overseeing the development and implementation of the Residential TP during the construction phasing and occupation;
 - assisting the development and implementation of the Workplace TP during the construction phasing and occupation;
 - designing and implementing effective marketing and awareness raising campaigns;
 - coordinating the consultation process;
 - assisting individual TPCs within each workplace;
 - acting as a point of contact for residents, visitors, and employees, requiring information;
 - liaising with different groups relating to the TP, e.g. OCC, transport operators, cycle shops, etc.;
 - coordinating the monitoring and review programme including target setting; and



- ensuring efficient and effective use of TPC time and resources.

- 5.2.3 It is proposed that the TPC role will be undertaken by an appropriate member of staff, to be identified by the site developer. Ideally this would be a member of the sales team, based on site, or a staff member who can use a site based office. This should be in place for the duration of the construction period, or until such time that the role becomes obsolete. It is proposed for the TPC to be in post three months before the first occupation. If required, training will be provided from a suitable source, such as via an ACT TravelWise Introduction to Travel Planning workshop.
- 5.2.4 It is also proposed that each commercial occupation and the local centre have a member of staff who is responsible for liaising with employees and the sales team TPC. It is hoped once the development is completed that the ethos has been established within the site and certain measures become standard. However, those which would require longer term development could be adopted by the individual TPCs and within the local centre as a community activity, rather than on a formal basis.
- 5.2.5 An example job description for the TPC is shown in Appendix A.

5.3 Travel Plan Working Group

- 5.3.1 In addition to the TPC working with individual organisations, local transport groups, OCC and other key stakeholders it is considered necessary with a development of this scale to establish a working group, as is currently the case with respect to the South West Bicester development (Kingsmere).
- 5.3.2 The group would meet on a regular basis and it would consist of the following members:
- OCC;
 - CDC;
 - TPC;
 - Employer TPCs;
 - Transport Operators; and
 - Resident Representatives.
- 5.3.3 If required, or deemed relevant other individuals and groups would be invited as appropriate. These could include:
- Bicycle User Group Representatives;
 - local Rail/Bus/Transport Groups;
 - local Councillors/Police Community Support Officers; and
 - members of the public/employees.



-
- 5.3.4 Until the TP is established and understood by those involved it would be assumed that the working group would meet on a quarterly basis, or more often if required. Once the TP is in a maintenance phase, this could be reduced however it is important to keep the TP at the forefront of individuals' minds and as such this would not be encouraged.
- 5.3.5 The overarching TPC would be responsible for organising the group and would act as Chairman.
- 5.3.6 The group would be responsible for undertaking monitoring surveys, provide assistance as required, and produce the monitoring report to be submitted to OCC and champion events or special projects.





6. Travel Plan Measures

6.1 Introduction

- 6.1.1 As the Graven Hill site will be accessed on a continuous basis for various types of trips related to residential activity, commercial, education and leisure trips, it is important to develop a wide range of appropriate measures for each mode of travel.
- 6.1.2 These measures must relate to the specific land use and therefore have been categorised under the following:
- pre-design and construction;
 - construction;
 - short/early occupation;
 - medium term; and
 - longer term.
- 6.1.3 The time period of implementation is demonstrated within Table 8.1 in chapter 8 of this document.
- 6.1.4 Where appropriate, the measures have further been identified as:
- ‘physical’ measures - intended to facilitate changes in travel behaviour; and
 - ‘soft’ measures - intended to influence travel behaviour.
- 6.1.5 The TP includes specific measures for the site, however it is noted that certain measures will only be relevant to specific groups; for example employees, which would be unsuitable for residents or visitors. It is envisaged that workplace TP measures relating to employer agreements would be developed as occupation of the employment area and neighbourhood centre commences. These are identified within the text and in chapter 8 of this document:
- A - All Users;
 - C - Commercial;
 - R - Residential; and
 - E - Educational.
- 6.1.6 As the end users are currently unknown, this TP puts forward a number of commitments and other measures, however as the full TP is developed the proposed measures may or may not be implemented. This would be subject to agreement by the TPC and OCC.



6.2 Measures by Mode

Walking and Cycling Strategy

Physical Measures

- 6.2.1 The provision of high quality pedestrian and cycle facilities such as pathways, adequate lighting and signage are essential in any development to promote active travel. It is highly likely that people will undertake many trips on foot, especially for those trips between developments within the site.
- 6.2.2 The location of the site and its topography are such that residents and employees will be encouraged to cycle for journeys both on site and off-site. To promote this, the following measures will be included:
- an extensive network of shared use walking and cycling routes within the site which connect to the external network;
 - cycle parking for each dwelling;
 - secure cycle parking within public open spaces and employment areas; and
 - personal showers/lockers in the employment space to encourage walking and cycling to work.
- 6.2.3 All streets will have standard footways on either side and cyclists will be accommodated with a combination of on-road routes and off-road shared use routes. On-road routes will be along the main streets in appropriately scaled cycle lanes along Westacott Road, Circular Road, Pioneer Road and the new Main Street. This will provide an accessible network of streets and routes enabling walkable neighbourhoods and encouraging local travel by foot or cycle. Dedicated recreational routes will also be provided alongside green spines.
- 6.2.4 All housing areas will be within 800m of the Local Centre and denser areas will be within 400m. Home Zone type design principles will be applied to the residential priority streets where the living environment will be predominant over provision for traffic. Vehicles will be controlled to create a safe environment through street design, landscape design and highway engineering.
- 6.2.5 Pedestrian and cycle priority links will be provided through the site and safe crossing points will be provided across the A41 as described in the following sections and illustrated in Figure 6.1.

