

Vale of White Horse District Council
Infrastructure Delivery Plan
(LPP2 Update)
IDP - Final Report

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This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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1 Introduction

1.1 Overview

Ove Arup and Partners ('Arup') has been commissioned by Vale of White Horse District Council ('the Council') to prepare an Infrastructure Delivery Plan for the sites identified in the emerging Local Plan Part 2 – Detailed Policies and Additional Sites.

1.2 Structure

This Infrastructure Delivery Plan (IDP) focuses specifically on the infrastructure requirements for the sites that have been identified in the Local Plan Part 2 (LPP2).

The IDP is set out as follows:

- Section 2 provides a summary of the national, sub-regional, and local context for infrastructure planning and delivery in the Vale of White Horse (VoWH).
- Section 3 documents the assumptions that have been used to frame the assessments of infrastructure requirements.
- Section 4 sets out infrastructure issues at the strategic scale, which affect the district as a whole.
- Section 5 to 11 provides a site-by-site list of the infrastructure requirements identified.
- Section 12 discusses the funding issues that will need to be considered in delivering both the development sites and supporting infrastructure.
- Section 13 sets out some overall conclusions and some areas for further work.

2 Background and Context

The following section summarises some of the extant policy documents and evidence base documents that frame infrastructure planning and delivery in the Vale of White Horse area.

2.1 National Policy Context

The National Planning Policy Framework (NPPF) states that local planning authorities must prepare a robust and evidence-based local plan which seeks to deliver sustainable development. As part of the statutory requirement to produce a local plan, national policy has placed a greater responsibility on local planning authorities to plan for the delivery of infrastructure. This includes infrastructure for transport, telecommunications, waste management, water supply, wastewater, flood risk, and the provision of minerals and energy (Paragraph 156).

Paragraph 157 goes on to emphasise the importance of infrastructure in local plans, stressing the need to “*plan positively for the development and infrastructure required in the area to meet the objectives, principles and policies of the Framework*”.

Paragraph 162 sets out the infrastructure evidence base required for local plans. This states that local planning authorities should work with other authorities and providers to:

- assess the quality and capacity of infrastructure for transport, water supply, wastewater and its treatment, energy (including heat), telecommunications, utilities, water, health, social care, education, flood risk management, and its ability to meet forecast demands; and
- take account of the need for strategic infrastructure, including nationally significant infrastructure within their areas.

The Planning Practice Guidance (PPG) (paragraph 018, reference 12-018-201403036) further explains the role and function a local plan in delivering infrastructure, including the following points.

- The local plan is an opportunity for the authority to set out a positive vision for the area, but should be realistic about what can be achieved and when, including in relation to infrastructure. This includes identifying what infrastructure is required and how it can be funded and brought on stream at the appropriate time, as well as ensuring that the requirements of the Plan as a whole will not prejudice viability.
- Early discussion with infrastructure and service providers is important to help understand their investment plans and critical dependencies.
- The local plan should make clear, for at least the first five years, what infrastructure is required, who is going to fund and provide it, and how it relates to the anticipated rate and phasing of development

- For the later stages of the Plan period, less detail may be provided as the position regarding the provision of infrastructure is likely to be less certain.
- Where the deliverability of critical infrastructure is uncertain, the Plan should address the implications of this, e.g. possible contingency arrangements and alternative strategies.
- Whilst the detail concerning planned infrastructure provision can be set out in a supporting document (e.g. an infrastructure delivery programme that can be updated regularly), the key infrastructure requirements on which delivery of the Plan depends should be contained in the Local Plan itself.

National policy therefore requires a full understanding of the likely infrastructure requirements to facilitate growth to ensure a deliverable local plan.

2.2 Sub-Regional Context

2.2.1 Overview

The focus for this IDP is on the site-specific requirements generated by each of the seven sites earmarked in the LPP2. However, it is recognised that the planning and delivery of certain infrastructure in the VoWH area (and Oxfordshire as a whole) is done by other organisations. This is particularly true for strategic scale infrastructure.

Other organisations involved in planning and delivery of infrastructure in VoWH / Oxfordshire include: Oxfordshire Local Enterprise Partnership (OxLEP), Oxfordshire Partnership, and Oxfordshire County Council. Their roles and responsibilities and the influence they have on infrastructure planning and delivery in the VoWH is set out below. Further details on what strategic scale infrastructure is being planned in the VoWH area is set out in Section 4.

2.2.2 Oxfordshire Local Enterprise Partnership

OxLEP determines strategic economic priorities including investments and activities to drive growth and create jobs in the county. OxLEP has managed to gain funding from a series of national funding streams to support growth – these funding streams include: Local Growth Fund, City Deal, and the Growing Places Fund^{1 2}.

Local Growth Fund

Under the Local Growth Fund (Growth Deal 1), OxLEP has managed to secure over £108 million to invest in priority projects and infrastructure. Those projects that will be of benefit to the VoWH include:

¹ Oxfordshire Local Enterprise Partnership – Growth Deal 1: <https://www.oxfordshirelep.com/content/local-growth-fund>

² Oxfordshire Local Enterprise Partnership – City Deal: <https://www.oxfordshirelep.com/content/city-deal>

- **Science Vale Cycle Network improvements (£4.9 million)** (£4.5 million coming from the Local Growth Fund). This is a sustainable transport scheme providing greater connectivity between Science Vale and the newly improved Didcot station by bike. This project will be delivered by Oxfordshire County Council (OCC).
- **Oxford Science Transit Scheme (£40 million)** (£35 million coming from the Local Growth Fund). This proposal is to expand the integrated public transport system along the Knowledge Spine, delivering major enhancements to the A40 strategic route between Oxford, Northern Gateway and Witney and connecting centres of innovation and economic growth with Oxfordshire's universities. This project will be delivered by OCC.

OxLEP has also secured further funds under Growth Deal 2 and Growth Deal 3 (£9.9 million and £24 million respectively).

City Deal

Alongside the Growth Deals, OxLEP has also secured over £55 million through the Government's City Deal programme. Relevant projects that will be of benefit to the VoWH include:

- **The Harwell Innovation Hub - £14.1 million** (£7 million coming from the City Deal), which will be a new facility focussed on promoting open innovation at Harwell Campus. This project will be delivered by The Science and Technology Facilities Council.
- **Science Vale Oxford Enterprise Zone access improvements - £28.2 million** (£6.1 million coming from the City Deal), which is a package of measures to improve national and local road networks. This project will be delivered by OCC.
- **Oxford Science Transit - £23.5 million** (£8.7 million coming from the City Deal), which will be a fully integrated public transport system that connects the area's centres of innovation and economic growth with the two universities. It will enable the first phase of the Science Transit by focusing on the major pinch points in the network: the A34 between Abingdon and south Oxford, and the access into Oxford from the A34 along the Oxford Southern Bypass. This project will be delivered by OCC.

2.2.3 Oxfordshire Partnership / Oxford Growth Board

Overview

To help generate a co-ordinated response to growth across Oxfordshire, the Oxfordshire Partnership has been put in place, which brings together organisations from the public, private, voluntary and community sectors – including all five district councils.

The Oxfordshire Partnership has established the Oxfordshire Growth Board, which is a joint committee of the six councils (including OCC) to foster joint working on growth and ensure a joined-up approach on matters of infrastructure.

Oxfordshire Infrastructure Strategy

The Growth Board commissioned a county-wide Oxfordshire Infrastructure Strategy (OXIS), which presents an overview of growth patterns, assesses the infrastructure required to support the growth, and estimates likely costs and funding gaps. It is not intended to supersede or replace local studies (including this IDP), but is a useful reference point for strategic infrastructure issues across the county³.

The OXIS Stage 1 report (April 2017) and the OXIS Stage 2 report (November 2017) have been reviewed and the findings incorporated in to this IDP where relevant. Where OXIS has identified strategic infrastructure improvements that would support growth coming forward these have been taken account of in this IDP.

OXIS identifies ‘*Regional Infrastructure Projects*’, ‘*Countrywide Infrastructure*’, as well as infrastructure for nine corridors set out in the study.

The two most relevant corridors for the VoWH area are: ‘*Corridor 2 – Knowledge Spine South*’, and ‘*Corridor 6 – A420 Corridor*’. The relevant infrastructure items for the VoWH area and the delivery of the LPP2 sites are discussed in more detail in Section 4.

The OXIS work also confirms that there is a significant gap between the cost of the infrastructure Oxfordshire is likely to need by 2040, and the funding available to deliver it.

Oxfordshire Housing and Growth Deal

On the 22nd November 2017, the Oxfordshire Growth Board secured £215 million of Government investment for new homes and infrastructure across Oxfordshire⁴.

The Oxfordshire Housing and Growth Deal will provide £60 million for affordable housing and £150m for infrastructure improvements, including road and rail. This will support the ambition of building 100,000 new homes across Oxfordshire between 2011 and 2031 to address the county’s severe housing shortage and expected economic growth.

Full details on what infrastructure items will be funded by the Oxfordshire Housing and Growth Deal are yet to be released. However, the outline agreement

³ Oxfordshire Growth Board – Oxfordshire Infrastructure Strategy (November 2017):
https://www.oxfordshire.gov.uk/cms/sites/default/files/folders/documents/communityandliving/partnerships/GrowthBoard/oxis_stage2.pdf

⁴ Oxfordshire Growth Board – Secures £25 million Government investment deal:
https://www.oxford.gov.uk/news/article/595/oxfordshire_growth_board_secures_215_million_government_investment_deal_for_the_county

notes that £150 million funding for infrastructure to unlock key housing sites, to be administered as £30 million per annum for five years.

Housing Infrastructure Fund

In July 2017, Homes England announced a £2.3 billion Housing Infrastructure Fund (HIF) to help deliver infrastructure alongside new residential development. The HIF was split into a Marginal Viability Fund (for bids up to £10 million), and a Forward Fund (for bid up to £250 million). Local authorities were asked to bid for access to these funds, with a submission deadline of September 2017.

On the 1st February 2018, the successful proposals to the Marginal Viability Fund were announced. Five schemes in Oxfordshire were successful, including the Wantage Eastern Link Road (WELR) in the VoWH area, which secured £7.7 million towards delivering the scheme.

2.2.4 Oxfordshire County Council

OCC is responsible for delivering and maintaining highways, transport, and education infrastructure, in addition to providing libraries, adult social care and youth services, and fire and rescue services. OCC is also responsible for waste and is the Lead Local Flood Authority.

2.3 Local Context

2.3.1 Vale of White Horse Local Plan Part 1

The Vale of White Horse Local Plan Part 1 (LPP1) was adopted in December 2016, and sets out the overarching growth strategy for the district.

It establishes a housing growth requirement of 20,560 homes to be delivered in the district between 2011 and 2031. It also makes provision for approximately 218 hectares of employment land, which is anticipated to deliver approximately 23,000 jobs over the plan period.

The LPP1 defines a spatial strategy for the delivery of growth, and establishes three sub-areas which will be the focus for development. These are:

- Abingdon-on-Thames and Oxford Fringe Sub-Area – which covers the northern and north-eastern part of the Vale.
- South East Vale Sub-Area – which includes much of the Science Vale area.
- Western Vale – which is a more rural area stretching from the North Wessex Downs Area of Outstanding Natural Beauty (AONB) to the River Thames.

2.3.2 Vale of White Horse Local Plan Part 1 – Evidence Base

Infrastructure Delivery Plan (December 2016)

Evidence to inform and shape the LPP1 included an IDP, which was finalised in December 2016. The IDP to accompany the LPP1 defines the strategic infrastructure requirements to deliver planned growth across the district. It highlights those infrastructural items that are critical to deliver the LPP1, and shows that there is a gap in infrastructure funding and provision. This demonstration of infrastructure requirements, and the gap in funding was a fundamental piece of evidence to justify the Council's decision to put in place a Community Infrastructure Levy (CIL).

This IDP (which supports LPP2) does not duplicate or over-rule the infrastructure items previously identified as necessary to support the growth aims of LPP1. The two IDPs should be read in conjunction with one another to understand the full infrastructure requirements across the district.

Community Infrastructure Levy

The Council adopted a Charging Schedule in September 2017, and has been implementing the Charging Schedule since November 2017. In summary, the Charging Schedule set out the following levy rates. For 'market' residential development, there are to be three charging zones:

- Zone 1 - £120 per square metre;
- Zone 2 - £85 per square metre; and
- Zone 3 - £0 per square metre.

Zone 3 effectively zero-rates a series of strategic sites identified in LPP1. These are: Crab Hill, Monks Farm, Grove Airfield, East of Coxwell Road (Faringdon), Land South of Park Road (Faringdon), South of Faringdon, North of Shrivenham and Didcot Power Station. Zone 2 includes other defined land in Wantage, Grove and Faringdon. Zone 1 represents the remaining parts of the district.

