

Figure NTS 5 Phasing plan

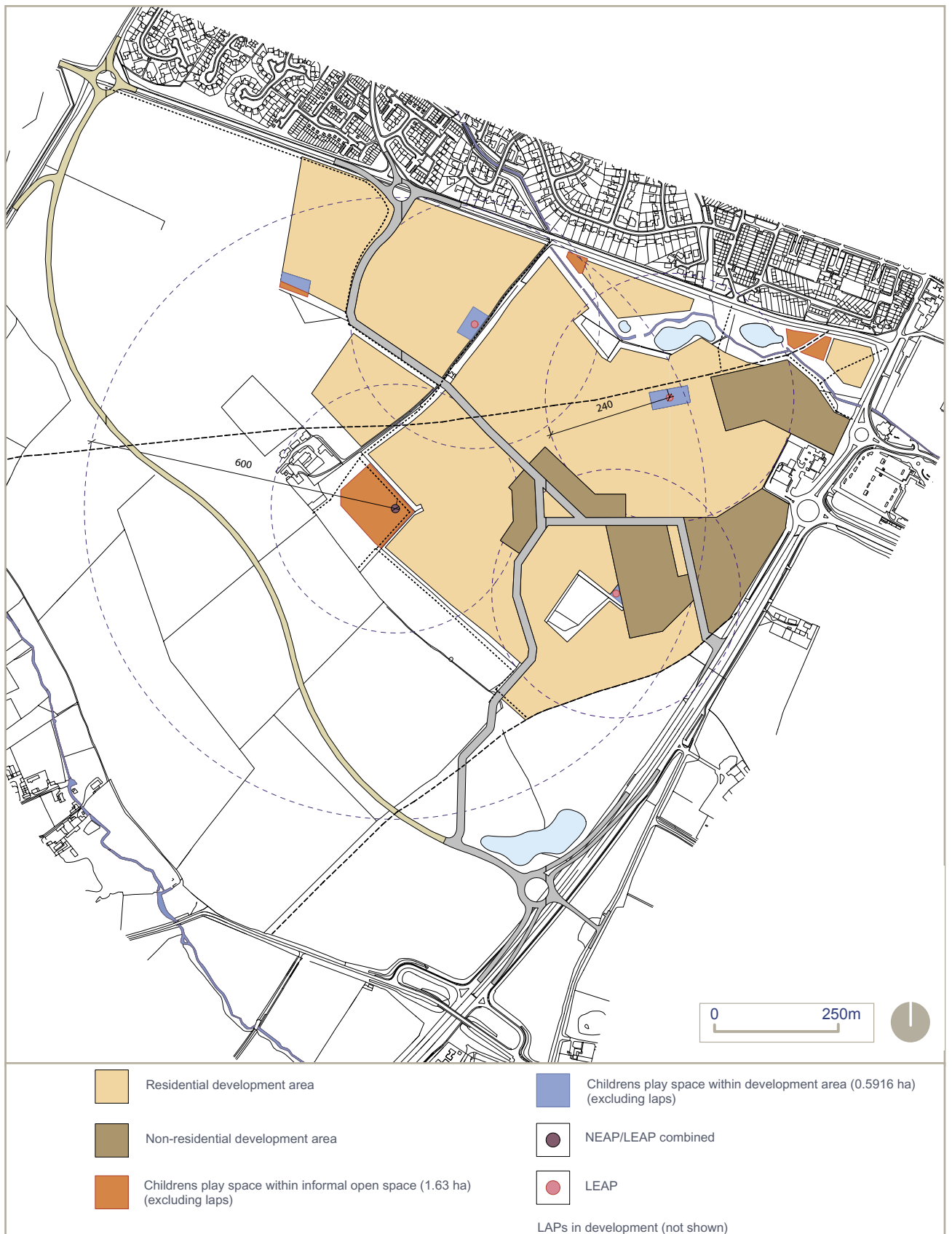


Figure NTS 6 Children's play areas

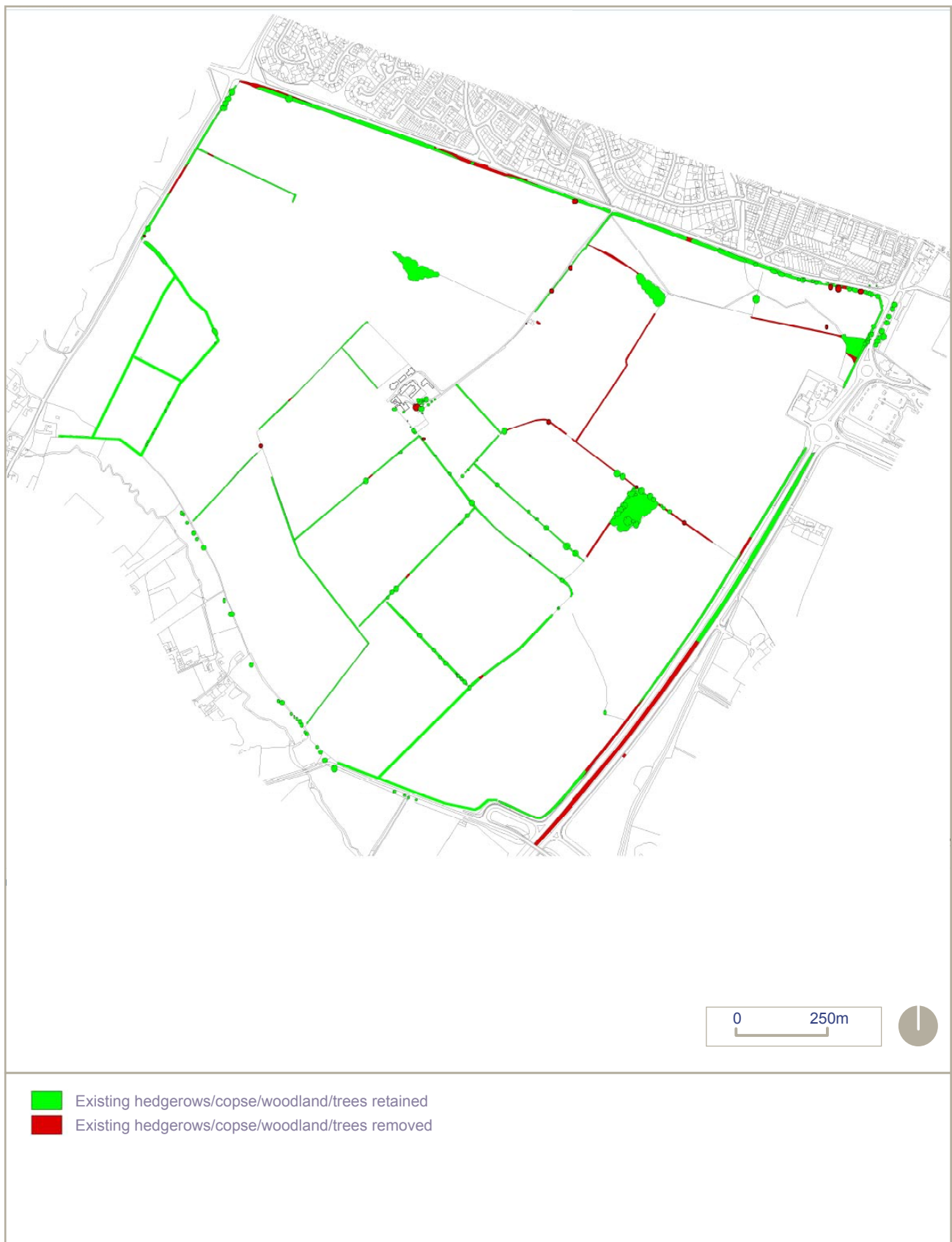


Figure NTS 7 Tree removal and retention

Environmental effects

The following sections summarise the significant environmental effects of the proposals.