Pedestrian crossings on A41/B4100/A4421 roundabout

- 6.2.6 It is proposed to signalise the A41/B4100/A4421 roundabout which will improve the capacity of the junction, and will also enable toucan crossing provision to enhance the pedestrian environment and address the issue of the A41 severance.



Toucan crossing on A41

- 6.2.7 It is proposed to provide an at-grade pedestrian/cycle crossing on the A41 in the form of a Toucan crossing at a location some 165m to the west of the A41/B4100/A4421 roundabout, where there is evidence of an existing informal crossing point. The crossing will be accessed from the site along a section of the access road that leads to Langford Park. The crossing will provide a connection to an existing footway across the highway authority land to a footway along the southern side of the B4100 which also leads to a bus stop.

Pedestrian/Cycle Underpass

- 6.2.8 The existing pedestrian underpass under the A41 will be upgraded in order to increase its attractiveness for use. This will include improved ground surfacing, entrance spaces, vehicle access restraints, wall and ceiling finishes and lighting. Opportunities to do this with the input of the local community and particularly the new school would be ideal to utilise funds for public art for example to productive and beneficial use, such as the examples opposite.

Soft Measures

- 6.2.9 In addition to the measures listed above, a range of other cycle and walking specific measures will be designed and implemented within the site.
- 6.2.10 Cycle and local walking maps for residents, employees, students and visitors will be required to promote these modes. The TPC will liaise with the appropriate officer within OCC for the provision of these for distribution. These will be provided in each residential welcome pack and they will be available to all employees and students via notice boards or intranet sites.
- 6.2.11 As stated above, the TPC will be appointed to undertake tasks such as liaising with local cycle shops. It would be hoped that a discount scheme will be arranged with local cycle shops, for residents or employees of the development.
- 6.2.12 The TPC would arrange for cycle demonstrations on site by bicycle providers and a Bicycle User Group (BUG) would also be established on site by the TPC if deemed appropriate by users. This would allow users to raise any concerns, organise cycle maintenance sessions, such as 'Dr Bike' and organise bike rides to promote cycling as a form of transport and also exercise. This could be available to all users, or just residential and/or employees as identified via feedback and surveys.
- 6.2.13 Walking and cycling BUDDI schemes would be encouraged, especially within the education and employment elements of the site. These would encourage people to travel together and usually prove useful for those not confident in the local environment. This could be coupled with 'Walking Buses' for students travelling on foot, this measure would be promoted via the school and TPC.
- 6.2.14 Regular promotion of walking and cycling via short term schemes, such as a Cycling Challenge or Pedometer Challenge would be undertaken via the TPC. These could be targeted to different audiences, such a residents or employees. This usually encourages competition and can be useful to get individuals engaged in the aims of the TP.



Public Transport Strategy

Physical Measures

- 6.2.15 In accordance with the overall sustainability objectives of the development, the site layout has been optimised so that no part of the scheme will be more than 400m from a bus stop. The form of Graven Hill lends itself particularly well to this given its broadly circular form. Accordingly the main circular loop road through the development will be designed to accommodate bus services, with provision for high quality bus stops being made at regular intervals as indicated.
- 6.2.16 It is anticipated that all bus services would focus around the Local Centre as the main stopping point, with other stops at key points such as the employment areas linking into the green/footpath network in particular. This network of potential bus services and enhancement of existing bus services is presented in the accompanying TA and TP.

Bus Provision

- 6.2.17 Bus provision for the site will need to provide links to key local destinations, including Bicester town centre and the two rail stations, and be of a good frequency throughout the day, particularly during the peak periods.
- 6.2.18 The following are considered to be the general principles for provision.
- General guidance on levels of bus service provision identifies a frequency of at least 15-20 minutes is required to provide a feasible alternative to private car use.
 - Bus stops need to be appropriately located in order to maximise potential patronage, aiming for every household to be within a 400m walking distance catchment from a bus stop.
 - Real Time Information (RTI) is generally considered as being important in encouraging bus patronage.
 - The commercial viability of bus service options needs to be assessed with the potential bus service providers and a monitoring system established to ensure the effective use of developer funding required.
- 6.2.19 Discussions have been held with OCC and the bus operator Stagecoach to explore the most appropriate level of provision for the Graven Hill site, the minutes of which are contained in Appendix A. It was concluded that the following would form the basis for a bus strategy for further investigation:
- new bus service to Bicester; and
 - diversion of S5 into the northern part of the site (neighbourhood centre and high density/affordable housing), providing a link between the site and C Site, also strategic routing to Oxford.
- 6.2.20 It is proposed to provide a new 15-20 minute frequency bus service to link the site to the town centre and train stations. This would comprise a minibus during the initial stages of occupancy, upgrading to a larger bus as the development builds out. The



