# Gavray Drive West
## BICESTER

## ENVIRONMENTAL STATEMENT
## NON-TECHNICAL SUMMARY

April 2015

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GALLAGHER
ESTATES

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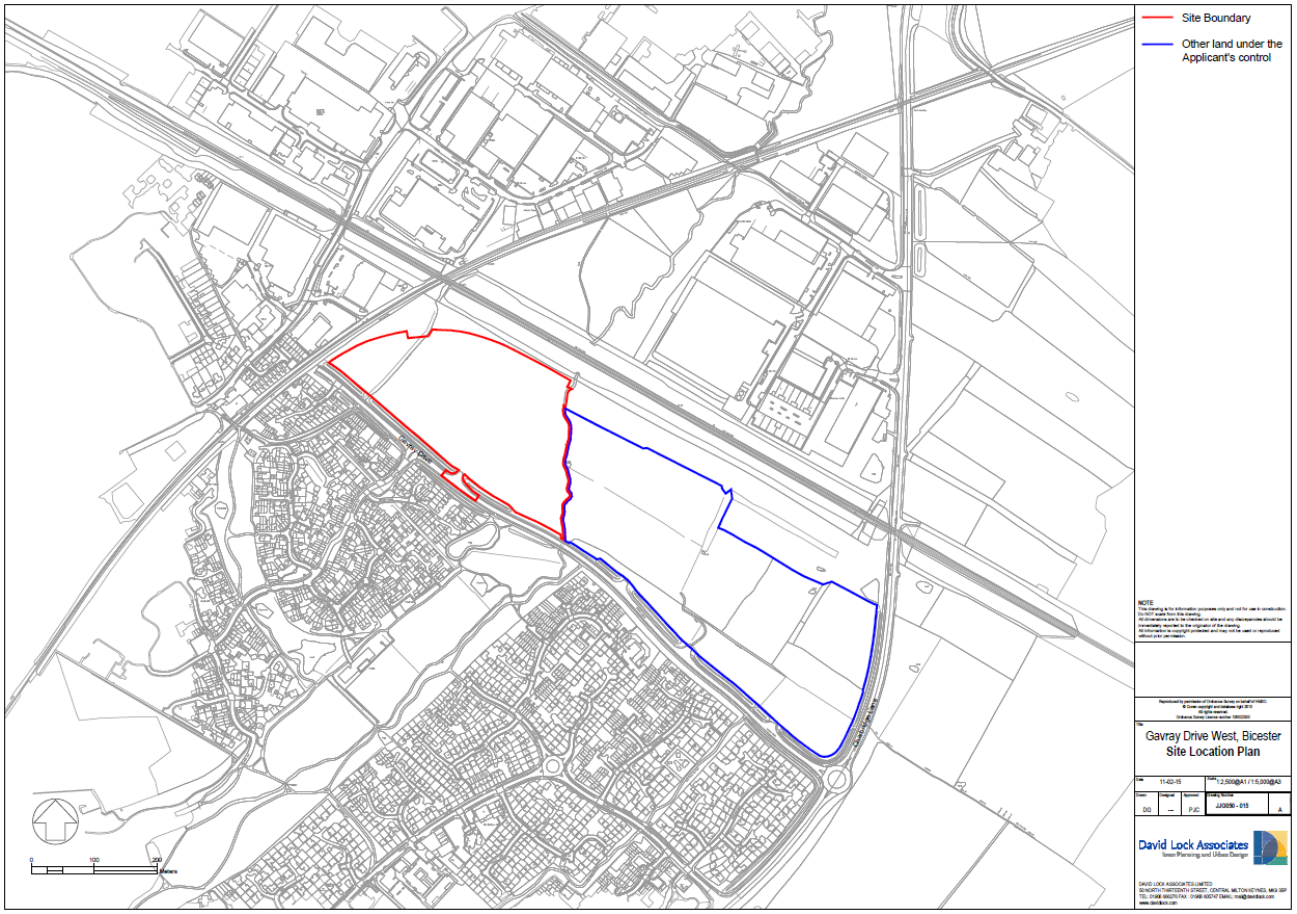
## 1. INTRODUCTION

1.1 This document summarises the findings of an Environmental Impact Assessment (EIA) of a housing development on land at Gavray Drive and west of the Langford Brook. The following plan shows the location and the detailed boundary of the Proposed Development.




1.2 The purpose of an EIA is to assess the likely significant environmental effects of a development proposal. These effects have been assessed as "adverse" or "beneficial"; and of "major", "moderate", "minor" or "negligible" significance, in accordance with recognised EIA methodology and applying professional judgement.

1.3 The "significance" of each effect takes into account both its "magnitude" and the "sensitivity" of the receptor affected. For example, a change of "large" magnitude affecting a receptor of "high" sensitivity would generally result in an effect of "major" significance. Conversely, a change of "small" magnitude affecting a receptor of "low" sensitivity would generally result in an effect of "minor" significance.

1.4 The full findings of this EIA are reported in an Environmental Statement (ES). The ES is available on Cherwell District Council's (CDC) website and can also be obtained on request from:

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1.5 This concise document summarises the main findings of the ES in non-technical language, for a wide readership.

1.6 The ES supports an Outline Planning Application (OPA) to Cherwell District Council for the Proposed Development. Comments on it should therefore be directed to Cherwell District Council, as part of its consideration of the OPA.

## 2. THE SITE AND THE PROPOSED DEVELOPMENT

2.1 The site location plan identifies the boundary of outline planning application. It is 6.9 hectares in extent. The Site is located close to the town centre and north of Langford Village. It is clearly delineated by the new rail chord. Gavray Drive is the southern boundary with Langford Brook defining the eastern boundary.

2.2 The wider context for the Site is of employment development to the north and west - beyond the rail lines. Langford Village is located to the south with the remaining section of the Gavray Drive allocation to the east. Gavray Drive connects to the A4421 via a roundabout junction.