Cultural heritage

- NTS 12 A detailed cultural heritage assessment was undertaken for the proposed development. **This involved aerial photography analysis and a geophysical survey, with an agreed level of target trench evaluation based on these results. All three methods have shed a new light on the true archaeological resource on Whitelands Farm.**
- NTS 13 There are no scheduled ancient monuments (SAMs), listed buildings or conservation areas within the site, but there are examples in close proximity. The largest concentration of listed buildings is in the village of Chesterton, which is a designated conservation area. An area of agricultural land will be retained to the south of the perimeter road, and this will ensure that impacts to the setting of the built environment in Chesterton are minimised. The north-eastern corner of the proposed development site is sufficiently distant from the boundary of the Bicester town centre conservation area not to affect it. The proposal to link the A41 with the B4030 road along the western boundary of the site will effectively remove or reduce current traffic movements on Alchester Road through the village of Chesterton. This may have a beneficial effect on the setting of the listed buildings and disturbance experienced in the conservation area from road traffic.
- NTS 14 Certain areas along the eastern side of the site have been the subject of archaeological evaluation. There are eight archaeological sites/findspots listed within the boundary of the proposed development. Investigations in the north-eastern area uncovered evidence of a late Iron Age/Romano-British farmstead settlement of local or county importance. A settlement of similar date and size, which may be an extension of this farmstead, was uncovered immediately to the east during pre-construction investigations at Bicester Village Outlet Shopping Area. **The immediate area has a rich archaeological heritage, with the SAM of the Roman Town and Fort of Alchester lies 700m to the south-east of Whitelands Farm.**
- NTS 15 As a consequence, it would be expected to uncover associated finds, archaeological features and sites from at least the Roman period on the site. The site has been the subject of intensive farming practices for several generations, and has been utilised as open arable land for several hundred years, as map sources have shown. The occurrence of ridge and furrow in the centre of the site is proof of these practices. In addition to a desktop assessment, an archaeological study of aerial photographs of the site was carried out. This report identified a complex network of overlapping cropmarks attributable to a number of archaeological sites from several prehistoric periods. Modern agricultural methods have been intensive in these areas and therefore surface traces of monuments have been demolished and swept away.
- NTS 16 **The geophysical survey also highlighted evidence of ring ditches which are the ploughed out below ground remnants of Bronze Age ring barrow monuments. Wessex Archaeology successfully uncovered the remains of both ring ditches, which as a consequence of their excellent state of preservation are considered worthy of**

preservation in situ. The intention is to impose a 50m buffer around these two sites to ensure no infrastructure works take place that would damage these remains of national importance. Based upon recommendations issued by Oxford County Council Archaeologist the associated playing fields for the adjacent primary school are now proposed to overlie these burial monuments, thereby ensuring an extensive area of managed green space.

- NTS 17 The remaining features uncovered in this scheme of evaluation trenching as well as during previous applications can be dealt with through an agreed level of preservation by record when more detailed pre-construction information on the design and build of the various infrastructure elements is known. Close consultation with Oxford County Council Archaeologist will ensure an adequate level of excavation (recording) is imposed.
- NTS 18 Due to the extensive amount of archaeology uncovered during all schemes of investigative assessment at this site, it is recommended that provisions are implemented to ensure that archaeology be a primary consideration in the future engineering and management plans for these proposals.
- NTS 19 The findings from all phases of the development should be disseminated to the local population in the form of articles in local publications and as part of public presentations to explain information gained from the evaluation and any further excavation work. Provisions can be made for copies of the site record in the primary and secondary school sites to ensure future dissemination.

Hydrology and water quality

- NTS 20 The potential hydrological effects of the development include changes to the availability of water resources and water quality (both in the ground and on the surface), the potential to pollute water, and changes to water dynamics in terms of flow, and source control with reference to flood potential.
- NTS 21 The site and its locality include three watercourses (Pingle Brook, Gaggle Brook and an unnamed watercourse) and a number of field drains. An assessment of the current conditions at the site has been carried out through site visits and analysis of maps and data from statutory authorities.
- NTS 22 Post-construction effects to groundwater are not likely to be significant as measures will be taken to mitigate any possible effects. The design of the sustainable drainage system and pollution prevention and control measures will ensure that the development does not affect groundwater. Infiltration SUDS will be incorporated into the development and will ensure that local aquifers are unaffected by the development.