service would need to link with train times. It has been acknowledged by OCC that the employment area would not need a frequent service all day and that service times can be restricted to peak periods and lunchtime.

- 6.2.21 As there is no public funding available to subsidise buses, the service would need to be commercially viable within a specified time frame as it is recognised that a development cannot be expected to fund a service indefinitely. The opportunity for the bus service to link to the NW Bicester site would be investigated with the promoters of that site; this would help the funding and commercial viability of the service. The draft Heads of Terms (appended to the Planning Statement) contains information on funding.

Soft Measures

- 6.2.22 The development proposals will include the provision of a 15 minute frequency bus service looping around the site and connecting to the town centre and train stations from commencement of occupation, initially as a minibus. A separate bus strategy will be produced to identify the routeing, potential costs and commercial viability and consultation with bus operators.
- 6.2.23 There are numerous ways that public transport can be promoted, usually regarding promotional materials and pricing.
- 6.2.24 Working with OCC and the local bus operator, the TPC would identify what specific advice and publicity is required to promote the existing services and how to get to useful destinations by bus. This would be revised during development to enable changes to be made as required.
- 6.2.25 Local rail and bus timetable information would be available within workplaces, the neighbourhood centre and education facility, and be available to residents via electronic format. If requested, paper copies can be supplied via the TPC.
- 6.2.26 It is proposed to give residential users access to a trial bus pass, if this is requested or deemed appropriate via Personalised Travel Planning (PTP), which will take place with each household upon occupation.

Car Share Strategy

Physical Measures

- 6.2.27 It is accepted that the private car will remain the only viable form of transport for certain journeys. However, car sharing will be encouraged and dedicated car share spaces will be provided within the employment and education areas to encourage those for whom this is a feasible option. These spaces will be positioned in favourable locations and be available for car sharers only. The management of these spaces will be the responsibility of each on-site organisation.
- 6.2.28 It is proposed that 10% of all on-site employee car park spaces will be car share only; this will be reviewed as appropriate and more spaces will be included if demand is visible via comments to the TPC or in scheduled travel surveys.



Soft Measures

- 6.2.29 Alongside the car share spaces, it is favourable for the development to have a dedicated car share website to encourage and facilitate members to find car share partners. A private car share group will be maintained by the TPC. It is proposed to access <https://oxfordshire.liftshare.com>, the leading car share site in Oxfordshire. All residents and employees will be encouraged to join the site and if deemed appropriate a dedicated 'Graven Hill' site will be operated within this pre-existing LiftShare.com site.
- 6.2.30 Regular marketing campaigns will be developed via the TPC to encourage people to share their journeys. Whilst traditionally formal car sharing is usually associated with workplace trips, it is also important for leisure and other trips to be targeted too. The TPC will be responsible for this and it may include car share event days.
- 6.2.31 Individual commercial organisations will be encouraged to promote internal car sharing and if required sub car share sites can be adopted, if appropriate with business requirements.
- 6.2.32 Appendix B includes information on the establishment of a Car Share Scheme.

Other Measures

Car Club

- 6.2.33 A 'car club' provides its members with flexible access to the 'hire' of a car club vehicle. Car club vehicles are parked in reserved parking spaces, close to homes and/or workplaces and can be used, and paid for, on an hourly, daily or weekly basis.
- 6.2.34 This measure was not deemed appropriate within initial discussions with OCC, however it has been included within this TP and it is proposed to investigate this further as the full TP is updated and user requirements are known.
- 6.2.35 If implemented in the future appropriate space will be used to park Car Club vehicles. This could be within the employment areas, in the local centre or in areas of the residential development where significant interest is identified.
- 6.2.36 If launched, the TPC and identified car club operator would be responsible for providing marketing material, which would be distributed to all potential users and be used to promote the benefits, and workings of the scheme.

Information Communication Technology (ICT)

- 6.2.37 ICT will be designed into the development to encourage home working via broadband and flexible layouts, and to ensure that commercial elements of the site have access to video conferencing.
- 6.2.38 Video and teleconference facilities should be provided within the local centre and where possible be available within private dwellings as part of a site only intranet site.
- 6.2.39 The development intranet site will include online travel guidance, links to the car share scheme, provide information on key facilities and destinations, and allow access to personal video conferencing facilities.