2.3 Part of the Site lies within the River Ray Conservation Target Area, and part lies within flood zones 2 and 3. A public footpath crosses the northern part of the site. No built development is proposed in the Conservation Target Area or floodplain.

2.4 The Proposed Development forms part of Cherwell District Council's proposed allocation for 300 homes at a wider site at Gavray Drive. This is set out in the Schedule of Proposed Main Modifications to the (Submission) Local Plan (August 2014) and specifically under draft policy Bicester 13.

2.5 Land east of Langford Brook does not form part of this planning application. This application comprises land west of Langford Brook only.

2.6 The Proposed Development is for:

*Residential development including affordable housing, public open space, localised land remodelling, compensatory flood storage and structure planting.*

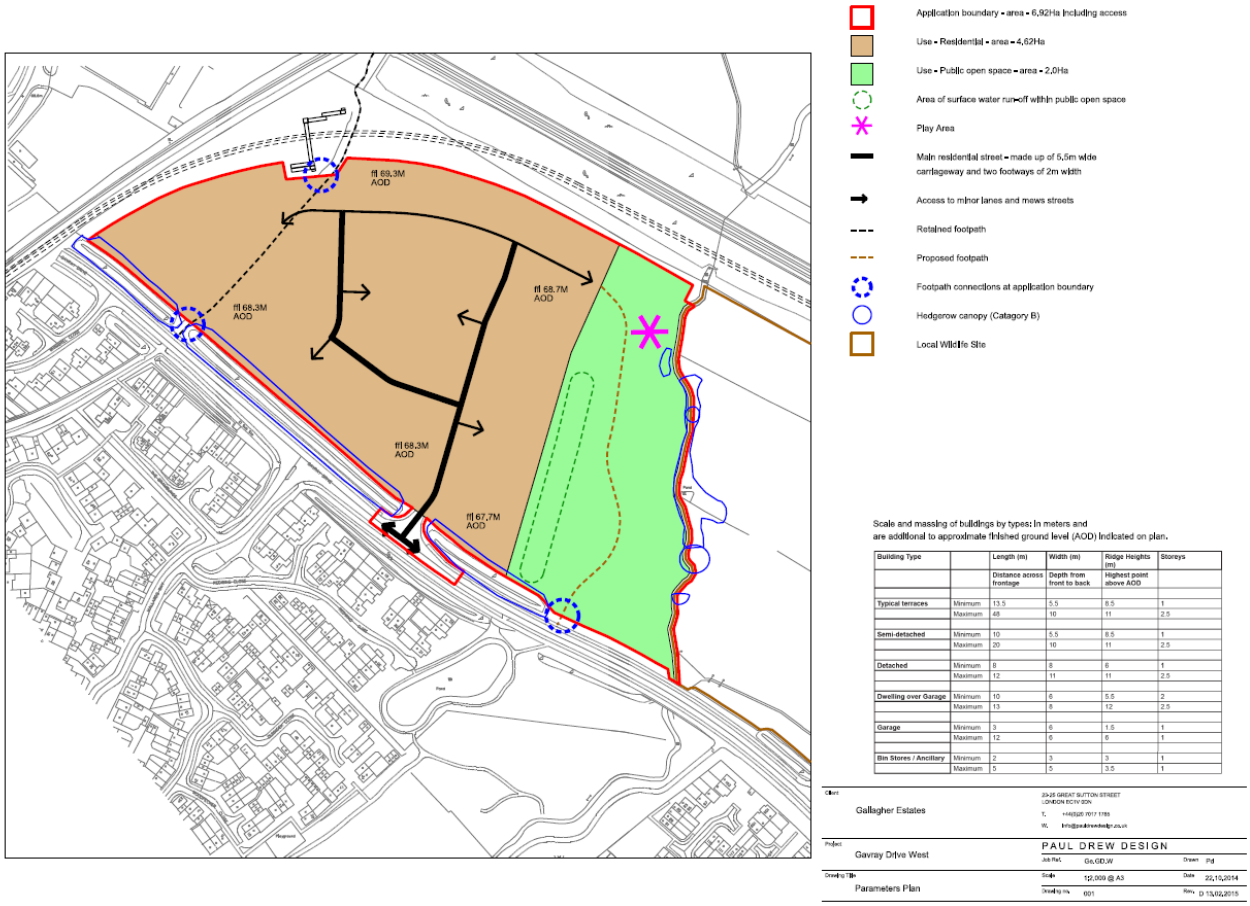
2.7 The EIA assessed the impacts of up to 180 new homes. The Proposed Development will include a mix of 1-4 bedroom properties, including terraces, semi-detached and detached properties and some apartments. Houses will be mainly 2 storey in height, with some 2.5 and perhaps 3 storey dwellings.

2.8 Provision will be made for affordable housing, with a mix of tenures encouraging a balanced community. The amount, type and tenure of affordable housing will be subject to negotiation with CDC. Draft Local Plan Policy BSC 3 seeks a target of up to 30% affordable homes, 70% of which are to be social rented affordable dwellings and 30% other types of intermediate affordable homes.

2.9 The EIA assumes that the construction stage would last some 3 years. Following reserved matters applications and discharge of conditions applications, it is likely that construction could begin in late 2016/2017. It is assumed that construction would be complete in 2020.

2.10 Outline Planning Permission and means of access is sought at this stage. Detailed design is reserved for later agreement by Cherwell District Council.

2.11 The following Parameter Plan has formed the basis for the EIA. The detailed design would be consistent with this overarching Parameter Plan. This conformity would be secured by appropriate conditions attached to any grant of Outline Planning Permission.



*Planning Policy Context*

2.12 The adopted Cherwell Local Plan 1996 identifies the land as being committed for employment development as part of a wider allocation for both land west and east of Langford Brook.