Land use

- NTS 23 The impact of the proposals on the land uses at and surrounding the site has been examined. The site is mainly agricultural land including arable and pasture fields. Hedgerows separate the fields and there are also **four** small areas of woodland on-site. Pingle Brook lies in the north-east corner of the site. The site includes two residential properties known as Whitelands Cottages and two footpaths cross the site.
- NTS 24 Adjacent land uses include the housing area north of Middleton Stoney Road and the A41, Oxford Road borders the site to the east. There is a petrol garage and restaurant to the north-east immediately adjacent to the site. Further to the north-east is a Tesco superstore, public house, the Bicester Village Outlet Shopping Area and the Bicester town football and rugby clubs, and Bicester town centre is 1km away.
- NTS 25 To the west of the site is the Whitelands Farm complex, which includes the farmhouse and outbuildings and agricultural land. Further to the west is Bignell House and Lodge, and Bignell Park Hotel is situated to the south-west of the site. To the south of the site is an area of agricultural land and Gagle Brook. South of Gagle Brook lies the village of Chesterton.
- NTS 26 The construction of the residential development, schools, hotel and local centre will lead to the permanent loss of agricultural land and this change to land use represents an adverse effect of moderate significance. The loss of agricultural land will also reduce the size of the remaining land holding of Whitelands Farm. This change will result in an adverse effect of moderate significance.
- NTS 27 The two residential properties on-site, Whitelands Cottages, will be lost to the proposals and this is an adverse effect of slight significance in land use terms. Pingle Brook will also be realigned and this is an effect of slight significance, which has been classed as neutral as it is neither adverse nor beneficial.
- NTS 28 There will also be a short-term land use effect associated with the possible temporary closure or diversion of the footpaths that cross the site during the construction work.
- NTS 29 The proposals will introduce new land uses to the site, primarily the mixed use development and associated highway works. This proposal is supported by planning policy and is considered to be a beneficial effect of moderate significance.

Landscape and visual effects

- NTS 30 Field studies and desk studies of photographs, maps and local plans were used to evaluate the landscape in and around the site and to identify views and visual receptors which could potentially be affected by proposal. A number were selected to present typical views from important locations and to provide a representative selection of views from all relevant directions. The proposals were described in terms of their physical effects on the landscape and their visual appearance. The effects on landform and existing landscape features such as vegetation were also included.
- NTS 31 The existing character of the site and surrounding area is arable farmland. There are two settlements nearby, Bicester to the north-east and the village of Chesterton to the south, both of which include listed buildings and are designated conservation areas. The site has road boundaries to the west, north and east. The eastern boundary is the A41 Oxford Road, linking Bicester to the M40. The site is visible from areas of the surrounding land, which falls into the two main categories of landscape of Wooded Estate lands and Clay Vale. Important visual receptors have been identified as residents on the edges of neighbouring settlements, users of the local road network and public rights of way, and users of the local services (hotel, sports ground and outlet village).
- NTS 32 The proposals will see the addition of buildings of two, three or four storeys, and a perimeter road. The potential landscape and visual impacts of the proposals have been considered from the outset of the development's design. The use of sympathetic building materials, layouts and heights, proposed planting and lighting will minimise unnecessary and unintentional visual impacts.
- NTS 33 The assessment found that the proposals will have a substantial adverse impact on the landscape character of the site. This is principally due to the loss of agricultural land. New woodland, copse and hedgerow planting, designed to mirror the existing landscape framework, will result in a net increase in site vegetation. Once the new planting has established, it has been assessed that the impact on the landscape character of the site will reduce from substantial to moderate.
- NTS 34 Visual impacts associated with the development are mostly confined to the local area. The assessment found that the proposals will have a substantial adverse impact on views from the users of the rights of way crossing the site, and from the south east corner of the site, where a gap in the hedgerow allows a direct view of the perimeter road. In other locations, a combination of topography, existing vegetation and the quality of the existing view has meant that only moderate, slight or no impacts were assessed.

Noise and vibration

- NTS 35 Noise levels resulting from the proposed development are an important issue for many living within the vicinity of the site. Those who may be concerned about the noise generated by the development are likely to be in the residential areas to the north of the site.
- NTS 36 Baseline studies have identified that the current dominant noise source within the area is traffic. The daytime road traffic noise generated by the A41, King's End and Middleton Stoney Road results in a poor noise environment.
- NTS 37 The impact of the future noise levels was predicted using computer modelling. The future noise levels (for 2014) were considered both with and without the proposed development. The continued natural growth in traffic volumes without the proposed development is predicted to increase the noise levels. In noise terms, the "with" development scenario leads to no significant changes in levels from traffic sources.
- NTS 38 The development proposal includes the creation of alternative traffic routes, which may disperse the source and alleviate the existing noise impacts in some locations. The only significant permanent noise effects of the proposed development on local residents are beneficial.
- NTS 39 Due to the nature of building processes it is inevitable that a temporary increase in noise will be experienced during the construction phase. It is anticipated that there will be short-term noise levels implications for nearby residential properties. These effects have been assessed as being moderately significant, but well within acceptable construction levels.