Alternative Vehicle Charging Points

- 6.2.40 These will also be considered, dependent on potential demand from residents and employers. The advances in electric cars, recent Government policy announcements and commitment by manufactures to mass produce these in the UK make this a realistic option as an alternative to petrol and diesel vehicles.

Personalised Travel Planning (PTP)

- 6.2.41 PTP is an essential part of any TP to ensure maximum success. It is envisaged that the TPC will meet with all new occupants and discuss travel options and choices. This will include where key facilities are located, how to access public transport services, identification of safe routes to school and other essential information.
- 6.2.42 Where possible, the TPC when providing the PTP service will encourage residents to make the most appropriate travel choice; this could include not travelling at all if technological alternatives exist and if a journey is essential then the more suitable mode should be used. This should favour a modal hierarchy; walking, cycling, public transport, car club (if appropriate), car sharing and if no other suitable alternative exists, the individual private car.
- 6.2.43 The TPC will give residents detailed information packs, including maps, public transport timetables, a house to get to guide and instructions on using the car share website and if appropriate, car club.
- 6.2.44 When undertaking PTP the TPC will offer an appropriate trial offers, such as a bus pass to enable residents to challenge perceptions and undertake a 'try before you buy'. It is unlikely that every resident would be willing, or suitable for each possible option, however the TPC and OCC would agree these criteria, if not already agreed as part of the full TP development.
- 6.2.45 Commercial occupants will receive a similar service; however it is assumed that the site TPC will work with the individual TPCs to assist in delivering this information.
- 6.2.46 It is agreed that providing tools to encourage individuals to change their travel behaviour is important, especially when moving to a new house. However, it is widely acknowledged that residents will fix their travel mode within the first few weeks of moving into a new house. It is therefore important that new residents are targeted early in their moving process.
- 6.2.47 Via the PTP process, the TPC should identify which travel choices will be most appropriate. This should be based on work/travel location, key destinations and other information known about the household. From these discussions the most appropriate tool should be provided to residents.

6.3 Car Parking and Parking Management Strategy

- 6.3.1 In any development, car use will be the only viable means of transport for some journeys. Whilst this TP does not exclude car use, it does however set out to manage it in favour of alternative modes where possible.



- 6.3.2 One of the main objectives of this TP is to promote the alternative opportunities and ensure a range of measures are in place to ensure that information is provided and car use is not automatically the chosen way to undertake a journey.
- 6.3.3 One accepted way to discourage car use is effective management of on and off-site car parking. Due to the location of the site, it is not anticipated that off-site car parking will occur or be desirable; therefore effective management of on-site parking will be required.
- 6.3.4 The design of on site residents parking and commercial/neighbourhood centre parking will be according to OCC parking standards. The design of the whole site will prioritise pedestrians and cyclists above car use.

6.4 Workplace Travel Plan Good Practice Measures

- 6.4.1 The following Workplace TP measures would be promoted as good practice to employers/occupants of the commercial centre as occupation commences:

Employer Flexibility

- 6.4.2 Very much dependant on the business requirements of the occupiers of the site, employers could assist their staff to use sustainable travel modes (car share, public transport) through a degree of flexibility with regard to allocation of shifts, working hours and travel time. Allowing employees to arrange their working hours to coincide with lift-givers could assist in promoting sustainable travel.

Salary Sacrifice Schemes

- 6.4.3 Including public transport passes and cycle to work schemes, the option of annual loans to enable employees to purchase transport passes or cycles is a good way to promote sustainable travel. This would be dependent on the business type and size; however is a good added incentive if deliverable.





- Key**
- Site boundary
 - Pedestrian/cycle crossings
 - Pedestrian/cycle route
 - Underpass
 - Toucan crossing
 - Junction Improvement (See Fig 11.3)



Redevelopment of MOD Bicester
Travel Plan

Figure 6.1
Graven Hill Proposed Pedestrian
and Cycle Infrastructure

September 2011
27808-L489.dwg. bernb



7. Monitoring and Mitigation

7.1 Monitoring

- 7.1.1 This TP provides the basis of the overall monitoring proposals for the Graven Hill site development and sets out commitments of when the full TP will be monitored and reviewed, plus the methodology of how this will be undertaken.
- 7.1.2 The full TP will be agreed with OCC at least three months prior to the initial occupation of the development.
- 7.1.3 This TP commits the developer to undertake a site travel surveys with occupiers of the site at the following intervals.
- Residential - Biannually from initial occupation. This will continue until five years after completion of the development (assumed to be twenty years).
 - Commercial - Biannually from initial occupation. This will continue until five years after completion of the development (assumed to be twenty years).
 - Education - It is assumed that the school will take part in the classroom surveys, which happen annually. This would be undertaken with OCC/school staff. However, it is proposed that this information is given to the site TPC for monitoring purposes.
- 7.1.4 The survey would be undertaken by the TPC and be available either online or via paper copies. It is assumed that the commercial TPCs will undertake their own organisations' surveys and feedback to the site TPC.
- 7.1.5 Residents will be encouraged to reply to these surveys, which would be generally short however would also include a Household Travel Diary, asking specific questions of journeys undertaken in a predefined period.
- 7.1.6 In addition, to travel surveys, traffic counts would be used to measure vehicle generation from the site. This will consist of an ATC at the main entrances to the residential and commercial sites to measure traffic flows in/out of the development. It is proposed these would remain for a seven day period to ensure an accurate flow of traffic is recorded. This would be repeated on each monitoring stage for a minimum period of five years after adoption of highways. The results of these counts would be presented as part of the overall monitoring report, which will be submitted to OCC as stated within this TP document
- 7.1.7 Monitoring should be undertaken within the same week each year on a working day where there are no exceptional conditions, i.e. school holidays, bank holidays, transport service disruption, etc.