It is important that the levy charge is borne in mind in any consideration of infrastructure requirements and delivery. CIL is not expected to cover the costs and pay for all of the infrastructure required, but it is expected to make a significant contribution. The Council is about to re-consider the Regulation 123 List that accompanies the CIL Charging schedule, to ensure that the balance of infrastructure to be delivered via the use of CIL receipts, and that to be delivered by Section 106 Agreements attached to individual sites, is correct and appropriate for the delivery of the LPP2 sites.

Developer Contributions SPD

The VoWH Developer Contributions – Delivering Infrastructure to Support Development SPD was published in June 2017. Referencing the strategy and growth plans set out in the LPP1, and with direct reference to the Council's

decision to implement a CIL, it sets out a more detailed strategy for how the Council will ensure new development contributes to infrastructure provision.

The Developer Contributions SPD sets out the inter-relationship between CIL, S106 planning obligations, S278 Agreements, and planning conditions.

It also documents the intended approach for securing the delivery of the following infrastructure items: affordable housing; education; transport; recreation and leisure (incorporating: outdoor sports and recreation, open space, play areas, allotments, and social and community facilities); essential services (incorporating: health care, fire and rescue, community safety and policing, and cemeteries); place-making; employment, skills and training; environmental impacts (incorporating: green infrastructure and biodiversity, and waste & recycling, air quality, flood protection and water management, and waste water); utilities; and street naming.

2.3.3 Vale of White Horse Local Plan Part 2

Between March and May 2017, the Council carried out formal consultation of the LPP2 – Preferred Options. Between October and November 2017, the Council carried out formal consultation on the LPP2 – Publication Version. The Council intends to submit the LPP2 in February 2018. The LPP2 complements the LPP1 by setting out:

- policies and locations for new housing to meet the Vale’s proportion of Oxford’s housing need, which cannot be met within the City boundaries, as agreed by the Oxford Growth Board;
- policies for the part of Didcot Garden Town that lies within the Vale of White Horse District;
- detailed development management policies to complement the strategic policies set out in the Part 1 plan and replace the remaining saved policies of the Local Plan 2011, where appropriate, and
- additional site allocations for housing.

The Council is proposing to meet all of its proportion of Oxford’s unmet need in the Abingdon-on-Thames and Oxford Fringe Sub Area. The Council consider this approach will achieve a more sustainable pattern of development as the Abingdon-on-Thames and Oxford Fringe Sub Area is closest to Oxford, has frequent and reliable public transport linkages to Oxford, and the greatest opportunity for enhancement to sustainable modes. This approach is also consistent with the key focus of the Oxford Spatial Options Assessment and the scope of the spatial options considered within the assessment. Therefore, the total of the unmet need of 2,200 dwellings has been added to the Abingdon-on-Thames and Oxford Fringe Sub Area.

The LPP2 also sets out a new policy to support the delivery of the part of Didcot Garden Town that lies within the district, as well as continuing to support growth in the Science Vale area. To support the Science Vale area, the plan allocates additional sites for 1,400 dwellings within the South-East Vale Sub-Area.

3 Study Assumptions

3.1 Scale of Growth

This reports complements the IDP (December 2016) produced to support the VoWH LPP1. The previous IDP sets out the strategic context for infrastructure issues across the VoWH area. This report does not reproduce or duplicate that original work, and instead focuses on providing the details on infrastructure requirements for the sites being put forward in the VoWH LPP2.

The Council has identified seven sites to be allocated in the LPP2. For completeness, the seven sites proposed, and which feature in this IDP, are set out in Table 1 below.

Table 1: List of seven sites identified in the LPP2 – Publication Version

Site	Number of Dwellings
Harwell Campus	1,000
North West Grove	400*
Dalton Barracks (Shippon)	1,200*
East Kingston Bagpuize	600
South East Marcham	90
North of East Hanney	80
North East of East Hanney	50
TOTAL	3,420

* *N.B.* Denotes that sites would also be expected to deliver beyond 2031.

As well as the overall quantum of housing, it is also important to consider the trajectory for housing delivery as this influences the requirement for infrastructure, and also the timescales for when infrastructure is required. An indicative housing trajectory for the seven sites identified in the LPP2 is set out in Table 2 below.

Table 2: Indicative housing trajectory for LPP2 sites

Site	2019/20	2020/1	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Harwell Campus		50	100	100	150	150	150	150	100	50		
North West Grove										100	150	150
Dalton Barracks					50	100	150	150	150	200	200	200
East Kingston Bagpuize		50	100	100	100	100	100	50				
South East Marcham	45	45										
North of East Hanney		40	40									
North East of East Hanney		25	25									
TOTAL	45	210	265	200	300	350	400	350	250	350	350	350

3.2 Use of Evidence

This IDP utilises secondary source evidence and material to identify the infrastructure requirements and costs for each of the seven sites. The information and evidence is based on:

- The Council's own internal work and evidence base documents prepared for LPP1, LPP2 Preferred Options consultation stage, and LPP2 Publication Version consultation stage;
- Consultation with statutory providers, and their submissions to the LPP2 Preferred Options consultation stage, and the LPP2 Publication Version consultation stage; and
- Consultation with landowners and developers of each of the seven sites, and their submissions to the LPP2 Preferred Options consultation stage, and the LPP2 Publication Version consultation stage.

The documents used to inform the IDP are listed in Appendix B.

3.3 Indicative Costs

The costs for the infrastructure items have been drawn from a variety of different sources, this includes the VoWH IDP (2016); data and information provided by statutory infrastructure providers, landowners, site promoters, and developers; and intelligence and information provided by VoWH planning officers.

Where it has not been possible to identify costs directly from the above sources, appropriate secondary source information has been used to calculate values. For example, sport and leisure infrastructure costs have been produced using Sport England's facility costs (Q2 2017), and the Spon's Architects' and Builders' Price Book (2017) (hereon Spon's).

Costs associated with transport schemes have been drawn from an analysis of comparator schemes that have recently occurred in the VoWH area. It is accepted that each site is unique and different, and that previous costs are not a perfect indicator of future costs. However, in order to provide a frame of reference for considering the effect of infrastructure requirements on the viability of the sites identified in the LPP2 it has been deemed worthwhile to set out indicative costs. Many of these costs are set out as a range, recognising that costs will likely change over time, and that further technical analysis and highway scheme design will alter the final transport infrastructure costs.

It is important to note that the costs identified are indicative, and may change over time. The final costs for any infrastructure items will be subject to further inputs from statutory providers (where relevant), and will be subject to refinement as and when detailed discussions take place as part of the development management process of determining future planning applications for each site.

3.4 Status of IDP

An IDP is intended to be a 'live' document that can be updated and reviewed at regular intervals. Where new or different information is received by the Council, or indeed the Council's own evidence base changes, it will be appropriate to review the IDP and amend the identified infrastructure requirements where necessary.

This issue is perhaps of greater importance when considering a 'site-specific' IDP, where an assessment of infrastructure is set against the acknowledgement that some of the sites are not expected to be built out until towards the end of the plan period, and that the context and circumstances of these sites may have changed by the point in time when a planning application is submitted to the Local Planning Authority.

4 Strategic Infrastructure

4.1 Overview

As noted in Section 2, there are items of infrastructure that are defined in strategy documents prepared by other organisations that will deliver benefits to the whole of the VoWH area, and in turn help support the delivery of the seven sites identified in the LPP2.

One of the main challenges in presenting a site-specific IDP is being able to differentiate between items of infrastructure that are needed solely to make a site acceptable; versus strategic infrastructure that is being delivered to address more strategic issues.

This section of the IDP aims to draw out the strategic infrastructure that is planned within the VoWH area, but which also benefits the planning and delivery of the seven sites identified in the LPP2.

Referencing the strategies and documents identified in Section 2, the strategic level infrastructure items have been separated out in to transport (shown in Section 4.2), and education (shown in Section 4.3). Section 4.4 also provides a strategic overview of utility provision and the organisations involved.

4.2 Strategic Transport Infrastructure

In order to achieve a sustainable transport network in the VoWH area, the Council is working alongside OCC, South Oxfordshire, Oxfordshire Local Enterprise Partnership (OxLEP), Oxfordshire Growth Board, and other partners to understand the transport infrastructure requirements in the district.

From this joint-working a number of transport issues and projects have emerged. These are captured in OCC's Local Transport Plan, the OXIS report, and the VoWH's own ETI report, and Sustainable Transport Study for the Abingdon to Oxford Corridor. Each of these is briefly summarised below.

The content and intent behind each of these strategies is important because they set out the strategic level transport infrastructure that help to facilitate the overall aims of the LPP2 sites.

4.2.1 Local Transport Plan 4: Connecting Oxfordshire (2016)

OCC has adopted the Local Transport Plan: Connecting Oxfordshire (LTP4) (2016), which revises OCC's policy and strategy for developing the transport system in Oxfordshire through to 2031. The LTP4 provides overarching policy and strategy for improving transport infrastructure, and also sets out some specific interventions based on a series of county-wide strategies, corridor strategies, and area strategies. The following are relevant for the VoWH area:

1. **Countywide Strategies** – Bus Strategy, Rail Strategy, Active Healthy Travel Strategy, and Freight Strategy;
2. **Area Transport Strategies** – As part of the original LTP agreed in 2015, a series of area transport strategies were agreed. This includes a strategy for Science Vale, which defines the transport priorities for Science Vale to improve access to the Enterprise Zone sites at Milton Park and Harwell and Culham Science Centre. The Science Vale Transport Strategy includes the following relevant infrastructure proposals:
 - A scheme to provide south-facing slip roads at Lodge Hill interchange [*this scheme has now received funding*];
 - Park and Ride at Lodge Hill Interchange;
 - A new railway station / interchange at Grove;
 - A fully integrated public transport system with bus priority measures, in accordance with Science Transit and the Oxfordshire Bus Strategy and Rail Strategy;
 - Delivering the Wantage Eastern Link Road (including safeguarding and protecting the ability to provide the link road);
 - Delivering Science Bridge and widening of A4130;
 - Delivering Harwell Link Road section 1 (B4493 to A417) and Harwell Link Road section 2 (Hagbourne Hill);
 - Improving Harwell campus entrance;
 - Delivering improvements along the A417 corridor;
 - Delivering improvements at Steventon traffic lights at the A4130 / B4017 junction and improvements to Featherbed Lane;
 - Reducing congestion at Rowstock roundabout;
 - Promoting capacity improvements to the A338 / A415 Frilford lights junction; and
 - Providing new and substantially upgraded strategic cycle routes to Milton Park, Harwell and Culham Science Centre through the Science Vale cycle strategy.
3. **Corridor Strategies** – A420 Route Strategy – which identifies the following three primary priority schemes:
 - upgrading of the A420 / A417 Park Road junction, Faringdon;
 - securing a signalised junction improvement at the A420 junction with Coxwell Road to accommodate known housing growth in the area; and
 - securing a new junction(roundabout) near Highworth Road, Shrivenham in proximity to the Strategic Site allocation for 500 dwellings.
4. **Other Studies** – Park and Ride Report (May 2016) – which sets out proposals for two Park and Ride sites, one at Lodge Hill, and one at

Cumnor. Both of these sites are expected to be delivered in 2026 to 2031 and so feature towards the end of the plan period identified by the LPP2. The LPP2 makes provision for these two sites by safeguarding land within the plan for their construction.

Oxfordshire County Council – Future Transport Projects

Alongside the LTP4, as part of their day-to-day operations, OCC identify a series of ‘future transport projects’, where they are already committed to delivering transport infrastructure improvements across the county. There is considerable consistency between those schemes and proposals identified in the LTP4, and those scheduled to be delivered by OCC. Those identified future transport projects that of relevance for the VoWH area are:

- Featherbed Lane and Steventon Lights;
- Harwell Campus Entrance;
- Hinksey Hill Interchange; and
- Lodge Hill Interchange.

Many of these projects are components of the Growth Deal and City Deal as set out in Section 2. For example, the Hinksey Hill Interchange project provides Stage 1 of the Oxfordshire Science Transit Network, as identified in the City Deal commitment. The aim of the Hinksey Hill Interchange is to unlock capacity, particularly for express bus services.

4.2.2 Oxfordshire Infrastructure Strategy (2017)

The OXIS Stage 1 report (April 2017) and the OXIS Stage 2 report (November 2017) set out a series of strategic transport projects. Again, many of the project and items of infrastructure identified are consistent with those set out in LTP4, in other strategies produced by OCC, or document produced by other statutory providers. On the whole, the strategies and documents are aligned, resulting in a consistent picture of what strategic level infrastructure should be prioritised across Oxfordshire.