2.12 The Non-Statutory Cherwell Local Plan 2011 indicates part of the site as B1 employment development under policy EMP1, part of the site reserved for a multi modal transport interchange, and part as proposed recreation use (adjacent to the watercourse).

2.13 Cherwell District Council submitted a new Local Plan to the Secretary of State on 31 January 2014 for Examination. The Council consulted on Proposed Modifications to the Plan including allocating the land for housing in the autumn of 2014. The Proposed Modifications were submitted to the Secretary of State for Communities and Local Government on 21st October 2014. Main Modifications 89, 90 and 91 proposed the inclusion of new policy Bicester 13 in the plan, identifying this land and land to the east as a proposed strategic housing allocation for 300 dwellings.

## 3.0 CUMULATIVE ASSESSMENT

3.1 The EIA has had appropriate regard to the likely future existence of the wider proposed development within Bicester. In particular, the transport assessment takes account of modelling of the traffic effects of the Proposed Development in conjunction with other elements of the proposed Bicester allocations.

3.2 The Illustrative Cherwell Submission Local Plan (October 2014) comprises the emerging policy framework for Bicester, setting out proposed allocations in the town. The EIA has taken into account various major development projects in the area which, in conjunction with the proposed application site development, could collectively impose a significant impact on the environment.

3.3 All chapters have considered the following housing schemes:

| | Permissions Granted a 31 March 2014 | Local Plan; New Allocation 2014-2031 | Total Projected Supply 2014-2031 |
|---|---|---|---|
| North West Bicester | 393 | 2900 | 3293 |
| Graven Hill | 0 | 2100 | 2100 |
| South West Bicester Phase 1 | 1362 | 100 | 1462 |
| South West Bicester Phase 2 | 0 | 726 | 726 |
| South East Bicester | 0 | 1500 | 1500 |
| Gavray Drive (this includes land east of the Langford Brook) | 0 | 300 | 300 |
| Talisman Road | 125 | 0 | 125 |

3.4 These developments are set out in the Local Plan Housing Trajectory 2011-31 (Cherwell District Council). This shows the projected supply of housing in the period up to, and beyond, the estimated completion of the Gavray Drive West site in 2020. Where relevant, the potential cumulative environmental effects of these developments with the Proposed Development have been assessed.

3.5 In addition, CDC's employment trajectory (2011-2031) identifies allocated land that is expected to provide for employment uses within the Plan period. This comprises:

- Bicester Business Park (29.5 ha)
- Bicester Gateway (18 ha)
- Land at North East Bicester (15 ha)
- South East Bicester (40 ha)

3.6 Each chapter sets out which sites have been considered in terms of the cumulative impact, and where excluded, the reasons for this.

## 4.0 SOCIO-ECONOMIC EFFECTS

*Effects*

4.1 During construction the likely significant effects of the construction works upon job creation and expenditure would be temporary, of local scale and of moderate beneficial significance.

4.2 The effect of the population increase, is considered to be permanent, of local to regional scale (but primarily local) and of major beneficial significance. There will be more residents within Bicester as a result of the development who will contribute to the labour market generate and support the local and national economies, which is a significant factor as part of the EIA.

4.3 Both the direct and indirect effects of the Proposed Development on the local and regional housing market will be permanent, of local and to some extent regional scale and of moderate beneficial significance for the long term development of the area. As the development will meet local demand from households for dwellings the significance from an EIA perspective is significant to a small extent.

4.4 The effects of the Proposed Development on the local labour market are assessed as being permanent, of local scale, and of moderate beneficial significance. No jobs are being created on site but the development will generate a substantial labour market.

4.5 In terms of education, it is expected that the new development will have permanent effects, of local scale and of moderate beneficial significance. There is no onsite provision of primary or secondary education, but there is capacity in the local area to accommodate the numbers of both primary and secondary school children.

4.6 The effects of the Development upon health are expected to be permanent, of local scale and of minor beneficial significance. The population increase does not warrant new services to be provided on-site or elsewhere.

4.7 Although the Proposed Development results in an overall loss of on-site open space, the quality of the public open space to be provided will be much greater than what currently exists and will be made available to the public which is not currently the case. The public open space to be provided is considered to be a permanent effect of local scale and moderate beneficial significance to existing and future residents, users and visitors.

4.8 No on-site community facilities are proposed as part of this application, however the nearest community facilities are located at Langford Village, approximately 975m on foot using local footpaths or 1.5km driving. Overall, the effects of the Proposed Development on community facilities are expected to be permanent, of local scale and of neutral significance.

4.9 The effects of on the existing local centres, superstores, Bicester town centre and Bicester Shopping Village are likely to arise from additional money being spent at these

locations, therefore the effects can be considered to be permanent and of moderate benefit, and of a local scale. The new dwellings will contribute towards maintaining the viability of the retail provision in Bicester as the Site is well-served.

4.10 During the construction of the Proposed Development there might be the need for security fencing or other measures to provide required safety. It is considered that the Proposed Development would have permanent, local to the development and of minor beneficial effects on crime and public safety both for the development and its surroundings.

*Mitigation Measures*

4.11 The socio-economic effects of the Proposed Development will be beneficial during both the construction phase, as well as after completion.

*Residual Effects*

4.12 Effects of the Proposed Development will be predominantly beneficial.

*Cumulative Effects*

4.13 Given that the effects arising from the Proposed Development will not be significant, the same will be true for its cumulative effects with other schemes in the area.

## 5.0 TRANSPORT

*Effects*

5.1 Likely significant transportation and access related effects that may arise from construction include:

- an increase in vehicle movements associated with construction staff accessing the site;
- an increase in proportion of daily Heavy Goods Vehicle (HGV) movements within the local highway network along routes that construction vehicle are most likely to use;
- a reduction in amenity and safety for pedestrians and cyclists.

5.2 The volume of additional HGV traffic relative to existing traffic flows and HGV proportions, will result in a moderate / minor temporary adverse effect on Gavray Drive.