-
- 7.1.8 Survey results would be submitted to the Travel Choices team at OCC within three month of the survey, along with a review document highlighting areas of success and concern. Any proposed changes will be discussed with OCC TPC and implemented by the site TPC accordingly.
- 7.1.9 An example Commercial Travel Survey can be found in Appendix C.
- 7.1.10 Examples of approach include the following.
- The take up of the car sharing scheme and the demand for car parking spaces.
 - The demand for cycle parking stands and changing/shower facilities in the commercial area and local centre.
 - Residents and workplace travel behaviour.
 - The TPC would need to keep a record of comments on the scheme received from residents, visitors and employees.
 - The use of site specific schemes.
 - Participation of TPC in lead events such as bike rides.
 - From the survey analysis it would be possible to see which methods are having the desired effect and therefore resources can be specifically targeted to these to ensure they are successful.
 - Monitoring of employees'/residents' home/work location the objective of which would be to identify long distance commutes and those employees living in the local area or within the new development. This information could then be used to identify personal travel plan options.
- 7.1.11 Education survey results would be provided via OCC and added accordingly into the monitoring document.
- 7.1.12 An agreed monitoring fee will be agreed with Highways DC upon application.

7.2 Review

- 7.2.1 The TP will be reviewed on the basis of the results of the monitoring surveys against the baseline data and the identified targets and updated at the following intervals:
- 50% Occupancy of Phase One;
 - 50% Occupancy of Phase Two; and
 - 50% Occupancy of Phase Three.
- 7.2.2 Where elements of the TP are identified to be underperforming, these would need to be reviewed and revised as appropriate, for implementation by the TPC. This may include, for example, the bus timetable or routeing, means of distribution of transport information, etc.



8. Action Plan

8.1.1 Table 8.1 demonstrates the proposed implementation plan for this TP and provides who is responsible for each action.

Table 8.1 Graven Hill TP Implementation Plan

Stage	Measure	Description	Implementation	Applicable Land Use*	Responsibility
Design and Pre-construction	On-site pedestrian provision	As detailed in chapter 6.	Design process	A	Developer
	On-site cycle provision	As detailed in chapter 6.	Design process	A	Developer
	Public Transport Infrastructure	As detailed in chapter 6.	Design Process/Discussion with local operators and key decision makers.	A	Developer/OCC
	Information Communication Technology	Designed into dwellings and community areas to encourage home working, real time information and overall smarter working.	Design process	A	Developer
Construction	Electric Vehicle Charging Points	To be identified if suitable to provide within each dwelling and the employment area.	Design process/construction	R/E/C as appropriate	Developer
	Car Share Spaces	As detailed in chapter 6.	Construction	C and R	Developer
	Construction of Cycle Infrastructure – Showers, Lockers etc	As detailed in chapter 6.	Construction	A	Developer
	Appoint a TPC	As detailed in chapter 6.	Identified to OCC at least three months before onsite sale site opens	A	Developer



Stage	Measure	Description	Implementation	Applicable Land Use*	Responsibility
Pre/Early Occupancy	Sustainable Travel Information	Site specific maps and information. Plus cycling and walking information. Access to a car share scheme and active travel promotions.	To be available before by first occupation.	A - targeted to specific elements	Developer/TPC
	Liaise with local cycle shops.	Gain local information and arrange for residents/employee discount scheme.	As part of TPC role.	A	TPC
	BUDDI Scheme	Pairing individuals to walk/cycle together if further guidance is required.	As part of TPC Role/When demand is evident.	R-C	TPC
	Local Public Transport Information	Bus and Rail timetables would be promoted via the TPC.	From first occupation. Ongoing thereafter.	A	TPC
	Car Share Scheme	Car Share scheme for residents and employees based on site to encourage more sustainable car usage.	From first occupation, ongoing promotion thereafter.	A - specific to each element	TPC/Employers based on site.
	Personalised Travel Planning		Ongoing from first development. This will include the allocation of the relevant travel promotion measure as agreed with OCC.	A - specific to each element as detailed above	TPC
	Walking Bus	Encouraging walking to school	School TPC	E	OCC/TPC
	Launch of Bus Promotion	As agreed with OCC/Developer.	From OCC agreed occupation.	A	TPC/Developer/OCC/Bus Operator
Medium Term	Promotion of Sustainable Travel Days	e.g. Walk to Work Week, Bike Week	From Pre Agreed Occupation.	A	TPC
	Employer Flexibility	To encourage sustainable travel over private car use.	From first commercial occupation/100 th residential occupation.	C	TPC/Employers