Those items of infrastructure set out in the OXIS reports that are of relevance for the VoWH area include:

1. Regional Infrastructure Projects include:

- Wantage & Grove Station and new inter-regional service – which is identified to be delivered in the period 2021-2026.

2. Countrywide Infrastructure includes:

- Park and Ride - A34 (South) Lodge Hill corridor including Lorry Park – which is identified to be delivered in the period 2026-2031.
- Park and Ride - A34 (North) corridor – which is identified to be delivered in the period 2021-2026, and 2026-2031.

- Park and Ride - A420 Corridor Park & Ride Cumnor – which is identified to be delivered in the period 2021-2026, and 2026-2031.

3. Corridor 2 – Knowledge Spine South infrastructure projects include:

- Wantage town centre bus interchange and public realm improvements;
- A34 bus lane between Lodge Hill and Hinksey Hill Junctions;
- Featherbed Lane and Steventon Lights;
- Harwell Campus Access Improvements (Fermi and Curie Avenues);
- Harwell Campus Entrance (Thomson Avenue);
- Harwell Link Rd Section 1 B4493 to A417;
- Lodge Hill south facing slips;
- Marcham Bypass;
- Milton Interchange - Milton Park - north facing slips;
- Wantage Eastern Link Road;
- Milton Enterprise Bridge;
- Science Vale Cycle Network Improvements;

4. Corridor 6 – A420 Corridor infrastructure projects include:

- A420 Corridor Improvements.

4.2.3 VoWH's Evaluation of Transport Impacts (2017)

The LPP2 Evaluation of Transport Impacts - Stage 2 report was finalised in September 2017. The ETI work was jointly commissioned by the Council and OCC, and considers the impact on the strategic highway network from all of the proposed seven sites identified in the LPP2.

The ETI uses the Oxfordshire Strategic Model and assesses the impact of a series of different growth scenarios. Option 2 is the modelled scenario that is most similar to the planned growth set out in LPP2.

The following conclusions emerge from the ETI:

- When comparing the difference between the Do-Minimum scenario and each of the Options, the trips generated by additional dwelling is likely to increase total delay, travel time, travel distance, with average speeds modelled to reduce.
- In examining average delay/vehicle (pcu), which is more relatable to the delay that individual vehicles may experience in the forecasts, the ETI shows that delay per pcu is forecast to increase by less than ten seconds among all scenarios in comparison with the Do-minimum. Option 2 represents the middle outcome in terms of delays (i.e. less than Option 1, but more than Option 3).

In terms of specific conclusions for Option 2, the ETI concludes the following impacts on the key highway corridors:

Table 3: ETI Conclusions on the Impact of Option 2

Road	Morning Peak Hour Impacts	Evening Peak Hour Impacts
A34	At Lodge Hill interchange: the northbound on-slip to the A34 and the merge is forecast to operate at capacity.	At Botley interchange: <ul style="list-style-type: none"> The northbound off-slip from the A34 is forecast to operate at capacity.
		At Marcham interchange: <ul style="list-style-type: none"> The southbound on-slip to the A34 and the merge is forecast to operate at capacity.
A415	Forecast differences are only observed in the evening peak hour.	<ul style="list-style-type: none"> The eastbound approach (Frilford Road) towards the junction of A415/A338 is forecast to operate at capacity
A420	Forecast differences are only observed in the evening peak hour.	<ul style="list-style-type: none"> The eastbound approach towards the junction of A420/Abingdon Rd is forecast to operate at capacity. Changes under Option 2 may be related to the proximity to the proposed development at Dalton Barracks, Marcham and East of Kingston Bagpuize.

Modelled in the ETI are the effect of the following mitigation measures:

- A34 bus lane northbound between Lodge Hill and Hinksey Hill junctions and associated improvements at Hinksey Hill;
- Park and Ride sites at Cumnor and Lodge Hill;
- Bus service frequency improvement between Abingdon and Oxford via Dalton Barracks, and
- New north-facing slips between the A34 and Milton Park to the north of the current Milton Interchange.
- New slip roads will be added to the network (Figure 19), joining the current priority junction at High Street/Park Drive. Network assumptions are:
 - The current priority junction will become a 5-arm roundabout
 - The new slip roads will be one lane, with flared approach to the roundabout
 - The average link speed will be 40 mph
 - Additionally, modelled traffic signal timings were optimised.

This highlights the continuity between the strategic transport matters identified by OCC, OXIS and the Council, and demonstrates that the package of sites being put forward in LPP2, and consider under Option 2 in the ETI, do not significantly

affect the highway network and that a package of strategic and local transport measures appears capable of mitigating the impacts of development.

4.3 Strategic Education Infrastructure

4.3.1 Overview

The planning and delivery of education is also a strategic issue, considered and managed at the county level by OCC as part of their statutory duty. The OXIS reports and OCC's own Pupil Place Plan (PPP) (2017 – 2021) set out the strategic perspective on the current and future provision of education in Oxfordshire and the VoWH area.

4.3.2 Oxfordshire Infrastructure Strategy (2017)

The OXIS reports cover the strategic issues associated with planning and delivering education infrastructure across the county through to 2031 and 2040. In summary, the OXIS reports highlight the following issues regarding education provision:

- There is a surplus of 6,527 places (or 3,881 if 95% occupancy is to be assumed, as per Audit Commission guidance) for primary education. With the modelled forecasts indicating a gross requirement for 15,800 additional primary education places between 2016 and 2040, which equates to an additional 75.4 Forms of Entry across Oxfordshire.
- There is a surplus of 8,903 places (or 6,751 if 95% occupancy is to be assumed, as per Audit Commission guidance) for secondary education. With the modelled forecasts indicating a gross requirement for 15,945 additional secondary education places between 2016 and 2040, which equates to an additional 76 Forms of Entry across Oxfordshire.
- That approximately 1-2% of pupils resident within the County attend special schools; and that the modelled forecasts indicate a gross requirement for 320 additional SEN places between 2016 and 2040 across Oxfordshire.
- That the existing Further and Higher Education estates of a number of colleges are due to be consolidated, with the potential to reduce these by up to half compared with 2016 levels. With the modelled forecasts indicating a gross requirement for 3,475 additional FE places between 2016 and 2040 across Oxfordshire.

Specifically, for the VoWH area, the OXIS reports note the following requirements in terms of education provision through to 2031.

Table 4: Education Capacity and Requirements in Vale of White Horse through to 2031 (OXIS reports – April and November 2017)

Education Type	Existing No. of Schools	Existing Capacity	Total Pupil Numbers (May 2016)	Spare Places (at 95% capacity)	Places Required through to 2031	Additional FE Required through to 2031
Primary	49	10,256	9,215	581	3,699	17.6
Secondary	6	7,625	6,295	949	2,497	11.9
SEN	2	n/a	164	n/a	69	n/a
Further Education	1	n/a	n/a	n/	518	n/a
Adult Learning	2	n/a	n/a	n/a	689	1,134 sq.m.

In terms of specific plans for primary school provision in the VoWH area through to 2031, the OXIS reports note the following:

- Two new schools at the Valley Park strategic site;
- New school at NW Abingdon;
- New school at Harwell Campus;
- New school at Crab Hill, Wantage; and
- Two new schools at Grove Airfield.

The OXIS reports also note the plans for secondary school provision in the VoWH area through to 2031, which include:

- A possible new secondary school at the former Grove Airfield site.

For SEN, the OXIS reports set out planned provision in the VoWH area through to 2031, which includes:

- Considerable proposed expansion to SEN facilities within Vale of White Horse (location to be determined).

For Further Education and Adult Learning, the OXIS report sets out planned provision in the VoWH area through to 2031, which includes:

- Expansion of further and adult education facilities at Faringdon Community College.

Provision of primary, secondary, SEN, Further Education, and Adult Learning across South Oxfordshire, West Oxfordshire, Cherwell, and Oxford City is also noted.

4.3.3 Oxfordshire County Council – Pupil Place Plan (2017)

OCC's PPP analyses the capacity of schools and educational establishments across the county. It also sets out the planned provision of new schools, and those planned for the VoWH area include:

- Grove Airfield – an ‘all-through’ free school (subject to final approval by the Secretary of State), which should be open in 2020, and is set to be sponsored by Vale Academy Trust; and
- North East Wantage (Crabhill) – a 2 form entry primary school, being directly delivered by housing developer, which is forecast to be open in 2021 (although this date is to be confirmed). No sponsor has yet been identified for this school.
- North Abingdon – a 1.5-2 form entry primary school, subject to planned housing. No sponsor has yet been identified for this school.
- Grove Airfield – a 2 form entry primary school, subject to planned housing. No sponsor has yet been identified for this school.

The PPP also notes that a series of schools have been identified as being required, subject to the approval of local plans. Specific reference is made to the pending approval of the LPP2, with the PPP setting out that the following additional schools would be required:

- Abingdon – Dalton Barracks – 1 primary school;
- Harwell Campus – 1 primary school; and
- Kingston Bagpuize / Southmoor – 1 primary school.

The PPP also reviews capacity at secondary schools, and indicates how they can be affected by growth from a range of sites across a catchment area, and across the district as a whole. Those secondary schools which may be affected by the seven sites identified in the LPP2 are:

- Fitzharrys School (Abingdon), John Mason School (Abingdon), and Larkmead School (Abingdon) – which may be affected by development at South East of Marcham and Dalton Barracks. It should be noted however, that the Europa School UK opened in September 2017, boosting secondary school capacity in the ‘Abingdon planning area’ defined by OCC. No direct requirement for a new secondary school has been identified by OCC.
- King Alfred’s (Wantage) – which may be affected by developments at North West of Grove, North of East Hanney, and North East of East Hanney. The Pupil Place Plan notes that the scale of growth planned exceeds the expansion potential of King Alfred's Academy, and a new school is therefore planned on Grove Airfield. Until this school opens, King Alfred's is increasing its intake to meet needs.
- OCC has also suggested that a new secondary school may be required on the Dalton Barracks site to account for growth and demand, particularly taking account of growth beyond the Local Plan period. The secondary school at Dalton Barracks would likely provide up to 1,500 places to provide flexibility for planning across the wider area. In terms of delivery this would require provision of a 10.55 ha school site.

4.4 Strategic Utility Infrastructure

4.4.1 Electricity

The energy industry in the UK is separated between the generators, the network operators and the suppliers. Electricity transmission and distribution sections are owned by separate companies. National Grid owns and maintains the electricity transmission system in England, and provides the electricity supply from generation to local distribution companies. There are six Distribution Network Operators (DNOs) in Great Britain. DNOs own, operate, and maintain the distribution networks and charge suppliers for using the distribution system.

The local DNO for the VoWH area is Scottish and Southern Electricity Networks (SSEN), who distribute electricity to homes and businesses throughout the area. The electricity supply in the area is fed from the 400/132kV grid supply point (GSP) at Cowley, which is owned and operated by National Grid. Electricity is then stepped down from 132kV to 33kV at Bulk Supply Points (BSP) at Drayton and Oxford. The 33kV network then connects to Primary Substations, which step down the voltage again to 11kV and 6.6kV distribution mains which run along roads within a neighbourhood area. These in turn connect to small local secondary substations and convert the electricity to a useable low voltage which feeds individual properties.

It is considered that the most likely hurdle to proposed development in relation to electrical supply is the available capacity within the Primary Substations (33kV/11kV).

As with all DNOs, SSEN regularly publish a Long Term Development Statement (LTDS) which provides the firm capacities and forecast electrical demands for each of the primary substations within their service area. This information has been utilised in each assessment of demand and capacity for each site in the LPP2, with further details set out on Section 5 to Section 11.

For the purposes of this assessment, developments have been assumed to be served by their closest primary substation, unless otherwise informed by SSEN. Connection offers are made by SSEN on a first come first served basis, and so there is the potential for alternative developments to utilise the remaining available capacity before these developments are brought forward. Early connection applications to SSEN are recommended who are then able to fully assess the Primary Substation and 11kV network to assess the requirements of each development and provide full connection costs.

4.4.2 Gas

Gas Distribution Network Operators (DNOs) receive high pressure gas from National Grid's transmission pipelines. Gas enters the local network at high pressure and through a series of pressure reducers, governors and gasometers and increased mains sizes, the pressure is adjusted for distribution to premises.