5.3 As there are existing footways away from the carriageway edge, the magnitude of effect on pedestrian amenity and safety is considered to be a minor temporary adverse effect. Cyclists benefit from off-road cycle routes running parallel with Gavray Drive and the A4421 and so the magnitude of effect on cyclist amenity and safety is a minor temporary adverse effect.

5.4 The additional traffic during operation will result in a moderate long term adverse effect on Gavray Drive which is considered significant, but with all other receptors having a minor adverse effect which is not considered significant.

5.5 The increase in bus patronage will result in a minor long term adverse effect based on the receptor having a low sensitivity to change.

*Mitigation Measures*

5.6 A number of measures will be implemented to mitigate the general effect of additional construction vehicles, which will be finalised within a Construction Environmental Management Plan, to include:

- Agreeing routes to and from the Site, avoiding residential and congested routes as far as possible;
- Scheduling deliveries to avoid morning and evening peak hours;
- Controlled working hours;
- On-site loading and unloading;
- Encouraging the construction workforce to access the Site using public transport;

- Wheel washers will be provided for transport vehicles leaving the Site;
- Operation of plant will be carried out in such a way that noise is minimised;
- Re-use and recycle excavated materials and waste as much as possible;
- Avoid lorries leaving the Site empty wherever possible (i.e. anything that needs to leave the Site to be taken on delivery lorries if at all practicable), and
- Signage and hoarding used to control pedestrian access around the Site.

5.7 A residential Travel Plan will be implemented to ensure there is no increase in the number of vehicle movements to/from the Site as well as well as encouraging modal shift. In particular, single occupancy vehicle trips will be discouraged in favour of promoting more sustainable modes of travel.

*Residual Effects*

5.8 The impact of additional construction traffic during a full working day will be insignificant. This will be supported by the range of mitigation measures that have been identified to ensure there is not a concentrated impact within a short period of time such as traditional peak hours. The residual effect during operation of the Proposed Development will be minor to moderate adverse and so for some effects will remain significant.

*Cumulative Effects*

5.9 As a result of the introduction of the relief road through South East Bicester, there will be a reduction in vehicle movements on the A4421 Neunkirchen Way and A41 South arms on approach to the roundabout junction, with the remaining arms experiencing an increase in traffic flows. Whilst there is a major magnitude of change, the additional traffic during the cumulative scenario will result in a moderate long term adverse effect on Gavray Drive, with all other receptors continuing to have a minor adverse effect. This impact can be attributed to the fact that Gavray Drive currently serves a limited number of residential units.

## 6. AIR QUALITY

*Effects*

6.1 During construction, dust emissions are considered likely to have a moderate significant effects. Following mitigation, the residual significance will be negligible. Taking into account traffic growth, post construction impacts are anticipated to experience negligible impacts. Considering the proximity of the railway lines, the effects are predicted to be negligible.

*Mitigation Measures*

6.2 With effective mitigation implemented as part of the Construction Environmental Management Plan, effects associated with the construction phase are likely to be insignificant.

*Residual Effects*

6.3 With mitigation measures implemented, the residual significance of potential impacts from all dust generating activities is not significant.

*Cumulative Effects*

6.4 Should the construction phase programmes of other committed developments in the vicinity of the proposed development overlap then there is the potential for increases in dust impacts at sensitive locations. However, it is not anticipated these will be significant and the implementation of suitable mitigation options, as outlined, should control impacts to an acceptable level. Post construction, all receptors are anticipated to experience negligible impacts.

## 7.0 NOISE

*Effects*

7.1 Daytime construction noise levels are considered to be insignificant.

7.2 There is the potential for vibration effects during demolition, foundation works, and superstructure construction. An appropriate Code of Construction Practice will be developed to mitigate this.

7.3 The entirety of the nearby road network will experience a neutral/insignificant noise increase (i.e. an increase of less than 1dB) during and after construction. The increase in traffic noise for operation on Gavray Drive is between 1.4dB and 2dB.

*Mitigation Measures*

7.4 No specific additional mitigation measures are proposed to address the impacts of increased numbers of vehicles using the existing road network. This is because the net effect of the proposed development on road traffic noise levels is considered to be neutral / insignificant for the entirety of the road network.

*Residual Effects*

7.5 During construction there will be neutral/insignificant residual noise effects at the receptors outside the application boundary as a result of the construction activity. After completion the residual indirect effects for existing roads would be neutral/insignificant.

*Cumulative Effects*

7.6 With regards to construction noise effects, the timing for construction of surrounding committed development is unknown and as such not quantifiable, however, there is the potential to contribute to cumulative effects should construction of other committed development coincide with the proposed scheme. Even under such a scenario, the cumulative impact of two sites cannot result in a noise level more than 3dB greater than that from a single development assuming that the same assessment criteria and constraints are applied to both sites.

7.7 Post completion, with regards to the indirect effects from road traffic on the wider road network, nearby committed development has been included within the traffic flow figures used and therefore the assessment already takes account of committed development in the area.

## 8.0 LANDSCAPE

*Effects*

8.1 The direct effects of the proposed development would be adverse through the establishment of a new land use on a greenfield site. These effects should not be seen as an obstacle to development as the mature landscape setting of the site contains effects so as to reduce, offset and mitigate otherwise adverse indirect effects from extending across the immediate and surrounding landscape to the Site.

8.2 The most adverse visual effects are likely to be experienced along public footpath (PRoW 129/3) which is situated within the Site area. This level of effect diminishes as the site and vegetation matures.

*Mitigation Measures*

8.3 Mitigation during construction includes adoption of an approved Construction Environmental Management Plan and Arboricultural Method Statement. The masterplan has incorporated existing landscape features for inherent mitigation, as well as facilitating additional mitigation measures as detailed below.

8.4 The landscape includes:

- Retention and continuity of typical landscape features to reinforce landscape character and provide a distinctive sense of place;
- Visual screening of the proposed development;
- Creation of new public and private amenity; and
- Contribution to green networks and enhancement of habitat connectivity and ecological value.