Social and community effects

- NTS 40 The social and community assessment has examined the impact of the proposals on the local community including the existing population, housing provision, economy, recreational and community facilities and local services such as health facilities.
- NTS 41 During the construction phase, the main effect on the local community will be the increase in jobs generated by the development. The construction phase is likely to last seven years. The increase in jobs will be a short term beneficial effect of the proposals of moderate significance.
- NTS 42 There will be a change to the operational area of Whiteland Farm due to the loss of agricultural land. The remaining farm area will be larger than both UK and EU average farm sizes, but it will not provide enough work for full time employment. The farm will be viable either to provide a living to a working owner-occupier, or to provide a profitable net income to a landowning company if farmed by outside contract. An owner-occupier would have spare time during the quieter periods of the farming year either to gain employment elsewhere or to pursue some other diversified opportunity. Alternatively, the farm may be run by outside contract, which is now a relatively common practice. The farm's business will continue in the future. The change to the landholding of the farm will result in an adverse effect of slight significance.
- NTS 43 The new residential development will increase the supply of market housing in Bicester. There is a need for this additional housing and this is supported by planning policy. This will result in a beneficial effect of substantial significance. Of the 1,585 units, 30% will be affordable housing. This increase in housing is also a beneficial effect of substantial significance.

NTS 44 The proposals include a primary school, land reserved for a secondary school and a second primary school. The provision of these education facilities will benefit the wider population of Bicester and add to the existing facilities in the town. This represents a beneficial effect of moderate significance.

NTS 45 Land has been designated for a nursing home and health village option. This represents a long term beneficial effect of slight to moderate significance.

NTS 46 The proposals will also provide additional formal sports provision to meet the development requirements and also to provide for the existing deficit in the town. The additional facilities will therefore benefit the wider population of Bicester and this represents a beneficial effect of substantial significance.

NTS 47 The post-construction phase of the development will create permanent employment opportunities within the new schools, medical facilities, shops, pub, hotel and other employment areas.

NTS 48 The new community centre has been deliberately sized not to compete with the existing town centre, so the increase in population will indirectly boost the local economy through increased spending within the Bicester area.

Traffic and transport

NTS 49 The traffic and transport assessment sets out the development's key implications for the Bicester local highway network (focusing on the A41 and Middleton Stoney Road), and environmental effects in respect to driver delay, severance (perceived division of communities by transport routes) pedestrian provision and accidents and safety. The impacts are considered in both the construction and post-construction phases.

NTS 50 During the construction phase of the main development the predicted changes in traffic levels are negligible and the impact is deemed to be insignificant. In the initial phase of development, construction vehicles will be using Middleton Stoney Road as the access point. An increase of 1-2% in traffic flow is expected, with most vehicle movements being made outside peak periods. The construction of access junctions on A41 Oxford Road and Middleton Stoney Road is predicted to cause disruption in the transport network, with the most significant impacts being to the travel time of drivers.

NTS 51 Development of the proposed new/improved junctions will ensure that the local highway network functions well, and although a slightly significant adverse impact will result from the increased traffic flow following the development's completion, all roads and junctions will be operating well within their design capacity.

NTS 52 The transport strategy drawn up for the proposed development includes opportunities to extend the bus network to incorporate the site, linking the area with the national transport routes. This would involve the diversion of two local services through the centre of the new development and the promotion of the existing frequent A41 Oxford Road bus services.

NTS 53 Provisions have been made to minimise the disruption that the development will cause to pedestrians and cyclists. The construction of segregated rights of way, wider pavements and crossing facilities will have beneficial impacts on pedestrian and cycle safety.

NTS 54 To the south of the site is a proposed park and ride site. This is not within the planning application and not considered within the scope of this ES. Provision has been made for access to the park and ride via the new A41 roundabout and perimeter road.