Southern Gas Networks (SGN) is the DNO for gas in the VoWH area. SGN also produce a LTDS in order to forecast their demand and supply for the next ten

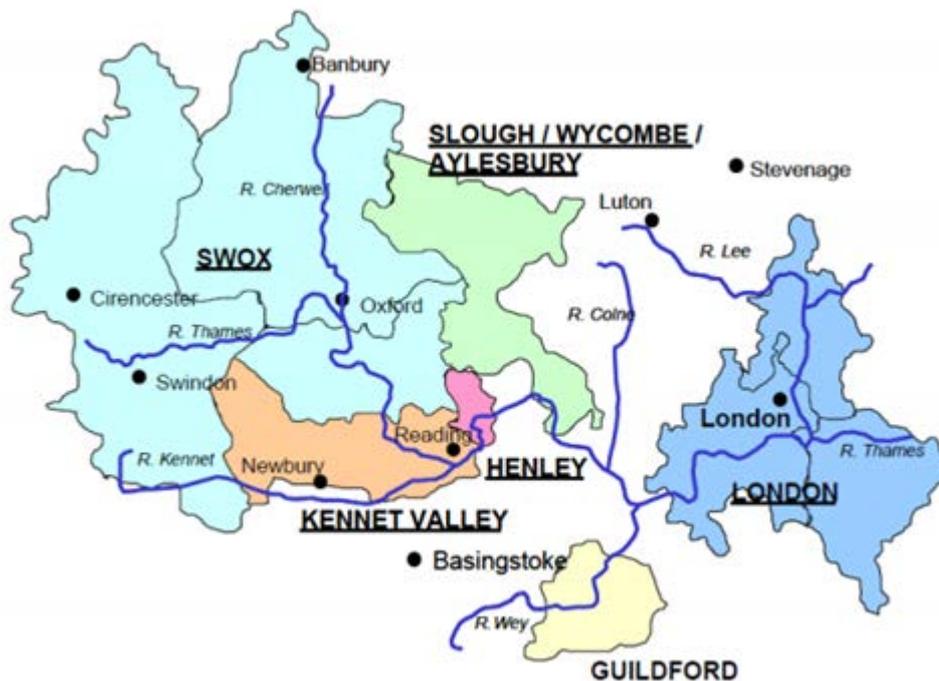
years. According to the LTDS (2017), there is an overall annual reduction in gas demand due to less than favourable economic outlook, increases in UK gas prices and the increase in renewable energy.

4.4.3 Water Supply

The regulated water company in the area is Thames Water. Thames Water is responsible for the full range of water supply processes including production, treatment, distribution, metering and billing. The Thames Water supply area covers around 8,000 square km, and is divided into six water resource zones (WRZ). The proposed development sites sit within the Swindon and Oxfordshire (SWOX) and Kennet Valley WRZs.

In the Thames Valley (the region for Thames Water supply zones outside of London) the water supplies are sources mainly through surface water abstraction (30% of supply) and by groundwater abstraction (70% of supply).

Figure 1: Water Resource Zones in the Thames Water Supply Area



Thames Water have used local authority (set out in local plans) growth projections to estimate a forecast total increase in population within their supply area. Thames Water's figures show an increase of between 2 million and 2.9 million people by 2040 (three quarters of which is forecast in London).

Over the same planning period, the baseline water supplies are also expected to reduce. The Thames Water 'Water Resource Management Plan 2015-20240' (WRMP) provides a summary of the supply demand balances for each WRZ to understand if they have sufficient water to meet need over the planning period.

Table 5 below shows the current and forecast supply demand balance in each of the water resource zones, which indicates that SWOX will experience water supply deficits by 2020.

Table 5: Thames Water supply-demand (measured in megalitre per day) in each Water Resource Zone (deficits shown in red)

Water Resource Zone (MI/d)	2011	2015	2020	2025	2030	2035	2040
London	18.8	-59.4	-132.7	-213.1	-291.7	-361.1	-415.9
Swindon and Oxfordshire	37.34	27.08	-0.14	-12.05	-21.30	-26.70	-32.66
Slough, Wycombe and Aylesbury	21.47	11.57	7.93	4.89	0.77	-2.60	-6.09
Guilford	6.85	0.85	0.06	-1.14	-2.14	-2.85	-3.80
Henley	5.32	5.14	4.76	4.31	3.80	3.26	2.67
Kennet Valley	41.25	26.05	21.68	16.38	11.41	7.84	5.59

SWOX is predicted to have a deficit on a dry year growing from 1 megalitre per day (MI/d) in 2020 to -32 MI/d by 2040, whilst Kennet Valley will maintain a short surplus.

The Thames Water WRMP states that the preferred plan for the Thames Valley is a programme of demand reductions in the medium-term (2020-2030). This is achieved through a combination of progressive metering, water efficiency and leakage control measures.

Thames Water is developing its long-term strategy to overcome the large deficit. This includes looking into new tools for assessing the costs and benefits to target mains replacement, new meter technology developments in smart metering, and developing strategies for continued performance in droughts. Long-term plans also call for an investigation of large resource schemes which would supply necessary additional water resource from the mid-2020s onwards. This may have infrastructure requirements within the VoWH area.

Ongoing consultation with Thames Water through the development of these sites will be required to ensure sufficient water supply is generated. Additional discussions will be required regarding the local distribution network which would supply each development. Generally, Thames Water have concerns regarding the capacity of the existing water supply network. They would have to undertake detailed assessments to investigate each proposal (both individually and cumulatively), with upgrades to their assets having up to three years lead in time. They have noted that ‘developers will be required to demonstrate that there is adequate water supply capacity both on and off the site to serve the development and that it should not lead to problems for existing or new customers. In some circumstances it may be necessary for developers to fund studies to ascertain whether the proposed developments will lead to overloading of existing water infrastructure.’

4.4.4 Foul Water

Wastewater treatment refers to the treatment of both domestic and commercial waste water, including from toilets, baths, and washing machines, as well as industrial waste. It can also be rainwater run-off from roads and other impermeable surfaces such as roofs and pavements. If left untreated, this can cause contamination and significant adverse impacts on the water environment, including oxygen depletion, eutrophication of water as a result of the build-up of nutrients, and sewage litter. Wastewater can be treated for appropriate disposal or reuse of sewage sludge.

Thames Water operate and maintain the Waste Water Treatment Works (WwTWs) in the VoWH area. Thames Water provide wastewater services to 15 million customers who fall within their catchment, and operate 108,000km of sewer through which an average of more than 4.4bn litres of wastewater is collected every day. DNOs have a statutory obligation to allow foul connections for new developments (subject to costs). However, this is not the case for surface water, which may therefore have to drain to the nearest watercourse (subject to flow restrictions).

5 Harwell Campus

5.1 Overview

The site is located to the north of the existing Harwell Campus employment site. LPP2 Core Policy 4a identifies that the site is capable of accommodating 1,000 dwellings.

The housing trajectory provided by the Council identifies the following delivery timetable for the site: 50 dwellings in 2020/2021, followed by 100 dwellings per annum in 2021/2022 and 2023/2023, increasing to 150 dwellings per annum from 2023/2024 through to 2026/2027. The site then reduces output to 100 dwellings per annum in 2027/2028, and then 50 dwellings in 2028/2029.

The site is located in 'Zone 1' of the Council's CIL Charging Zone. Residential development in Zone 1 is subject to a levy charge of £120 per square metre. Taking account of the Council's affordable housing requirements (35%), and at an average of 87m² per dwelling, the site can be expected to realise a CIL receipt of approximately £6,786,000 (subject to final design details).

The Council is preparing a Harwell Campus SPD, which will set out the principles for how the site will be built out. The SPD will provide further details on how residential development will help meet the specific needs of the campus and assist in supporting the delivery at least 5,400 net additional jobs by 2031.

Residential development at Harwell Campus will deliver specialist accommodation, serving the unique needs of the wider campus, and therefore the people living at the site will have a different set of infrastructure needs than those generated by a typical development proposal. As such, this may alter the exact infrastructure that is delivered on the site. In addition, it may be that future infrastructure needs can be met through enhancing existing provision that is already in place at the campus, as opposed to delivering brand new infrastructure.

The SPD will help to resolve these issues, and will include principles and parameters for how the site is expected to be delivered. The SPD will also set out the final aims for infrastructure delivery on matters such as education, healthcare, open space, green infrastructure, and community facilities.

A share of 15% of this CIL receipt will be passed on to East Hendred Parish Council and Harwell Parish Council.

5.2 Transport

Given the established built form and existing uses at Harwell Campus, no significant transport infrastructure is required to deliver the site. However, delivering 1,000 dwellings will require access and connectivity improvements in order to mitigate the impacts of the new development.

OCC, as part of their ‘future transport projects’ is committed to delivering improvements to the Harwell Campus entrance⁵. This would involve improving the existing junction of A4185 and Thomson Avenue, and is expected to be a new traffic signalised junction and a controlled crossing. Construction is expected to start in the second half of 2018. As set out in Section 2, this improved junction is also set out in the OXIS reports, and is integral to the overall delivery of the Enterprise Zone at Harwell.

Clarity is required on whether the proposed additional trips generated by the development can be accommodated by the existing access arrangements at Curie Avenue and Fermi Avenue. Improvements to these junctions is also set out in the OXIS reports, but it is not clear how these schemes will be delivered. The planned improvements to Thomson Avenue may well affect this conclusion. This should be investigated through a detailed Transport Assessment.

A Transport Assessment is also required to confirm impacts on the rest of the highway network, and to understand whether the site may be required to contribute towards mitigation on the wider network.

Proposed development at Harwell Campus will be expected to contribute to improvements to the public transport, and the walking and cycling network. More specifically, the proposed removal of the Magnox water treatment plant offers the opportunity to realign the Icknield Way PROW to its original and historical alignment. New bus stops with raised kerbs (to facilitate low floor buses) are likely to be required along existing and improved bus routes.

OCC has indicated that it is currently not possible to set out the cost of transport infrastructure required at Harwell Campus. This is because further work must be carried out to confirm both the on-site *and* off-site mitigation. This information will only emerge once the detailed Transport Assessment of the planning application is produced.

However, in order to provide a frame of reference for the cost associated with transport infrastructure improvements, a review of comparable schemes from across the VoWH area has been carried. Based upon similar schemes, the cost associated with Harwell Campus have been identified as between: £3 million and £6 million. Any final costings would be subject to agreement of the Transport Assessment and agreement between the developer, VOWH, and OCC.

5.3 Education

Given the scale of development proposed at Harwell Campus, a new primary school will be required. The primary school should incorporate pre-school provision. The developer would also be expected to make contributions to enhancing secondary school and SEN school capacity across the district.

Current evidence shows that the development should provide for a 1.5 – 2 form entry primary school. The exact size of the school will be subject to the final confirmed housing numbers and mix, which will only emerge as part of the

⁵ Oxfordshire County Council – Future Transport Projects – Harwell Campus Entrance:
<https://www.oxfordshire.gov.uk/cms/content/harwell-campus-entrance>

planning application process. Therefore, OCC's final requirements will be dependent on their analysis at the time of a planning application.

The costs associated with the delivery of a 1.5 – 2 for entry primary school (with associated pre-school) would range from £9.166 million to £10.952 million. These costs are standard costs, provided by OCC, and are based on prices as at (Q4) 2016 and would be index linked until date of payment using the PUBSEC Tender Price Index. Depending on the specific characteristics of the site, these cost may be subject to change.

Given the requirement for a new school, OCC would expect the development to provide, at nil cost, a suitable site (both in terms of size and location) which is fully serviced, fully decontaminated and remediated, so that it is fit for educational use. The developer would be required to provide specified surveys and reports (backed by warranty) to satisfy OCC that the site is suitable. Any abnormal costs associated with the site would be expected to be addressed by the developer in provide a suitable site for OCC.

5.4 Health and social care

OxCCG has identified that the total housing growth across the district will have an impact on the service delivery of primary care services.

OxCCG has prepared the South West Oxfordshire Locality-based Plan (January 2018), which sets out how primary care will be sustainably delivered across South West Oxfordshire. The plan draws upon information from the OXIS reports, and outlines how the CCG is transforming its service provision and adopting new models of care and delivery.

Although the plan does not specifically identify any direct requirements as a result of growth, it does clearly state that current primary care premises cannot absorb the anticipated population growth, with practices already struggling to find consulting and administrative space for their existing patients.

No site specific infrastructure requirements have been identified as a result of the Harwell Campus development, and the CCG has stated that they would normally pursue the expansion of existing premises, rather than the provision of new premises. However, where there is insufficient space to expand, then other options will need to be considered.

It should be noted that the site promoter, in their representation to the LPP2 from July 2016, has indicated that they wish to deliver a health centre / community centre on-site as part of the proposed neighbourhood centre.

OxCCG has advocated that further discussions should take place regarding the impact on primary care as a result of the additional demand generated by this site. As a minimum, the CCG expects the site to contribute towards general healthcare provision across the district. Subject to further discussion, it may be that the site would need to provide primary care provision on-site.

OxCCG has adopted the 'West Kent' model for seeking developer contributions from development. This is a corporate stance, and this particular model is being

followed by a number of CCG's across the country. Based upon current information, OxCCG will through use of the West Kent model, seek a contribution from the site of: £1,008,000.