*Residual Effects*

8.5 What indirect impacts are experienced diminish over the time of the proposed development through the maturity of the site setting and the effectiveness of mitigation measures. Overall, these effects present a residual situation which is insignificant and also not significantly adverse in EIA terms.

*Cumulative Effects*

8.6 It is considered that the proposed development would be experienced as an “infill” to the existing urban area of Bicester and would not be experienced simultaneously with other proposed residential schemes (which being much larger would be perceived as urban

extensions rather than “infills”). There would inevitably be cumulative effect with the development of the adjacent Gavray Drive East site. However, adverse landscape effects would be moderate and would be contained within each of the site’s well defined boundaries.

## 9.0 ECOLOGY

*Effects*

9.1 During construction, subject to the adoption of mitigation measures the potential effects from all dust generating activities is not significant. The hydrological effect to silt laden run-off/pollutants entering Langford Brook is considered to be inherently mitigated through the provision of a development buffer via the Public Open Space (POS) proposed along the eastern boundary of the Site. In the absence of further mitigation, potential hydrological effects are considered indirect minor adverse (temporary) and reversible (site level), and so not significant for the purposes of the Ecological Impact Assessment (EcIA).

9.2 There are no significant adverse effects arising to trees during construction. The Proposed Development will result in no direct loss to trees, and as such no significant effect on bats potentially roosting, foraging or commuting in these trees will arise not to bats foraging and commuting. In the absence of any mitigation, negative effects of lighting on potentially roosting bats are considered an indirect minor adverse, reversible (site level) effect which is not significant for EcIA purposes.

9.3 For birds, the loss, damage and degradation of potential bird nesting and foraging habitats during construction and post construction will be restricted to arable and small losses of hedgerow habitat. These effects are considered to be of low magnitude and would constitute a minor adverse (temporary to permanent) effect (site level) which is not significant for EcIA purposes. The disturbance of nesting and foraging habitat for breeding birds through light spill, noise, visual and human disturbance during construction are likely to have an effect at no more than the site level owing to the limited availability of suitable habitats within the Site. The effects are considered minor adverse (site level) and so not significant for EcIA purposes.

9.4 The Proposed Development could result in the direct harm to harvest mice if construction activities are carried out within areas of rough grassland, tall ruderal and scrub identified within the south east corner of the Site. The potential harm to harvest mice and the loss, damage and degradation of harvest mice habitats is considered a direct, minor (permanent) adverse effect at the site level which is not significant for EcIA purposes.

9.5 A single adult white-letter hairstreak sighting has been made and no eggs recorded, within the Site. The hedgerow H2 will be lost, resulting in the loss of habitat confirmed to support white-letter hairstreak. Habitat loss is considered a minor adverse (permanent) effect at the site level, and so not significant for EcIA purposes.

9.6 Post-completion, Gavray Drive Meadows Local Wildlife Site is at risk of potential adverse effect as a result of increased recreational pressure resulting from increased

housing provision. Increased recreational pressure has the potential to damage and degrade valuable ground flora and trees through trampling and littering, and disturb associated fauna occurring within the LWS including birds, great crested newts and reptiles. The effects of increased recreational pressure as discussed above are considered to have been partially inherently mitigated through the open space provision shown on the submitted Parameter Plan. The resulting effect is considered to be minor adverse (permanent) and of significance at the local level.

9.7 There will be low significance of air quality effects arising during the post-completion stage.

9.8 During the post-completion stage of the Proposed Development, retained habitats are at risk of damage, disturbance or deterioration as a result of the increased residential population, potentially resulting in inappropriate recreational use and inappropriate management of habitats. Such effects are applicable only to those habitats retained, which is limited to the broadleaved woodland along the southern boundary, Langford Brook and associated trees. The effects are considered to be indirect, minor adverse (temporary to permanent) (site level) and so not significant in terms of EcIA purposes.

9.9 Retained habitats supporting breeding and foraging birds are potentially at risk of disturbance and damage during the operational phase and an increase in domestic cats and dogs in the vicinity would increase the risk of predation and disturbance of birds. These effects are considered to constitute minor adverse (permanent) effects (site level) and so not considered to be significant for the purposes of the EcIA.

9.10 An increase in domestic cats and dogs could increase the risk of predation and disturbance to harvest mice. This effect is considered to constitute a minor adverse (permanent) effect (site level) and so not considered to be significant for the purposes of the EcIA.

9.11 No significant effects on white-letter hairstreak are anticipated during the operational phase of the Proposed Development.

*Mitigation Measures*

9.12 Adverse effects have been avoided or are not considered significant, such that further mitigation would not be required for the purposes of Ecological Impact Assessment.

9.13 Detailed measures to protect habitats and species during the construction phase will be set out in an Ecological Construction Method Statement (ECMS). An Environmental Clerk of Works (ECW) will be identified by the Developer to implement the ECMS. This will include measures to address construction effects on retained habitats, ensuring that they are reduced to insignificant levels; however, habitat losses will be addressed through new habitat creation during and after construction. Protection of species during construction will be ensured through the provisions of the ECMS. Specific measures have been identified to be included in the ECMS for each species group.

9.14 Post-completion a Landscape Ecology and Arboricultural Management Plan (LEAMP) will be developed to ensure the long-term conservation of retained and new valued environmental resources, including habitats and species of ecological value. The LEAMP will include detailed measures covering the establishment phase up to 5-years after commencement of the Proposed Development, with objectives and principles set out covering the long-term management. Monitoring of the effects of the implemented measures will form the basis for any revision of the scheme after five years. The Developer will provide a financial contribution for the long-term implementation of the LEAMP secured via a legal agreement. The LEAMP will focus on the establishment and maintenance of new habitats of long-term ecological value within the Proposed Development's open space provision, to provide net gains to biodiversity

9.15 Potential adverse hydrological effects on Langford Brook will be addressed through the incorporation of a Sustainable Drainage System (SuDS) within the Public Open Space (POS) provision.