Stage	Measure	Description	Implementation	Applicable Land Use*	Responsibility
	Use of ICT	Promoting flexible working, home working, real time information.	Ongoing from first occupation, however TPC to promote the benefits and change overall culture of working practices onsite.	A	TPC/Employers/ Residents/ OCC
	Car Club	Promotion/Launch of onsite car club	If deemed appropriate via OCC/TPC/User discussions	As appropriate. Assumed to include All elements of the site	TPC.
	Launch of BUG	A local group to support cyclist issues. Would be responsible to organise cycle demonstrations and on site activities.	Upon first occupation.	A	TPC/BUG
	Dr Bike	Providing onsite maintenance sessions for residents and employees.	From establishment of BUG.	A	TPC/BUG
Long Term	Car Park Management	Encourage sustainable use of private vehicles. Use the car park management process to ensure that demand is carefully managed and where supply exceeds demand a 'giving back' of car park to the site is completed quickly.	Ongoing from first occupation, with the view that changes are made following survey results and residents, visitor and employee feedback.	C - E	TPC/Developer
	Monitoring	Ongoing monitoring, as set out above.	As specified above and in OCC guidance.	A	TPC/OCC
* A - All Users; C – Commercial; R – Residential E – Educational					





9. References

9.1.1 The following documents have been quoted during this TP:

- Department for Transport and Department for Communities and Local Government (2009), 'Good Practice Guidelines: Delivering Travel Plans through the Planning Process', Queen's Printer. London.
- Department for Transport/National Business Travel Network (2008), 'The Essential Guide to Travel Planning.' Queen's Printer. London.
- Department for Transport. (2004), 'Smarter Choices Report' Queen's Printer, London.
- Department for Transport (2002), 'Making Travel Plans Work'. Queen's Printer. London.





Appendix A

Travel Plan Coordinator Job Description

2 Pages





Travel Plan Coordinator Job Description

POSTS DIRECTLY SUPERVISED:

(All posts under your supervision)

None

DETAILS OF STAFF INDIRECTLY SUPERVISED:

(not employed i.e. Contractors)

None - although management of contracts and contractors will be regular.

Development of processes and procedures for use by transport staff, (managed by others).

SUMMARY OF MAIN PURPOSE OF THE JOB

To develop, implement and drive the Graven Hill Site Travel Plan.

To organise, manage and support transport services initiated by the travel plan.

To strive to maximise sustainable, environmentally-efficient travel and transport strategies.

DUTIES & RESPONSIBILITIES

1. Develop the Graven Hill Site Travel Plan.
2. Implement and encourage initiatives to support and improve staff and residents travel planning arrangements.
3. Plan and introduce sustainable and environmentally-efficient travel and transport operations, and align strategies and activities with local and central government planning and development policies.
4. Communicate with all internal and external stakeholders personally and through the organisation of working groups, focus groups, marketing campaigns and other methods as appropriate.
5. Develop a coordinator's support network to create local travel plan 'Champions'
6. Responsible for car park management.
7. Develop a business case for funding travel plan activities.
8. Responsible for managing and supporting existing transport contracts and services.
9. Other tasks of a similar or supportive responsibility level that is relevant to the role.

ACTIVITIES

1. Develop the travel plan by expanding and merging existing travel proposals and recommendations, where they exist. Where necessary work with consultants to undertake further development. Implement the plan at all levels within the site.
2. Create, develop and implement travel planning initiatives that are suitable for the site. These could include: car-sharing; car club; bicycle usage; walking routes; passenger transport services; promote public transport use; mini-bus use; disability transport awareness.
3. Recommend and plan the introduction of short, medium and long-term initiatives for the implementation of sustainable, environmentally friendly transport services. Understand and maintain an awareness of the implications of Local Authority Unitary Development Plans and Central Government planning and development requirements.
4. Organise staff meetings to present and discuss travel planning issues. Organise support groups for stakeholders. Develop marketing campaigns for the travel plan and its initiatives. Develop a travel planning home page and keep all information up-to-date.



Ability to organise large surveys. Organise the development of a discussion board electronic forum with external stakeholders such as local authority, safety and travel organisations, public transport companies.

5. Appoint and support the development of a site travel plan co-ordinator's network to encourage local 'champions'. Guide them in their roles and drive and support their activities, especially with user and focus groups. Ensure alignment of their duties with corporate travel plan objectives.