5.5 Emergency services

Based upon discussions with the three emergency services, it is clear that no site specific infrastructure is required for either the fire service or the ambulance service.

A review of information set out by the Office for Nuclear Regulation (ONR) indicates that emergency situations are no longer a reasonably foreseeable problem and therefore Off-Site Emergency Planning for the Harwell site is reduced⁶

Given the size of Harwell Campus, Thames Valley Policy (TVP) has indicated that additional infrastructure would be required to mitigate the impacts of the extra demand on services. Whilst national and local funding will continue to cover salary and maintenance costs, TVP has set out that there would be insufficient funding to provide the infrastructure required for officers to carry out their jobs effectively. TVP consider that these additional infrastructure costs arise directly as a result of new residential developments and that funding is both necessary and justified.

TVP has identified that the followings infrastructure items are required:

- staff set up costs;
- provision of new vehicles and bikes;
- premises;
- mobile IT; and
- ANPR cameras.

Based upon the number of planned homes, and the expected number of incidents that would be generated, the costs associated with the provision of the above infrastructure is expected to be: £50,660.

5.6 Community and sports facilities

Outdoor Sport and Recreation

Table 6 sets out the outdoor playing pitch requirements generated by the proposed development. These calculations have been made using the standards set out in Appendix K of the LPP2.

Appendix K of the LPP2 identifies Outdoor Sport Facilities as including: 'all outdoor sports facilities whether naturally or artificially surfaced e.g. playing

⁶ ONR (13th December 2016) Harwell Off-site Emergency Planning and Prior Information Area, <http://www.onr.org.uk/pars/2016/harwell-16-021-magnox-letter.pdf>

pitches (football, rugby union, hockey and cricket), bowling greens and tennis courts’.

The calculations show that the site generates a requirement for at least two playing pitches. Using a combination of figures from Sport England’s Facilities Costs (Q2 2017), costs provided by VoWH, and, costs provided by Spon’s, it is possible to derive ‘indicative costs’ for infrastructure provision. These costs do not include any costs associated with land purchases that may be necessary to delivery infrastructure. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Table 6: Outdoor Playing Pitch Standards

Outdoor Playing Pitch Standards							
Type	Bowling Greens	Outdoor Tennis	Artificial Grass Pitches	Playing Pitch Provision			
General Standard	0.047 outdoor bowling greens per 1000	0.39 affiliated club courts per 1000	0.03 large size 3G AGP per 1000	(by year, per 1000 population)			
				2015	2021	2026	2031
				1.16 ha	1.14 ha	1.16 ha	1.19 ha
Site Specific Requirements	0.11 greens	0.93 club courts	0.07 AGPs	2.77	2.72	2.77	2.84
Source of Costs	Sport England (Q2 2017) Bowling (Turf Green)	Sport England (Q2 2017) Tennis Court (2 Courts)	Sport England (Q2 2017) Senior Football (65mm 3G pitch)	Sport England (Q2 2017) (Natural Turf Pitches) (106 x 70m ²)			
Indicative Cost of Provision	£15,400	£93,000	£66,850	£313,933			

Community Facilities

Table 7 sets out the requirements for community facilities generated by the proposed development. These calculations utilise the standards set out in Appendix K of the LPP2.

Given that LPP1 identifies Harwell Campus as one of the ‘Larger Villages’, the development should realise 120 sq.m. of community facility space, per 1000 population. On this basis, the site generates a requirement for at least 287 sq.m. of community facilities space. Using a cost of £1,514 per sq.m. set out in the Infrastructure Delivery Plan (December 2016), an indicative cost for provision of community facilities has been derived. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Table 7: Social and Community Facilities⁷

Social and Community Facilities	
Type	For Market Towns, Local Service Centres and Larger Villages
General Standard	120 sq.m. of space per 1000 population
Site Specific Requirements	287 sq.m.
Source of Cost	VoWH provided costs of £1,514 sq.m. (figure used within the Local Plan Part 1 Infrastructure Delivery Plan)
Indicative Cost of Provision	£434,518

Indoor Facilities

Appendix K of the LPP2 identifies specific standards for the provision of the following indoor facilities: sports halls, swimming pools, health and fitness centres, bowling greens, and squash.

Table 8 sets out the indoor facility requirements generated by the proposed development. These calculations utilise the standards set out in Appendix K of the LPP2. Indicative costs have been derived where possible through the use of Sport England's Facilities Costs (Q2 2017), and Nortoft cost estimates (2016). Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Table 8: Indoor Sports⁸

Indoor Sports					
Type	Sports Halls	Swimming Pools	Health and Fitness Centres	Bowling Greens	Squash
General Standard	0.29 courts per 1000	11.36 sq.m. water space per 1000	5.64 stations per 1000	0.08 rinks per 1000	0.1 courts per 1000
Site Specific Requirements	0.70	27.15	13.50	0.19	0.24
Source of Cost	Sport England (Q2 2017) Costs based on an Affordable Sports Hall 1 Court (18x10)	Sport England (Q2 2017) Costs based on 25m Pool 4 Lane (25m by 8.5m)	Sport England (Q2 2017) Costs based on a 50 Station health and fitness gym (proportion of an Affordable Sports Centre)	Sport England (Q2 2017) Costs based on 6-rink Indoor Bowls Centre	Costs based on Nortoft Cost Estimates provided to VoWH (£100,000 per court)
Indicative Cost of Provision	£493,500	£91,293	£367,200	£67,291	£24,000

⁷ Nortoft Partnerships Ltd (2016) Vale of White Horse District Council Local Leisure Facilities and Local Plan Part 2 Appendix K

⁸ Vale of White Horse (2016) Local Plan Part 2 Appendix K

The Harwell Campus SPD will help to define the final requirements for provision. Given there are existing facilities on-site it may be that the Council and site promoter agree a more flexible approach to provision that may see enhancements to existing facilities as well as the provision of new facilities.

5.7 Green infrastructure and open space

Appendix K of the LPP2 defines that ‘Open Space’ comprises ‘Children’s Play and Youth Provision’, ‘Public Open Space’ and ‘Allotments’.

Open Space

Appendix K of the LPP2 supported by Open Space Report (2017) identifies specific standards for open space provision. Table 9 below identifies that at least 5.52 hectares (15% of the site size) should be identified as Public Open Space (POS).

An indicative cost for POS has been provided using figures from Spon’s for a hectare of ‘natural and semi-natural open space’. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Any contributions to open space would need to be mindful of the content of the Green Infrastructure Strategy (2017) requirements for natural and semi-natural greenspace, amenity greenspace, and green corridors on the site. In addition, the strategy sets out criteria for the ‘creation of green links for sustainable modes of transport between Abingdon and the major employment centres’, for which Harwell Campus is identified. Further consideration would be necessary of the linkages between Open Space provision and connections to the AONB landscape designation.

Allotments

Appendix K of the LPP2 requires the provision of 0.4 hectares per 1,000 people in all areas outside the defined ‘Market Towns’. Table 9 sets out that the proposed development generates a requirement for 0.96 hectares of allotments, which, according to the Council’s Developer Contributions SPD, for a site of this size, should be provided on-site.

An indicative cost for allotments has been provided using figures from Spon’s for a hectare of ‘allotments and community gardens’. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Children’s Play and Youth Provision

Appendix K of the LPP2 requires 0.25 hectares per 1,000 of designated equipped play space, and 0.3 hectares per 1,000 for youth / MUGA provision. Given the scale of the development this would generate a requirement of 0.6 hectares for

designated equipped play space (including LAPs, LEAPs, and NEAPs), and 0.72 hectares for youth / MUGAs.

Confirmation of the final requirements for play space and youth provision, and the costs associated with this provision, will be agreed as part of the planning application process.

Further work will be necessary to generate an indicative cost for a Designated Equipped Playing Space, given the overall quantum of each 'type' of LAP, LEAP and NEAP provision has not yet been agreed. An indicative cost has however been provided for a MUGA from Sport England's Facilities Costs (Q2 2017).

Table 9: Green Infrastructure and Open Space⁹

	Children's Play and Youth Provision		Open Space	Allotments
Type	LEAP / NEAP	Youth / MUGA	Public Open Space	LPP2 Appendix K
General Standard	0.25 ha per 1000	0.3 ha per 1000	15% of the residential area	0.4 ha per 1,000 elsewhere (outside Market Towns)
Site Specific Requirements	0.60	0.72	5.52 ha	0.956
Source of Costs	Costs based on Nortoft Cost Estimates provided to VoWH	Sport England (2017) Multi-use Games Area.	Spons's Architects' and Builders' Price Book (2017) 'natural and semi-natural open space'.	Spons's Architects' and Builders' Price Book (2017) 'Allotment and Community Gardens'
Indicative Costs of Provision	£712,877	£1,335,038	£276,276	£21,935

The Harwell Campus SPD will help to define the final requirements for provision. Given there are existing facilities on-site it may be that the Council and site promoter agree a more flexible approach to provision that may see enhancements to existing facilities as well as the provision of new facilities.

5.8 Utilities

The site is a combination of greenfield and brownfield land. Land that was previously developed may require some site clearance to achieve the new residential development, and it is expected that there will be some minor costs associated with the removal of utility infrastructure and clean-up. It may be possible, masterplan depending, to re-use some of the existing infrastructure.

⁹ Appendix K Local Plan Part 2

The proposed Harwell Campus development will generate the following utility demands:

Site	Residential Units	Electrical Demand (MVA)	Gas Demand (MW)	Potable Water Demand (m3/day)	Foul Water Generation (m3/day)
Harwell Campus	1,000	2.12	3.65	264.0	250.8

5.8.1 Electricity

The site is likely to be served by Milton Primary substation. Reviewing SSENs latest forecast loads, and firm capacity for Milton Primary, there is forecast available capacity of 4.37MVA through to 2021/2022. This should be sufficient to support the number of residential units proposed as Harwell Campus. Therefore, it is not anticipated that there will be any major electrical upgrades required.

However, demand is allocated on a first come first served basis, and so this available capacity cannot be guaranteed. Confirmation of the available supply and proposed point of connection would be obtained when a formal connection application is made.

A large number of proposed connections to Milton Primary have been investigated by various developments. Should these developments connect to the network ahead of Harwell Campus, then the total available capacity would therefore reduce:

- Five connection offers have been accepted by customers, with a total demand of 6.5MVA;
- Eight connection offers have been made, with a total demand of 28.4MVA; and
- Three budget estimations have been provided, with a total demand of 25.2MVA.

Due to the uncertainty of these schemes and their progression, they have not been included in the demand assessment. However, these are large demand applications, which far outweigh the current available capacity, and should all progress then upgrades will be required to Milton Primary. SSEN are aware of this, and have plans to increase the firm capacity at Milton, depending on the status of the existing new load applications that they have received.

Milton Primary is served by Drayton BSP, which has a forecast available capacity of over 100MVA through to 2021/2022. Therefore, there are not anticipated to be any high level strategic issues to supply this development site.

5.8.2 Gas

Based upon the previous and current uses across the campus, it is not expected that there will be any significant capacity issues associated with gas utility provision, although some localised upgrades may be required.

5.8.3 Water

Thames Water has previously expressed concern over the adequacy of water supply capacity to serve the development. They currently have ongoing programmes to increase the supply capacity to this WRZ, however there is also the issue of whether the network is sufficient to distribute this increased supply.

It is highly likely that strategic upgrades to the local water distribution network will be required to support the development and ensure that sufficient capacity is brought forward ahead of need. Thames Water encourage that the developer works closely with them during the planning process to better understand the infrastructure requirements and trigger points. The costs of delivering these network upgrades will be borne by the developer and delivered by Thames Water once agreement between the parties is reached.

5.8.4 Foul

Thames Water have expressed concern that the wastewater network capacity in this area may be unable to support the demand anticipated from this development. Local upgrades to the existing drainage infrastructure may be required to ensure that sufficient capacity is brought forward ahead of the development. Where there is a potential wastewater network capacity constraint, the developer should liaise with Thames Water to determine whether a detailed drainage strategy is required as part of the planning application, which would inform what infrastructure upgrades are required and their delivery details.

DNOs have a legal obligation to provide developers with the right to connect foul water to a public sewer regardless of capacity issues. The costs of any localised upgrades to support this connection will be borne by the developer.

5.9 Flood protection and drainage

There are a number of water courses, culverts and streams present on-site. These will require appropriate enhancements, improvements and upgrades to ensure they are effective in helping to manage the surface water drainage issues associated with a larger development footprint.

A sustainable drainage system (SuDS) will need to be integrated in the design and delivery of the development, to and promote ecological and water quality benefits.