Air quality

- NTS 55 The site lies in a non-industrial area of Bicester, so traffic and transport have the biggest influence on the air quality of the area. The proximity of the site to the A41 and M40 has a significant impact on the air quality of the locality.
- NTS 56 Local air quality was identified as an area of possible concern in relation to the potential dust generation during construction, and traffic emissions during construction and post-construction phases.
- NTS 57 The construction phase has the potential to generate dust, the application of dust suppression mitigation measures will ensure that the any deposition will be within acceptable levels and have no significant impact.
- NTS 58 The re-routing of the local transport network and consequent, changes to vehicle speeds and traffic composition will **result negligible changes in air quality for all receptors used in the assessment.**

Ground conditions and contamination

- NTS 59 The potential for the site to be contaminated needs to be assessed prior to development, both to establish the baseline and to indicate any remediation work required before commencing construction
- NTS 60 Field surveying (including trial pits and borehole) combined with a desk study showed the site's underlying geology to be Jurassic rocks with some overlying alluvium deposits. There are three areas of made ground within the site boundary: these are thought to have been quarries subsequently infilled with clay, peat, clinker and gravel.
- NTS 61 The majority of the site has been historically used for agriculture, and there is no record of contaminative use, with the exception of an ash-filled quarry in the north-west corner and a petrol station on adjoining land to the east. The potentially contaminating activities of Whitelands Farm (silage, animal waste and farm fuel storage) and the petrol station are outside the proposed development site and are not thought to have caused any onsite contamination.
- NTS 62 Remediation action will be undertaken (where appropriate) prior to the construction phase to address the potential contamination of the site. Personnel undertaking this work have been identified as a sensitive receptor and may be at risk from contact with the contaminated material. The use of appropriate equipment and procedures will reduce any effects to negligible. During construction, mitigation measures will be taken to ensure that no contamination will be generated and no significant effects will result.

Natural heritage

- NTS 63 The land south-west of Bicester is farmland dominated by arable with several fields of improved grassland and three small, field corner, nineteenth century broad-leaved woodland plantations. In the context of this low ecological interest, of local value are:
- Pingle Brook, a limestone watercourse that supported water voles in 2004
 - hedgerows, many of which are species-rich in woody species, though not in their ground flora, with frequent mature ash and pedunculate oak with bat roost potential
 - moderately species-rich neutral grassland east of the A41 in an abandoned field, succeeding to scrub
 - species-poor calcareous grassland in the north-east of the site over a small, abandoned limestone quarry
 - the butterfly white-letter hairstreak breeding in a hedge on the site
 - protected species interest through a brown long-eared bat night time roost in farm out-buildings, foraging by three other widespread bat species, an outlier badger sett and habitat for common lizard, slow worm and grass snake
 - moderate breeding populations of a number of common and widespread, but declining, farmland bird species, on the red list of birds of conservation concern.
- NTS 64 The proposal would result in the loss of some arable, improved grassland, hedges and hedgerow trees. Ecological mitigation will be carried out in areas designated as informal open space in the master plan and a long term management plan will be complimented. These are grassland and rush pasture around Pingle Brook, which will also receive **three** permanently wet balancing ponds, a further 1ha permanently wet balancing pond and the grassland south-east of Whitelands Farm, which will be subject to limestone grassland creation.
- NTS 65 The residual positive effects of the proposal will be the larger area of limestone grassland and improvement in habitat quality and extent for water vole. **The replanting and management of hedgerows and wooded areas will have moderate beneficial effects.** There will be slight benefits to breeding reptiles and some red list farmland bird species. Residual negative effects are reductions in the extent of species-rich hedges, the extent of foraging habitat for badgers and the population size of three red list bird species dependent on arable land.

Waste

- NTS 66 The amount of waste generated by the proposals during construction and post-construction has been examined. Consideration has been given to the amount of construction and demolition, industrial and household waste that is generated by Oxfordshire and the South East region and the predicted levels that will arise from the proposed development.
- NTS 67 There will be an increase in waste during the site preparation and construction activities. Where possible, materials will be reused or recycled and the amount that will be sent to landfill is not considered to be significant.
- NTS 68 Post-construction, waste would be generated by the mixed use development. There is a high recycling and composting rate in Oxfordshire and this will reduce the amount of waste that will be disposed of to landfill. There is capacity at the local waste management facilities in the district and no significant effects have been predicted.