*Residual Effects*

9.16 Residual effects anticipated during the construction phase have been reduced to levels that are not considered to be significant.

9.17 Post-completion, in light of the mitigation proposed, all potential effects within the assessment are considered not to be significant. Furthermore, mitigation measures to be delivered via the Soft Landscape proposals and LEAMP will result in a minor beneficial (site level) effect owing to habitat creation and restoration, and new habitat creation, provided.

*Cumulative Effects*

9.18 Any cumulative proposal evaluated will need to be designed to accommodate and mitigate ecological interests to fulfil planning policy requirements and thereby inherently protect ecological interests across the wider landscape from cumulative development effects. Owing to the absence of significant residual effects predicted, cumulative effects of the Proposed Development are considered to be extremely unlikely to arise in combination with the proposed residential development at Gavray Drive East.

## 10.0 ARBORICULTURE

*Effects*

10.1 Possible construction impacts can be avoided and mitigated through construction techniques. The proposed development requires the removal of one internal hedgerow. The remaining individuals and groups of trees can be appropriately retained and with suitable protection can contribute greatly to the visual amenity of the area. With the implementation of landscape proposals this loss will be suitably mitigated and indeed increase the local tree cover in the immediate area of the development.

*Mitigation Measures*

10.2 Loss of existing trees and hedgerows as a result of the development overall is considered negligible in terms of landscape and visual amenity. The protection of Root Protection Areas (RPA) using suitable protective barriers conforming to the Standard, will protect against damage to trees and hedgerows selected for retention.

10.3 Significant new planting of both trees and hedgerow are to be submitted as part of the Reserved Matters application. The mitigation for the loss of the one internal hedgerow proposes a like for like replacement due west of its current location, thereby reinforcing the site's western boundary.

*Residual Effects*

10.4 Following the implementation of the mitigation measures, residual effects with respect to the arboricultural resource are limited to neutral and negligible significance.

*Cumulative Effects*

10.5 There are no cumulative effects arising. Following the implementation of the mitigation strategies within the construction stage of the Proposed Development as highlighted, the potential impacts associated with trees and development can be suitably reduced to an acceptable level, such that there are no significant effects identified.

## 11.0 HISTORIC ENVIRONMENT

*Effects*

11.1 The Site does not form part of the setting of, or contribute to the significance of, any of the designated heritage assets in the study area. Therefore, the construction stage will not affect any designated heritage assets directly or indirectly.

11.2 Construction will likely remove any archaeological deposits present within its footprint, with a resulting moderate/minor adverse significance. This is not considered to be significant in terms of the EIA.

11.3 The historic landscape character of the Site is identified as being of negligible sensitivity with a minor adverse significance. This is a non-significant effect in terms of the EIA.

11.4 The Site does not form part of the setting of, or contribute to the significance of, any of the designated heritage assets in the study area. As such, there will be no effects arising from the completed Proposed Development.

11.5 All impacts on undesignated heritage assets will occur during the construction phase. As such, there will be no impacts on these during the post-completion stage.

11.6 The historic landscape character of the Site is identified as being of negligible sensitivity. Therefore, the permanent, large, direct and negative impact, resulting from the complete land use and character change from agricultural land to residential, will be of minor adverse significance. This is a non-significant effect in terms of the EIA.

*Mitigation Measures*

11.7 As there are no impacts identified upon designated heritage assets, there is no requirement for mitigation measures.

11.8 A mitigation strategy; to record both the identified and unidentified undesignated archaeological features within the Site; has been agreed with Cherwell District Council.

11.9 As there are no impacts identified upon *designated* heritage assets, there is no requirement for mitigation measures.

*Residual Effects*

11.10 As there are no impacts identified upon designated assets, there are no residual effects. As the undesignated heritage assets will be removed through the mitigation and construction processes described above, there will be no residual effects. As there are no measures available to mitigate the impact upon the historic landscape character of the Site, the impact will remain temporary, large, direct and negative, resulting in a minor adverse effect which is not significant for the purposes of environmental impact assessment. There are no impacts identified upon designated assets, and therefore there will be no residual effects.

11.11 All impacts will have occurred during the construction phase and there will therefore be no residual impacts during the post-completion stage. As there are no measures available to mitigate the impact upon the historic landscape character of the Site, the impact will remain permanent, large, direct and negative, resulting in a minor adverse effect, which is not significant for the purposes of environmental impact assessment.

*Cumulative Impacts*

11.12 Should development east of Langford Brook come forward this could lead to the land use change of historic farmland to residential development, with the cumulative effect considered to be adverse, although not significant for the purposes of environmental impact assessment.

## 12.0 AGRICULTURE AND SOIL RESOURCES

*Effects*

12.1 The Proposed Development includes the development of approximately 6 ha of agricultural land of Subgrade 3b 'moderate' quality plus a further circa 0.7 ha currently in use as a temporary construction compound which has also been identified as Subgrade 3b. The impact is small with a Moderate to Minor Adverse effect. As 6.7 ha of Subgrade 3b is at the lower end of the Low magnitude parameters, it is considered that the effect would be of Minor Adverse significance.

12.2 The loss of land may lead to some adjustments to the farm business, but any changes necessary will be of a very minor nature. The small magnitude of impact upon a full-time agricultural business, a receptor of low sensitivity, will lead to a Minor Adverse effect.

12.3 Once in operation, the non-agricultural use of land can lead to trespass onto neighbouring agricultural land. The spread of such trespass can prohibit the full agricultural exploitation of adjacent land. The small magnitude of the effect of trespass on farm businesses, themselves receptors of low sensitivity, would result in an effect of Minor Adverse significance.