6 North West of Grove

6.1 Overview

The site is located to north-west of the village of Grove. It lies immediately to the west of the LPP1 mixed use allocation known as Monks Farm, and to the north of the LPP1 the residential allocation at Grove Airfield. LPP2 Core Policy 4a identifies that the site is capable of accommodating 400 dwellings.

The housing trajectory provided by the Council identifies the following delivery timetable for the site: 100 dwellings per annum in 2028/2029, and 150 dwellings per annum in 2029/2030 and 2030/2031. The site is therefore scheduled to be delivered towards the end of the LPP2 plan period, and as such, it is acknowledged that there is less certainty for some of the infrastructure requirements for the site.

The site is located in 'Zone 1' of the Council's CIL Charging Zone. Residential development in Zone 1 is subject to a levy charge of £120 per square metre. Taking account of the Council's affordable housing requirements (35%), and at an average of 87m² per dwelling, the site can be expected to realise a CIL receipt of approximately £2,714,400 (subject to final design details).

A total of 15% of this CIL receipt will be passed on to Grove Parish Council.

6.2 Transport

Access to the site will be facilitated by the Grove Northern Link Road providing a new road route from the A338, via the allocated Monks Farm site. It will provide access to the North West of Grove site and onward connections to the Grove Airfield scheme.

Care will be required to understand the timing and phasing of these three development sites to ensure that piecemeal development does not take place, and development occurs in the correct sequence to deliver the full benefits of the Grove Northern Link Road. As part of the Transport Assessment submitted for the site, consideration should be given to signalising Brook Lane Railway Bridge.

A Transport Assessment is also required to confirm impacts on the rest of the highway network, and to understand whether the site may be required to contribute towards mitigation on the wider network. Given the scale of development it may be that the site is required to contribute to schemes, such as Frilford Lights.

Proposed development at North West Grove will be expected to contribute to improvements to the public transport, and the walking and cycling network; and assist in the integration of the site with the proposals at Monks Farm and Grove Airfield.

Discussions on whether the site should contribute towards the re-opening of Grove station are on-going. Further correspondence with Network Rail and OCC are required before this is determined.

OCC has indicated that it is currently not possible to set out the cost of transport infrastructure required at North West Grove. This is because further work must be carried out to confirm both the on-site and off-site mitigation. This information will only emerge once the detailed Transport Assessment of the planning application is produced.

However, in order to provide a frame of reference for the cost associated with transport infrastructure improvements, a review of comparable schemes from across the VoWH area has been carried. Based upon similar schemes, the cost associated with North West of Grove has been identified as between: £1.75 million and £3.5 million. Any final costings would be subject to agreement of the Transport Assessment and agreement between the developer, VOWH, and OCC.

6.3 Education

Given the scale of development the site is not required to deliver a new primary school. However, the site is expected to contribute to the general enhancement of capacity across early years, primary, secondary and SEN education.

As highlighted in section 4.4.2 and section 4.4.3, primary and secondary school capacity is to be delivered in the adjacent Grove Airfield development site. Some care is required to ensure that the sequencing of development on the Grove Airfield site, the Monks Farm site, and the North West of Grove site is delivered in such a way that primary school capacity is not exceeded, and new provision can be realised in a manner that mitigates demand.

The PPP identifies that Grove CE School has increased their form admission number from 15 to 30 by the use of temporary buildings. The PPP notes that a feasibility study is underway into expanding the school to a 2 form entry to accommodate local housing growth, including at Monk's Farm. Expansion is expected by 2020. North Drive pre-school will leave the Grove CE School site in 2017, and the PPP highlights that if places are not re-provided there will be a shortage of early years places.

The PPP also highlights the role of Millbrook Primary School, which incorporates Grovelands Park Pre-School on site. It is notes that the school is part of the Vale Academy Trust. No capacity issues are identified.

Secondary school capacity is identified as a short term issue in the 'partnership' area covering Grove; however, the PPP identifies the planned new secondary school at Grove Airfield as a solution to any short term issues.

Depending on the how the planned development sites in Grove evolve over time, OCC's position on education capacity and the requirement for contributions may change.

6.4 Health and social care

OxCCG has identified that the total housing growth across the district will have an impact on the service delivery of primary care services.

OxCCG has prepared the South West Oxfordshire Locality-based Plan (January 2018), which sets out how primary care will be sustainably delivered across South West Oxfordshire. The plan draws upon information from the OXIS reports, and outlines how the CCG is transforming its service provision and adopting new models of care and delivery.

Although the plan does not specifically identify any direct requirements as a result of growth, it does clearly state that current primary care premises cannot absorb the anticipated population growth, with practices already struggling to find consulting and administrative space for their existing patients.

The CCG has stated that they would normally pursue the expansion of existing premises, rather than the provision of new premises. However, where there is insufficient space to expand, then other options will need to be considered. It should also be noted that the site promoter, in their representation to the LPP2 from July 2016, has indicated that they wish to deliver a health centre / community centre on-site as part of the proposed neighbourhood centre.

OxCCG has advocated that further discussions should take place regarding the impact on primary care as a result of the additional demand generated by this site. As a minimum, the CCG expects the site to contribute towards general healthcare provision across the district. Subject to further discussion, it may be that the site would need to provide primary care provision on-site.

OxCCG has adopted the 'West Kent' model for seeking developer contributions from development. This is a corporate stance, and this particular model is being followed by a number of CCG's across the country. Based upon current information, OxCCG will through use of the West Kent model, seek a contribution from the site of: £403,200.

6.5 Emergency services

Based upon discussions with the three emergency services, it is clear that no site specific infrastructure is required.

Given the nature of planned development in Grove, there may need to be some coordination provision across the Grove Airfield site, the Monks Farm site, the North West Grove site. The Council should continue to engage with the emergency service providers on this matter.

6.6 Community and sports facilities

Outdoor Sport and Recreation

Table 10 sets out the outdoor playing pitch requirements generated by the proposed development. These calculations have been made using the standards set out in Appendix K of the LPP2.

Appendix K of the LPP2 identifies Outdoor Sport Facilities as including: ‘all outdoor sports facilities whether naturally or artificially surfaced e.g. playing pitches (football, rugby union, hockey and cricket), bowling greens and tennis courts’.

The calculations show that the site generates a requirement for each type of playing pitch and outdoor sport category. Using a combination of figures from Sport England’s Facilities Costs (Q2 2017), costs provided by VoWH, and, costs provided by Spon’s, it is possible to derive ‘indicative costs’ for infrastructure provision. These costs do not include any costs associated with land purchases that may be necessary to delivery infrastructure. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Table 10: Outdoor Playing Pitch Standards

Outdoor Playing Pitch Standards							
Type	Bowling Greens	Outdoor Tennis	Artificial Grass Pitches	Playing Pitch Provision			
General Standard	0.047 outdoor bowling greens per 1000	0.39 affiliated club courts per 1000	0.03 large size 3G AGP per 1000	(by year, per 1000 population)			
				2015	2021	2026	2031
				1.16 ha	1.14 ha	1.16 ha	1.19 ha
Site Specific Requirements	0.04 greens	0.37 clubs courts	0.03 AGPs	1.11	1.09	1.11	1.14
Source of Costs	Sport England (Q2 2017) Bowling (Turf Green)	Sport England (Q2 2017) Tennis Court (2 Courts)	Sport England (Q2 2017) Senior Football (65mm 3G pitch)	Sport England (Q2 2017) (Natural Turf Pitches) (106 x 70m ²)			
Indicative Cost of Provision	£5,600	£37,000	£28,650	£125,800			

Community Facilities

Table 11 sets out the community facility requirements generated by the proposed development. These calculations utilise the standards set out in Appendix K of the LPP2.

North West of Grove is connected to the settlement of Grove, which is identified within Local Plan Part 1 Core Policy 3 Settlement Hierarchy as a 'Local Service Centre'. The development should therefore realise 120 sq.m. of community facility space, per 1000 population. Based upon the calculations, at least 115 sq.m. of space should be provided for community facilities.

Using a cost of £1,514 per sq.m. set out in the Infrastructure Delivery Plan (December 2016), an indicative cost for provision of community facilities has been derived. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Table 11: Social and Community Facilities¹⁰

Social and Community Facilities	
Type	For Market Towns, Local Service Centres and Larger Villages
General Standard	120 sq.m. of space per 1000 population
Site Specific Requirements	115 sq.m.
Source of Cost	VoWH provided costs of £1,514 sq.m. (figure used within the Local Plan Part 1 Infrastructure Delivery Plan)
Indicative Cost of Provision	£174,110

In addition, it is expected that the development would contribute towards the expansion and enhancement of Grove cemetery. Information received indicates that there is cemetery space for burials up to 2038, and cemetery space for ashes interments up to 2036. The recently signed Section 106 agreement for the Grove Airfield application required a £20,877 contribution towards the cemetery¹¹. On the basis that the Grove Airfield application was for 2,500 dwellings, it may be expected that a proportional contribution of £3,340 would be appropriate for 400 dwellings.

A final decision on the impact of the scheme on cemetery space, and whether the scheme would need to provide mitigation, will be made during the development management process associated with considering a planning application.

Indoor Facilities

Appendix K of the LPP2 identifies specific standards for the provision of the following indoor facilities: sports halls, swimming pools, health and fitness centres, bowling greens, and squash.

Table 12 sets out the indoor facility requirements generated by the proposed development. These calculations utilise the standards set out in Appendix K of the

¹⁰ Nortoft Partnerships Ltd (2016) Vale of White Horse District Council Local Leisure Facilities and Local Plan Part 2 Appendix K

¹¹ Grove Airfield (2017) Signed S106 (P12/V0299/O (12/00299/OUT)

<http://www.whitehorsedc.gov.uk/java/support/Main.jsp?MODULE=ApplicationDetails&REF=P12/V0299/O#exactline>

LPP2. Indicative costs have been derived where possible through the use of Sport England’s Facilities Costs (Q2 2017), and Nortoft cost estimates (2016).

Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Table 12: Indoor Sports¹²

Indoor Sports					
Type	Sports Halls	Swimming Pools	Health and Fitness Centres	Bowling Greens	Squash
General Standard	0.29 courts per 1000	11.36 sq.m. water space per 1000	5.64 stations per 1000	0.08 rinks per 1000	0.1 courts per 1000
Site Specific Requirements	0.28	10.86	5.39	0.076	0.07
Source of Cost	Sport England (Q2 2017) Costs based on an Affordable Sports Hall 1 Court (18x10)	Sport England (Q2 2017) Costs based on 25m Pool 4 Lane (25m by 8.5m)	Sport England (Q2 2017) Costs based on a 50 Station health and fitness gym (proportion of an Affordable Sports Centre)	Sport England (Q2 2017) Costs based on 6-rink Indoor Bowls Centre	Costs based on Nortoft Cost Estimates provided to VoWH (£100,000 per court)
Indicative Cost of Provision	£197,400	£36,517	£146,608	£26,920	£7,000

6.7 Green infrastructure and open space

Appendix K of the LPP2 defines that ‘Open Space’ comprises ‘Children’s Play and Youth Provision’, ‘Public Open Space’ and ‘Allotments’.

Open Space

Appendix K of the LPP2 supported by Open Space Report (2017) identifies specific standards for open space provision. Table 13 below identifies that at least 4.25 hectares (15% of the site size) should be identified as Public Open Space (POS).

An indicative cost for POS has been provided using figures from Spon’s for a hectare of ‘natural and semi-natural open space’. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Allotments

Appendix K of the LPP2 requires the provision of 0.4 hectares per 1,000 people in all areas outside the defined ‘Market Towns’. Table 13 identifies that the site generates a requirement for 0.38 hectares of allotments. Using the Spon’s, an

¹² Vale of White Horse (2016) Local Plan Part 2

indicative cost can be derived for a hectare of ‘allotments and community gardens’.

Confirmation of the final allotment requirements, and the costs associated with this provision, will be finalised by the Council as part of the planning application process.

Children’s Play and Youth Provision

Appendix K of the LPP2 requires 0.25 hectares per 1,000 of designated equipped play space, and 0.3 hectares per 1,000 for youth / MUGA provision. Given the scale of the development this would generate a requirement of 0.24 hectares for designated equipped play space (including LAPs, LEAPs, and NEAPs), and 0.29 hectares for youth / MUGAs.

Confirmation of the final requirements for play space and youth provision, and the costs associated with this provision, will be agreed as part of the planning application process.

Further work will be necessary to generate an indicative cost for a Designated Equipped Playing Space, given the overall quantum of each ‘type’ of LAP, LEAP and NEAP provision has not yet been agreed. An indicative cost has however been provided for a MUGA from Sport England’s Facilities Costs (Q2 2017).