6. Develop a business plan for the site travel planning, which recommends initiatives and the financial implications of their implementation.

7. Responsible for developing policies that support:

- Passenger transport service
- Pool vehicle service
- Car hire contract

8. Other tasks of a similar responsibility level as and when required.

KNOWLEDGE AND EXPERIENCE

Essential features

Should be a role model for travel planning initiatives.

Confident with effective communication skills and good presentation skills

A good negotiator with the ability to persuade.

Ability to communicate with people at all levels

Computer literate.

Capable of multi-tasking, a driver of change.

Experience of working within the travel or transport industry, especially with a responsibility for aspects of 'green' travel or travel planning.

Ability to manage own time and workload. Will need to be well organised and be able to undertake and manage own administration.

Desirable features

Previous experience of managing projects.

Marketing skills.

Knowledge of environmental issues and their business perspective.

Relevant transport or travel qualifications.

Knowledge of the transport industry and its regulatory environment



Appendix B

Establishment of Car Share Scheme

Guidance

5 Pages





Promoting Car-Sharing - Sample Action Plan

PRE LAUNCH

	Activity	Person
Technical:	<ul style="list-style-type: none"> Choose database or website your organisation is going to use Demo of site & how it works for company coordinator and IT contacts 	<ul style="list-style-type: none"> Coordinator & IT to liaise Coordinator/ IT/ website supplier to set up site & do demo
Marketing	<ul style="list-style-type: none"> Liaise with senior management about introduction of car sharing to get support (highlighting the benefits) Development of car-sharing policy Brand the scheme, e.g. use Graven Hill Site icon(s) as above or slogan – "Seats spare, car share", "Start the day with a pick-me-up" etc Design permits for car windscreen (e.g. stickers – see below for templates) Update to staff/residents on car-sharing being introduced to reduce pressure on parking, promote ease of access, decrease fuel costs for motorists, be eco-friendly etc. Let people know when scheme is commencing and who to contact with questions. Put posters on display coming up to launch Reserve room/ area for launch day & demo 	<ul style="list-style-type: none"> Coordinator to request sample car sharing policies from OCC Coordinator to liaise with internal communications about branding/ slogan/ communications plan if assistance is needed Coordinator to liaise with Facilities about car sharing permits Coordinator to update staff & senior management OCC to give coordinator car-sharing posters or Design Own Coordinator to field questions from staff Coordinator to book room/ area for demo/ launch day
Facilities	<ul style="list-style-type: none"> Facilities to mark out car-sharing bays (base the number on your employee survey or 10% of parking spaces in the organisation) Security to be briefed on car-sharing policy Staff access cards – anything need to be done with them to monitor/ give access etc? 	<ul style="list-style-type: none"> Facilities to mark out bays Coordinator & Facilities to liaise on car sharing policy & brief for security Facilities to investigate cards



LAUNCH

	Activity	Person
Technical:	<ul style="list-style-type: none"> Organise laptop & large screen for demo of site Request IT person to do demo 	<ul style="list-style-type: none"> Coordinator and IT
Marketing:	<ul style="list-style-type: none"> All staff email or update on intranet/ notice boards etc about launch day – include benefits of car sharing, location of car sharing bays & incentivise with draw for all people registering in the first month. Include contact name for scheme (and ‘hotline’ for important questions arising in first month). Car-sharing posters on display in key locations 	<ul style="list-style-type: none"> Coordinator to arrange sponsored prize Coordinator to put bulletin on intranet/ notice boards, all staff email etc OCC to give posters (or design own)
Event Day	<ul style="list-style-type: none"> CEO or senior representative to speak Senior representative of OCC to speak (with prior arrangement) Coordinator/ Facilities/ IT to speak Set up laptop & large screen for technical demo Organise incentive for staff to attend launch e.g. draw for prize 	<ul style="list-style-type: none"> IT/ Facilities/ Coordinator to liaise re launch format Coordinator to let OCC/Residents/Organisations know dates & brief re who is attending, format etc if speaker is required Coordinator to arrange senior management to speak Coordinator to source incentive for staff turning up to launch