*Mitigation Measures*

12.4 There are very few measures which can be put in place to mitigate the long term effects on agricultural businesses. Given the Minor Adverse effect on one farm business, however, mitigation measures are not considered to be required.

12.5 The effects of trespass as a result of development can limit the full exploitation of adjacent agricultural land. The design for the Proposed Development includes an area of public open space between the two sites which will help mitigate the spread of trespass from one area to the other.

*Residual Effects*

12.6 The development of agricultural land for residential purposes is permanent. The loss of agricultural land at the Site will therefore remain Minor Adverse and the effect on one farm business will remain Minor Adverse.

12.7 The design of the Proposed Development will help mitigate any effects from trespass onto adjacent agricultural land. The significance of trespass is considered to be Negligible.

*Cumulative Effects*

12.8 A worst case scenario has been considered in terms of cumulative effects, given that it is not known the extent of the Best and Most Versatile Agricultural Land (BMV) on all development sites, nor the extent of the proposed loss of agriculture in each case. As a result, if all the land within each committed site comprises BMV then there will be a minor to moderate adverse impact.

## 13.0 FLOOD RISK AND DRAINAGE

*Effects*

13.1 The construction effects on the existing water quality is considered to be moderate adverse whereas the magnitude of the effects on the existing drainage and flood risk is considered to be large adverse, albeit temporary.

13.2 Post-completion, the development of the site would lead to a loss of approximately 1512m$^3$ of existing floodplain storage capacity and consequently could put the Proposed Development at risk of fluvial flooding and further increase a flood risk downstream. Consequently the magnitude of the effects is considered to be large adverse. Appropriate mitigation measures in line with the current best practice would therefore be required to minimise the effects of the Proposed Development on flood risk.

13.3 The proposed surface water drainage system will be based on a gravity discharge to the Langford Brook. The introduction of impermeable surfaces would increase the rate and volume of surface water runoff. Utilisation of traditional pipe drainage system based on unrestricted and untreated discharge to the Langford Brook could exacerbate flood risk downstream and adversely impact the water quality in the receiving watercourse. Consequently the magnitude of the uncontrolled surface water discharges is considered to be moderate adverse. Appropriate mitigation measures would therefore be required.

13.4 Considering the impermeable nature of the underlying soils no infiltration based surface water drainage system will be installed on site. The drainage will discharge to the Langford Brook. As a result the risk of pollution to the groundwater due to runoff discharges is minimised. The magnitude of the effect is considered to be negligible and no mitigation measures are required.

13.5 There is a potential for localised groundwater flooding on site due to the underlying geology, especially in the low lying areas. The magnitude of the effect is considered to be small adverse and some mitigation measures will be required to ensure that the proposed properties are protected against groundwater flooding. The groundwater flooding is not considered however to pose a threat to human life.

*Mitigation Measures*

13.6 An Environmental Management Plan including Water Management Plan and pollution emergency procedure would need to be developed for the site in consultation with the Environment Agency and Oxfordshire County Council prior to construction works commencing. The incorporation of this will reduce the risk of

watercourse pollution and flooding and the magnitude of the temporary effects will be small adverse.

13.7 An area within the most north easterly part of the site, currently located outside the 1 in 100-year with climate change flood extent, has been allocated for compensatory flood storage. Considering this along with other construction requirements as part of the proposed fluvial flood mitigation measures on site then the magnitude of the effect would be negligible.

13.8 A surface water drainage strategy, incorporating SuDS management train, has therefore been produced for the Proposed Development area. The proposed surface water management measures will reduce the magnitude of the effect to negligible.

13.9 The risk of groundwater flooding is considered to be low, however construction techniques can ensure this remains negligible.

*Residual Effects*

13.10 The adoption of best working practices and compliance with the EAs Pollution Prevention Guidelines by the appointed contractor would reduce the risk of significant effects on the quality and quantity of the local water environment during the construction phase of the development. It will not however totally eliminate the risks thus the significance of the temporary residual effects will be minor adverse.

13.11 Subject to incorporation of the proposed fluvial mitigation measures the significance of the effect will be negligible. Subject to incorporation of the proposed SuDS scheme measures the significance of the effect will be negligible. Subject to incorporation of the recommended protection measures against groundwater flooding the significance of the effect will be negligible.

*Cumulative Effects*

13.12 Based on the assumption that the future proposed developments will follow the current best practice and approved design standards in relation to flood risk and surface water management (e.g. provision of flood protection and SuDS schemes addressing water quality and quantity) and groundwater protection the significance of the cumulative impacts on the hydrology, hydrogeology and flood risk would be negligible.

## 14.0 GROUND CONDITIONS

*Effects*

14.1 Potential Effects of the Proposed Development on ground conditions during construction include:

- Removal or incorporation of trees and shrubs into the development which could have an impact on the condition of the weathered clay material. This may result in swelling or shrinkage of the ground dependent upon the hydrological conditions at the site. In addition, large areas of hardstanding are likely to reduce the amount of water ingress into the soils and potentially affect the ground conditions;

- Fuel and oil based hydrocarbon contamination associated with plant and machinery activity on site;

- It is possible that contamination of the ground may occur due to activities relating to the developments. This could include spillage of oils and fuel from plant working at the site, chemical spillages and other contaminants, and potential for construction waste such as broken brick, tiles, waste concrete and cement, to become incorporated into the surface of the ground;

- Removal of topsoil materials and tracking of plant across uncovered cohesive bedrock material may cause additional weathering and disturbance to the shallow ground conditions and could result in softening and rutting of the surface; and

14.2 The effects of the post-completion ground conditions are deemed to be the same as those in the construction stage. Following development of the Site the ground will be affected by activities undertaken within the individual housing plots. This could include spillages of oils, fuels or other chemicals associated with vehicle and household activities. Similarly the roads serving the development provide further potential for contamination of the ground.