Table 13: Green Infrastructure and Open Space¹³

	Children’s Play and Youth Provision		Open Space	Allotments
Type	LEAP / NEAP	Youth / MUGA	Public Open Space	LPP2 Appendix K
General Standard	0.25 ha per 1000	0.3 ha per 1000	15% of the residential area	0.4 ha per 1,000 elsewhere (outside Market Towns)
Site Specific Requirements	0.24	0.29	4.25 ha	0.29
Source of Costs	Costs based on Nortoft Cost Estimates provided to VoWH	Sport England (2017) Multi-use Games Area.	Spons’s Architects’ and Builders’ Price Book (2017) ‘natural and semi-natural open space’.	Spons’s Architects’ and Builders’ Price Book (2017) ‘Allotment and Community Gardens’
Indicative Costs of Provision	£285,151	£531,790	£212,7121	£8,682

¹³ Appendix K Local Plan Part 2

6.8 Utilities

The site is a greenfield site, therefore new utility connections to the nearby existing networks will be required. The North West of Grove development will generate the following utility demands:

Site	Residential Units	Electrical Demand (MVA)	Gas Demand (MW)	Potable Water Demand (m3/day)	Foul Water Generation (m3/day)
NW of Grove	400	0.85	1.64	105.6	100.3

6.8.1 Electricity

The site is likely to be served by Grove Primary substation. SSEN forecast that the full firm capacity at Grove Primary will already be utilised by 2021/2022. Therefore, currently, there would not be any forecast available capacity to support development at the site. The sites at North of East Hanney and North East of East Hanney are also likely to be served by the Grove Primary substation.

A number of other proposed connections have been investigated by various developments in close proximity to Grove Primary. And, three connection offers have been made, with a total demand of 7.5MVA. Should these developments connect to the network, then the total available capacity would reduce.

SSEN currently have plans to increase the firm capacity of Grove Primary through upgrading the transformers. It is expected that these reinforcement works will be sufficient to support the proposed development at North West of Grove. Note should be taken that this increased capacity will be allocated on a first come first served basis and so the availability will ultimately depend on other load requests that SSEN receive, prior to the North West of Grove site progressing through to a planning application.

Grove Primary is served by Drayton BSP, which has a forecast available capacity of over 100MVA through to 2021/2022. Therefore, there are not anticipated to be any high level strategic issues to supply this development site.

It is noted that overhead electricity pylons cross this site. These are often expensive to divert and/or bury and so are recommended to be retained, with an easement. Representations from SSEN indicate that they would expect the pylons to be retained as they are an integral part of their network. To this extent, SSEN suggested they should be viewed as permanent physical features. Should the pylons be retained the area of land could be incorporated into the site masterplan as access roads and/or open space provision. A sag/sway survey would have to be undertaken to determine the extent of the easement and clearance required for the OHLs at this Site, which is then agreed upon with SSEN. Should the developer wish to divert or bury the cables, agreement will need to be reached with SSEN, with the costs borne by the developer.

6.8.2 Gas

Given the scale of development, and the fact that it is a greenfield site, it is expected that localised reinforcement of the gas network will be required. As the site is located within proximity to developed areas, connection costs are not likely to be cost prohibitive. It is not expected that there will be any significant capacity issues associated with gas utility provision. SGN have been contacted with the anticipated demands to assess their network.

6.8.3 Water

Thames Water has expressed concern over the adequacy of water supply capacity to serve the development. They currently have ongoing programmes to increase the supply capacity to this WRZ, however there is also the issue of whether the network is sufficient to distribute this increased supply.

It is highly likely that strategic upgrades to the local water distribution network will be required to support the development and ensure that sufficient capacity is brought forward ahead of need. Thames Water encourage that the developer works closely with them during the planning process to better understand the infrastructure requirements and trigger points. The costs of delivering these network upgrades will be borne by the developer and delivered by Thames Water once agreement between the parties is reached.

6.8.4 Foul

Thames Water have expressed concern that the wastewater network capacity in this area may be unable to support the demand anticipated from this development. Local upgrades to the existing drainage infrastructure may be required to ensure that sufficient capacity is brought forward ahead of the development. Where there is a potential wastewater network capacity constraint, the developer should liaise with Thames Water to determine whether a detailed drainage strategy is required as part of the planning application, which would inform what infrastructure upgrades are required and their delivery details.

DNOs have a legal obligation to provide developers with the right to connect foul water to a public sewer regardless of capacity issues. The costs of any localised upgrades will be borne by the developer.

6.9 Flood protection and drainage

There are a number of water courses, culverts and streams present on-site. These will require appropriate enhancements, improvements and upgrades to ensure they are effective in helping to manage the surface water drainage issues associated with a larger development footprint.

A sustainable drainage system (SuDS) will need to be integrated in the design and delivery of the development, to and promote ecological and water quality benefits.

7 Dalton Barracks (Shippon)

7.1 Overview

The site is located on the current Dalton Barracks, and lies approximately 3km west of Abingdon-on-Thames town centre, and immediately north-west of the A34. LPP2 Core Policy 4a identifies that the site is capable of accommodating 1,200 dwellings.

The housing trajectory provided by the Council identifies the following delivery timetable for the site: 50 dwellings in 2023/2024, 100 dwellings in 2024/2025, 150 dwellings in 2025/2026 through to 2027/2028, followed by 200 dwellings per annum from 2028/2029 through to 2030/20231.

The site is located in 'Zone 1' of the Council's CIL Charging Zone. Residential development in Zone 1 is subject to a levy charge of £120 per square metre. Taking account of the Council's affordable housing requirements (35%), and at an average of 87m² per dwelling, the site can be expected to realise a CIL receipt of approximately £8,143,200 (subject to final design details).

The Council is preparing a Dalton Barracks SPD, which will set out the principles for how the site will be built out. The SPD will provide further details on how residential development will help deliver an exemplar, sustainable, mixed use community that reflects 'Garden Village' principles.

The SPD will include an overall masterplan for how the site is expected to be delivered, and will also outline the longer term potential for the site to deliver residential development beyond 2031. The SPD will also help finalise the aims for infrastructure delivery on matters such as education, healthcare, open space, green infrastructure, and community facilities.

A total of 15% of this CIL receipt will be passed on to St Helen Without Parish Council. The Wootton and St Helen Without Neighbourhood Area has been designated. If the Neighbourhood Plan is formally made part of the development plan prior to planning permission that first permits development, then 25% of the CIL receipt would need to be passed on to the Parish Council.

7.2 Transport

The proposed development will be required to provide improvements to the access arrangements for the site. This is expected to be achieved through the use of existing access / egress routes. One to the south, via Barrow Road; and one to the east, via Cholswell Road / Long Tow. However, the capacity of these roads / junctions and their ability to accommodate the increase in vehicle trips will need to be tested through the Transport Assessment, and appropriate mitigation measures provided.

The LPP2 makes provision for improving access by safeguarding land for a public transport and cycle link between Dalton Barracks, and the Lodge Hill Park and Ride site. The Lodge Hill Park and Ride site is identified as a priority scheme in

OXIS and features as part of OCC's LTP4. The lodge Hill slips are also identified in OXIS and as one of OCC's 'future transport projects'. As a package of measures these improvements will support the delivery of Dalton Barracks.

A Transport Assessment is required to confirm impacts on the rest of the highway network, and to understand whether the site may be required to contribute towards mitigation on the wider network. OCC has highlighted that given the scale of development it may be that the site is required to contribute to improvements on the A34, A415, Frilford Lights, and A338.

Proposed development at Dalton Barracks will be expected to contribute to improvements to the public transport, and the walking and cycling network; and assist in the integration of the site with Abingdon and Marcham.

OCC has indicated that it is currently not possible to set out the cost of transport infrastructure required at Dalton Barracks. This is because further work must be carried out to confirm both the on-site and off-site mitigation. This information will only emerge once the detailed Transport Assessment of the planning application is produced.

However, in order to provide a frame of reference for the cost associated with transport infrastructure improvements, a review of comparable schemes from across the VoWH area has been carried. Based upon similar schemes, the cost associated with Dalton Barracks has been identified as between: £3.5 million and £6.5 million.

Any scheme will be expected to be in conformity with the Dalton Barracks Comprehensive Development Framework. Any final costings would be subject to agreement of the Transport Assessment and agreement between the developer, VOWH, and OCC.

7.3 Education

Given the scale of development proposed at Dalton Barracks, a new primary school will be required. The primary school should incorporate pre-school provision. The developer would also be expected to make contributions to enhancing secondary school and SEN school capacity across the district.

Current evidence shows that the development should provide for a 2 form entry primary school. The exact size of the school will be subject to the final confirmed housing numbers and mix, which will only emerge as part of the planning application process. Therefore, OCC's final requirements will be dependent on their analysis at the time of a planning application.

The costs associated with the delivery of a 2 form entry primary school (with associated pre-school) is £10.952 million. This cost is a standard cost, based on prices as at (Q4) 2016 and would be index linked until date of payment using the PUBSEC Tender Price Index. Depending on the specific characteristics of the site, this cost may be subject to change.

Given the requirement for a new school, OCC would expect the development to provide, at nil cost, a suitable site (both in terms of size and location) which is

fully serviced, fully decontaminated and remediated, so that it is fit for educational use. The developer would be required to provide specified surveys and reports (backed by warranty) to satisfy OCC that the site is suitable. Any abnormal costs associated with the site would be expected to be addressed by the developer in provide a suitable site for OCC.

Some care is required in relation to the long term planning of primary, secondary, and SEN provision at Dalton Barracks. OCC has indicated that additional primary, secondary and SEN provision would be needed, on-site, as part of the larger-scale plans for growth beyond 2031. This should be taken into account in any masterplan prepared for the site.

7.4 Healthcare

OxCCG has identified that the total housing growth across the district will have an impact on the service delivery of primary care services.

OxCCG has prepared the South West Oxfordshire Locality-based Plan (January 2018), which sets out how primary care will be sustainably delivered across South West Oxfordshire. The plan draws upon information from the OXIS reports, and outlines how the CCG is transforming its service provision and adopting new models of care and delivery.

Although the plan does not specifically identify any direct requirements as a result of growth, it does clearly state that current primary care premises cannot absorb the anticipated population growth, with practices already struggling to find consulting and administrative space for their existing patients.

The CCG has stated that they would normally pursue the expansion of existing premises, rather than the provision of new premises. However, where there is insufficient space to expand, then other options will need to be considered.

It should be noted that the site promoter, in their representation to the LPP2 from July 2016, has indicated that they wish to deliver a health centre / community centre on-site as part of the proposed neighbourhood centre.

OxCCG has advocated that further discussions should take place regarding the impact on primary care as a result of the additional demand generated by this site. As a minimum, the CCG expects the site to contribute towards general healthcare provision across the district. Subject to further discussion, it may be that the site would need to provide primary care provision on-site.

OxCCG has adopted the 'West Kent' model for seeking developer contributions from development. This is a corporate stance, and this particular model is being followed by a number of CCG's across the country. Based upon current information, OxCCG will through use of the West Kent model, seek a contribution from the site of: £1,209,600.

7.5 Emergency services

Based upon discussions with the three emergency services, it is clear that no site specific infrastructure is required for either the fire service or the ambulance service.

Given the size of Dalton Barracks, Thames Valley Policy (TVP) has indicated that additional infrastructure would be required to mitigate the impacts of the extra demand on services. Whilst national and local funding will continue to cover salary and maintenance costs, TVP has set out that there would be insufficient funding to provide the infrastructure required for officers to carry out their jobs effectively. TVP consider that these additional infrastructure costs arise directly as a result of new residential developments and that funding is both necessary and justified.

TVP has identified that the followings infrastructure items are required:

- staff set up costs;
- provision of new vehicles and bikes;
- premises;
- mobile IT; and
- ANPR cameras.

Based upon the number of planned homes, and the expected number of incidents that would be generated, the costs associated with the provision of the above infrastructure is expected to be: £160,745.

7.6 Community and sports facilities

Outdoor Sport and Recreation

Table 14 sets out the outdoor playing pitch requirements generated by the proposed development. These calculations have been made using the standards set out in Appendix K of the LPP2.

Appendix K of the LPP2 identifies Outdoor Sport Facilities as including: ‘all outdoor sports facilities whether naturally or artificially surfaced e.g. playing pitches (football, rugby union, hockey and cricket), bowling greens and tennis courts’.

The calculations show that the site generates a requirement for each type of playing pitch and outdoor sport category. Using a combination of figures from Sport England’s Facilities Costs (Q2 2017), costs provided by VoWH, and, costs provided by Spon’s, it is possible to derive ‘indicative costs’ for infrastructure provision. These costs do not include any costs associated with land purchases that may be necessary to delivery infrastructure. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Sport England's responses to the LPP2 have indicated that they will object to the allocation of Dalton Barracks if it would result in a loss of existing playing fields and sports facilities. As noted, the Council is preparing a Dalton Barracks SPD, and it is expected that the masterplan for the site, along with further discussions with the site promoter will ensure that Sport England's concerns are addressed.