POST LAUNCH

	Activity	Person
Marketing:	<ul style="list-style-type: none"> Put car-sharing policy in easily accessible location for staff & alert them to car-sharing 'etiquette' & FAQs (On intranet Site) Prize draw for all people registering in first month Publicise winner Periodic incentives for car-sharers – e.g. draw for car service, iPod, Bus tickets, reusable shopping bags etc. Consider offering incentives such as a raffle for a half day off if prizes can't be found. Peer profile – 'I car share and save money and time' – put on intranet/ newsletters or posters Include information in induction pack – e.g. this organisation has a car sharing scheme in place & ask 'Are you interested in car-sharing? Where do you travel from? Are you a lift seeker or driver or both? Ongoing updates on intranet/ a newsletter on numbers car-sharing as scheme grows. Invite people to join the scheme by contacting the coordinator. Car sharers coffee morning for interested people and those already driving – when resources permit! 	<p>Coordinator to:</p> <ul style="list-style-type: none"> arrange prize draw put bulletin on intranet/ posters/ newsletters or all staff email source prizes develop page on car sharing for induction packs/ days be contact person for queries organise coffee morning when resources permit
Facilities	<ul style="list-style-type: none"> Add new car-sharing spaces in prime locations as numbers registering for the site increase or as demand is reported Security to periodically monitor car-sharing bays to ensure car-sharers only are using them Facilities to impose sanctions for people parking in car-sharing bays As car sharing numbers increase and release car parking spaces, re-designate spaces for motorcycle & bicycle parking instead 	<ul style="list-style-type: none"> Coordinator/ Facilities to monitor number of users Security to monitor bays Coordinator/ Facilities to decide sanction for parking in car-sharing bays Facilities to re-designate spaces
Reporting	<ul style="list-style-type: none"> Update senior management/OCC on car sharing numbers – reducing pressure on parking, 'green' profile, freeing up land under parking for development, reducing congestion Invite feedback from car sharers on how to improve the scheme & implement 	<ul style="list-style-type: none"> Coordinator/ Facilities



Sample Parking Permit



Organisation Logo

Permit Number:

Car Driver:

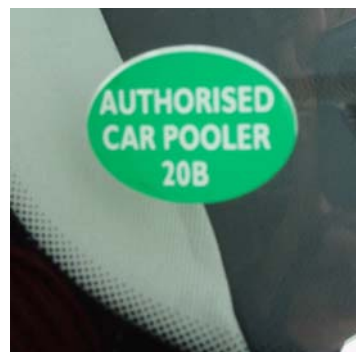
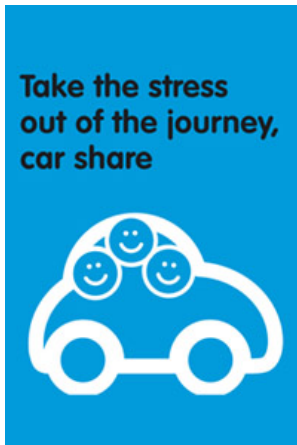
Passengers:

Car Park:

Valid from/to:



Sample Signage





Appendix C

Example Travel Survey

4 Pages





Graven Hill Travel Survey - Commercial

As part of our travel plan, we are undertaking a travel survey. This will allow us to better meet your needs and give you an opportunity to comment on some of the current schemes in place. All information is strictly confidential and will not be used for any purpose apart from that specified above.

*Please submit your reply no later than **5pm on Friday 30th March 2018.***

Many Thanks.

- 1) What is your home postcode? _____
- 2) Are you - Male _____ Female _____
- 3) Which company do you work for? _____
- 4) What time do you normally arrive at work? (please tick)

Before 07.29	07.30 - 08.00
08.01 - 08.29	08.30 - 08.59
09.00 - 09.29	09.30 - 10.00
Other - (please specify)	

- 5) What time do you normally leave work? (please tick)

14.00 - 14.59	15.0 - 15.59
16.00 - 16.59	17.00 - 17.29
17.30 - 17.59	18.00 - 18.30
Other - (please specify)	

- 6) A) Is your work (please circle)

Part Time

Full Time

- B) If Part Time, please specify how many days you work per week



7) Over the last 7 days, how did you travel to work? (If you travelled by more than one mode of transport, please only show the main part of your journey).

Mode	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Bus							
Bicycle							
Car (as driver, alone)							
Car (as driver, with passengers)							
Car (as passenger)							
Foot							
Motorbike							
Train							
Other (please specify)							

8) How do you travel to work if your normal mode of transport is not available? (please tick)

Bus	Bicycle
Car, as driver, on your own	Car, as driver, with passengers
Car, as passenger	Foot
Motorbike	Train
Other, (please specify)	



- 9) If you are travelling between your home and work, how easy/difficult do you think travel by the following modes is?

	Very Easy	Quite Easy	Quite Difficult	Very Difficult	Not Possible
Walking					
Bus					
Cycling					
Car Share					
Train					

- 10) Which of the following changes would most encourage you to walk or cycle to work?

On-site lockers	Showers and Changing Facilities
Bike Parking	On site cycle routes
Another cyclist to show you good cycling facilities.	Dedicated cycling tracks between home and the site.
Other, (please specify)	

- 11) Which of the following changes would most encourage you to use public transport to or from work? (please select no more than 3)

Better quality bus waiting facilities	Bus/Rail Information, easily available
Reduced-cost staff pass on public transport	Services better time to working hours
Additional Bus Routes/Services	Other (please specify)

- 12) Are you a member of the Graven Hill Car Share scheme?

Yes

No

- 13) If Yes, How often do you car share? _____

- 14) How many business trips have you made in the last month?

- 15) How did you travel to these meetings? (please specify)



[illegible]