*Mitigation Measures*

14.3 In terms of minimising the impact of the Proposed Development on the ground conditions, there would be a requirement during the development/construction phase for the contractor to follow the best practice guidance contained within the

Environment Agency's Pollution Prevention Guidelines to ensure that materials and chemicals used during the construction would not impact the ground adversely.

14.4 Construction activities may also require material management plans to be prepared and implemented to audit waste materials and minimise potential adverse impacts to the ground. Mitigation will be achieved through application of a Construction Environmental Management Plan (CEMP).

14.5 There are few measures that may be put in place to minimise the impact that individuals occupying the Proposed Development may have on the ground conditions, however the predominately clayey nature of both the existing made ground and underlying weathered clay strata would help to contain any spillage or contamination within any isolated location and impede transmission.

*Residual Effects*

14.6 It is considered that the existing ground conditions at the Site provides minimal impact upon the Proposed Development of the Site. The assessments reported above do not identify any significant adverse residual effects.

*Cumulative Effects*

14.7 The risks due to ground conditions will be similar for all planned development. However, only effects to groundwater and surface water (particularly from Gavray Drive East) are considered to be cumulative. It is assumed suitable mitigation measures and, if required, remediation measures will be in place to prevent contamination of groundwater and surface water. Therefore the cumulative effect of contamination during construction is considered to be insignificant. Spillages or other sources of contamination within individual housing plots may have a cumulative impact during the Post-completion stage. However, the magnitude of this is considered to be negligible and therefore the cumulative effect is deemed to be insignificant.

## 15.0 WASTE AND UTILITIES

*Effects*

15.1 Construction will generate waste materials as a result of general handling losses and surpluses. Up to approximately 4,534m3 construction waste could be generated as a result of the Proposed Development. It is likely that a significant proportion of this could be recycled or re-used resulting in an insignificant effect.

15.2 There is potential for construction works to give rise to significant environmental effects if appropriate mitigation measures are not employed during the installation works to provide new utility service; e.g. fuel spillages and increased noise emissions from plant and machinery.

15.3 During construction, there is the potential for plant, on site, to strike existing services (for example cables and pipes) if they are not on record drawings or are not located prior to commencement of excavation. This could cause temporary loss of the aforementioned services to the general population in the local area temporarily.

15.4 The users of the completed development will produce wastes which will require disposal and which by virtue of the volumes which will arise are likely to give rise in the long term to a more significant impact.

15.5 The users of the completed development will require the provisions of the utilities (potable water, electricity, gas, telecommunications and foul drainage) and therefore the development is likely to give rise in the long term to a more significant impact.

*Mitigation Measures*

15.6 The volume of waste generated during the construction works will be minimised through adherence by the Site contractor to the Code of Practice on Site Waste Management Plans (SWMP).

15.7 The installation works to provide new utility services will be subject to appropriate construction management plans and pollution prevention guidance to ensure any environmental impacts during the temporary construction phase will be negligible.

15.8 The production of waste materials from the completed development can be mitigated by encouraging waste minimisation and commercial recycling schemes.

15.9 To minimise water use, sustainable water fittings will be specified for all water outlets throughout the development. The introduction of energy efficiency measures in accordance with the anticipated Building Regulations revisions during the detailed design stage will reduce the overall energy demand consumption. If reinforcement of the existing gas network needs to take place in order to supply the development, the newly proposed lines will follow the same route as the existing and as such, environmental impact will be minimal. No mitigation measures will need to be put in place with regards to telecommunications. All drainage will be kept as shallow as possible to minimise the excavations required and subsequent impact

*Residual Effects*

15.10 There will be a small adverse impact on the availability of landfill capacity, as a result of the disposal of non-recyclable wastes from the development. This impact will include a reduction in the total landfill space available for other wastes. Waste materials from the development are likely to be disposed of to landfills in the local area with any residual hazardous materials taken further afield to adjoining counties. The impact is therefore likely to have an effect at local or district scale rather than a regional level. As a result of the mitigation measures which will be applied, the impacts on local landfill availability are likely to be relatively minor overall.

15.11 The use of landfill capacity for non-recyclable wastes from the development is not reversible and therefore will have a long-term impact on the overall availability of landfill capacity in the area. With the current facilities in place it is anticipated that the impact of the Proposed Development on the County's ability to handle the recyclable and recoverable wastes generated by the Proposed Development will be negligible.

15.12 With an increase in housing within the area, there will be an increase in demand for all the utilities investigated within this report. However due to the current infrastructure available, it is anticipated that there will be an insignificant impact following mitigation measures implemented to existing networks to serve the development.

*Cumulative Effects*

15.13 The risks due to utilities and waste will be similar for all of the planned development in the Local Plan. If all the proposed developments are constructed, residual waste materials which cannot be re-used, recycled or recovered, from all construction activity is likely to be disposed of to landfill, within the Minerals and Waste Local Plan area.

15.14 If all proposed developments are constructed in a short time period, the cumulative additional demand may affect power and gas supplies to the local area where

insufficient lead in time for network reinforcement exists. This could lead to a potential risk that of the infrastructure not meeting demand, creating power outages and gas shortages. Infrastructure reinforcement is assessed at the planning stage however in consultation with the utility providers and therefore provides a mechanism in which power and gas provision can be planned into the future to cater for increased demand.

15.15 If all the proposed developments are constructed, the cumulative additional demand would put additional strain on the existing water supply network. There is then the risk that, not enough water could be supplied to meet the demand, creating a water shortage, especially during prolonged periods of hot dry weather. Infrastructure reinforcement is assessed at the planning stage however in consultation with the utility providers and therefore provides a mechanism under the five year Asset Management Plan process to ensure provision for increased demand.

15.16 There are not expected to be any significant cumulative effects from the increase in telecommunications traffic.

## 16. CONCLUSION AND CUMULATIVE IMPACTS

16.1 In overall terms, the outcome of the EIA is that significant beneficial effects are substantial, significant adverse effects are limited and beneficial effects outweigh adverse effects.

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