Table 14: Outdoor Playing Pitch Standards

Outdoor Playing Pitch Standards							
Type	Bowling Greens	Outdoor Tennis	Artificial Grass Pitches	Playing Pitch Provision			
General Standard	0.047 outdoor bowling greens per 1000	0.39 affiliated club courts per 1000	0.03 large size 3G AGP per 1000	(by year, per 1000 population)			
				2015	2021	2026	2031
				1.16 ha	1.14 ha	1.16 ha	1.19 ha
Site Specific Requirements	0.13	1.12	0.09	3.33	3.27	3.33	3.41
Source of Costs	Sport England (Q2 2017) Bowling (Turf Green)	Sport England (Q2 2017) Tennis Court (2 Courts)	Sport England (Q2 2017) Senior Football (65mm 3G pitch)	Sport England (Q2 2017) (Natural Turf Pitches) (106 x 70m ²)			
Indicative Cost of Provision	£18,200	£112,000	£85,950	£377,400			

Community Facilities

Table 15 sets out the community facility requirements generated by the proposed development. These calculations utilise the standards set out in Appendix K of the LPP2.

Dalton Barracks is in close proximity to the settlement of Abingdon, which is identified within Local Plan Part 1 Core Policy 3 Settlement Hierarchy as a 'Market Town'. The development should therefore provide 120 sq.m. of community facility space, per 1000 population. Based upon the calculations, at least 344.16 sq.m. of space should be provided for community facilities.

Using a cost of £1,514 per sq.m. set out in the Infrastructure Delivery Plan (December 2016), an indicative cost for provision of community facilities has been derived. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Table 15: Social and Community Facilities¹⁴

Social and Community Facilities	
Type	For Market Towns, Local Service Centres and Larger Villages
General Standard	120 sq.m of space per 1000 population
Site Specific Requirements	344.16
Source of Cost	VoWH provided costs of £1,514 sq.m. (figure used within the Local Plan Part 1 Infrastructure Delivery Plan
Indicative Cost of Provision	£521,058

Indoor Facilities

Appendix K of the LPP2 identifies specific standards for the provision of the following indoor facilities: sports halls, swimming pools, health and fitness centres, bowling greens, and squash.

Table 16 sets out the indoor facility requirements generated by the proposed development. These calculations utilise the standards set out in Appendix K of the LPP2. Indicative costs have been derived where possible through the use of Sport England's Facilities Costs (Q2 2017), and Nortoft cost estimates (2016).

Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Table 16: Indoor Sports¹⁵

Indoor Sports					
Type	Sports Halls	Swimming Pools	Health and Fitness Centres	Bowling Greens	Squash
General Standard	0.29 courts per 1000	11.36 sq.m. water space per 1000	5.64 stations per 1000	0.08 rinks per 1000	0.1 courts per 1000
Site Specific Requirements	0.83	32.58	16.18	0.23	0.29
Source of Cost	Sport England (Q2 2017) Costs based on an Affordable Sports Hall 1 Court (18x10)	Sport England (Q2 2017) Costs based on 25m Pool 4 Lane (25m by 8.5m)	Sport England (Q2 2017) Costs based on a 50 Station health and fitness gym (proportion of an Affordable Sports Centre)	Sport England (Q2 2017) Costs based on 6-rink Indoor Bowls Centre	Costs based on Nortoft Cost Estimates provided to VoWH (£100,000 per court)
Indicative Cost of Provision	£585,150	£109,552	£440,640	£81,458	£29,000

¹⁴ Nortoft Partnerships Ltd (2016) Vale of White Horse District Council Local Leisure Facilities and Local Plan Part 2 Appendix K

¹⁵ Vale of White Horse (2016) Local Plan Part 2

7.7 Green infrastructure and open space

Appendix K of the LPP2 defines that ‘Open Space’ comprises ‘Children’s Play and Youth Provision’, ‘Public Open Space’ and ‘Allotments’.

Open Space

Appendix K of the LPP2, supported by Open Space Report (2017) identifies specific standards for open space provision. Table 17 below identifies that at least 43.19 hectares (15% of the site size) should be identified as Public Open Space (POS).

An indicative cost for POS has been provided using figures from Spon’s for a hectare of ‘natural and semi-natural open space’. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Some care is required over the use of this figure for POS, as it corresponds to the entire site earmarked for the Dalton Barracks development, which is scheduled to deliver approximately 4,000 dwellings; whereas the LPP2 seeks to deliver just 1,200 dwellings.

Information provided by the site promoter has suggested that there will be a country park, of at least 80 hectares, on the site. Sport England, in their consultation responses to the LPP2, has requested that the country park, alongside the playing field provision, should be a requirement of the site.

Confirmation of the exact open space infrastructure requirements for Dalton Barracks will emerge through the preparation of the SPD that is being produced by the Council. The SPD and associated masterplan for the site will also set out how open space (and the country park) will be delivered given the phased approach to development that will happen at Dalton Barracks.

The table below provides a comparison of other examples where an equivalent size and scale of open space / country parks has been delivered in other locations across England. The final costs associated with the delivery of the open space / country park at Dalton Barracks will be determined through the SPD and when planning applications are submitted for the site.

Table 17: Comparative Examples of Country Parks and Large Green Space

Source	Metric	Total possible cost for Country Park
Newcastle under Lyme – Open Space Strategy (November 2015)	£66,925 per hectare of natural and semi-natural greenspace	£5,354,000 (for 80 hectares)
Surrey Heath – Working with Natural England (2016)	Cost of £2,600 per person, for “suitable alternative natural greenspace	£7,488,000 (1,200 x 2.4 people= 2,800)
Wokingham – Planning Advice Note (2014)	Average cost of £3,496.78 per dwelling for “suitable alternative natural greenspace”	£4,196,136 (£3,486.78 x 1,200)
Wakefield – Infrastructure Delivery Plan (2013)	Straight cost of £3.8 million for the delivery of Pontefract Park	£3,800,000
VoWH / Arup analysis of Spon’s (£50,050 per hectare)	SPONS Architects’ and Builders’ Price Book (2017) figures to calculate costs of £50,050 per hectare for “natural and semi-natural open space”.	£4,004,371 (for 80 hectares)

Allotments

Appendix K of the LPP2 requires the provision of 0.23 ha per 1,000 people in the defined ‘Market Towns’. Table 18 sets out that the proposed development generates a requirement for 1.15 hectares of allotments, which, according to the Council’s Developer Contributions SPD, for a site of this size, should be provided on-site.

An indicative cost for allotments has been provided using figures from Spon’s for a hectare of ‘allotments and community gardens’. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Children’s Play and Youth Provision

Appendix K of the LPP2 requires 0.25 hectares per 1,000 of designated equipped play space, and 0.3 hectares per 1,000 for youth / MUGA provision. Given the scale of the development this would generate a requirement of 0.72 hectares for designated equipped play space (including LAPs, LEAPs, and NEAPs), and 0.86 hectares for youth / MUGAs.

Confirmation of the final requirements for play space and youth provision, and the costs associated with this provision, will be agreed as part of the planning application process.

Further work will be necessary to generate an indicative cost for a Designated Equipped Playing Space, given the overall quantum of each ‘type’ of LAP, LEAP and NEAP provision has not yet been agreed. An indicative cost has however been provided for a MUGA from Sport England’s Facilities Costs (Q2 2017).

Table 18: Green Infrastructure and Open Space¹⁶

	Children's Play and Youth Provision		Open Space		Allotments
Type	LEAP / NEAP	Youth / MUGA	Public Open Space (a) or (b)		LPP2 Appendix K
General Standard	0.25 ha per 1000	0.3 ha per 1000	(a) 15% of the residential area	(b) Provision of a 80ha Country Park	0.23 ha per 1,000 in Market Towns
Site Specific Requirements	0.72	0.86	43.19 ha	80 ha	1.15
Source of Costs	Costs based on Nortoft Cost Estimates provided to VoWH	Sport England (2017) Multi-use Games Area.	Spon's Architects' and Builders' Price Book (2017) figures for 'natural and semi-natural open space'.	Spon's Architects' and Builders' Price Book (2017) figures to calculate costs of £50,050 per hectare for 'natural and semi-natural open space'.	Spon's Architects' and Builders' Price Book (2017) 'Allotment and Community Gardens'
Indicative Costs of Provision	£855,453	£1,594,630	£2,161,860	£4,004,371	£26,212

7.8 Utilities

The site is a combination of brownfield land that was previously the barracks and the relatively undeveloped land that was the airfield. Previously developed land will require some site clearance to achieve the new residential development, and it is expected that there will be some minor costs associated with the removal of utility infrastructure and clean-up. It may be possible, masterplan depending, to re-use some of the existing infrastructure.

The Dalton Barracks development will generate the following utility demands:

Site	Residential Units	Electrical Demand (MVA)	Gas Demand (MW)	Potable Water Demand (m3/day)	Foul Water Generation (m3/day)
Dalton Barracks	1,200	2.54	4.38	316.8	301.0

¹⁶ Appendix K Local Plan Part 2

7.8.1 Electricity

The nearest primary substation to Dalton Barracks is Wootton Road Primary. This is forecast to only have an available capacity of 1.64MVA in 2021/2022, which is insufficient for the proposed development.

However, Winsmore Lane Primary substation is also within proximity to Dalton Barracks. This has a forecast available capacity of 8.42MVA through to 2021/2022, which is sufficient to support this development.

There are a number of potential options available to support this site, either:

- transfer existing load at Wootton Road primary to Winsmore Lane primary, in order to increase the available capacity at Wootton Road;
- connect the development to Winsmore Lane primary; or
- reinforce Wootton Road primary to increase its firm capacity.

An 11kV assessment would need to be undertaken by SSEN to verify the feasibility of this network reconfiguration. Should this not be possible, SSEN will identify the minimum 33kV reinforcement scheme required to provide capacity for the new development. These assessments would be undertaken by SSEN upon receipt of a connection application.

Localised upgrades to the network may be required, but these would not be cost prohibitive to the scheme.

Wootton Road Primary is served by Oxford BSP, which has a forecast available capacity of 11MVA through to 2021/2022. There have been a limited number of connection applications made within this area and so it is unlikely that this capacity will be utilised prior to the Dalton Barracks development connecting to the network. If a large number of connection applications are submitted, SSEN would consider the reinforcement requirements to support these. Winsmore Lane Primary is served by Drayton BSP, which has a forecast available capacity of over 100MVA through to 2021/22, and so there are not capacity issues associated with this substation.

7.8.2 Gas

Based upon the current uses across the site, it is not expected that there will be any significant capacity issues associated with gas utility provision, although some localised upgrades may be required.

7.8.3 Water

Thames Water, as statutory undertaker, has expressed concern over the adequacy of water supply capacity to serve the development. Thames Water has previously expressed concern over the adequacy of water supply capacity to serve the development. They currently have ongoing programmes to increase the supply capacity to this WRZ, however there is also the issue of whether the network is sufficient to distribute this increased supply.

It is highly likely that strategic upgrades to the local water distribution network will be required to support the development and ensure that sufficient capacity is brought forward ahead of need. Thames Water encourage that the developer works closely with them during the planning process to better understand the infrastructure requirements and trigger points. The costs of delivering these network upgrades will be borne by the developer and delivered by Thames Water once agreement between the parties is reached.

7.8.4 Foul

Thames Water have expressed concern that the wastewater network capacity in this area may be unable to support the demand anticipated from this development. Local upgrades to the existing drainage infrastructure may be required to ensure that sufficient capacity is brought forward ahead of the development. Where there is a potential wastewater network capacity constraint, the developer should liaise with Thames Water to determine whether a detailed drainage strategy is required as part of the planning application, which would inform what infrastructure upgrades are required and their delivery details.

DNOs have a legal obligation to provide developers with the right to connect foul water to a public sewer regardless of capacity issues. The costs of any localised upgrades will be borne by the developer.

7.9 Flood protection and drainage

There are a number of water courses, culverts and streams present on-site. These will require appropriate enhancements, improvements and upgrades to ensure they are effective in helping to manage the surface water drainage issues associated with a larger development footprint.

Work has already been undertaken which demonstrates that there is no hydrological connection between the site and Cothill Fen, and the site and Sandford Brook.

A sustainable drainage system (SuDS) will need to be integrated in the design and delivery of the development, to and promote ecological and water quality benefits.

8 East of Kingston Bagpuize

8.1 Overview

The site is located to the east of the village of Kingston Bagpuize, and lies immediately to the east of the LPP1 residential allocation. LPP2 Core Policy 4a identifies that the site is capable of accommodating 600 dwellings.

The housing trajectory provided by the Council identifies the following delivery timetable for the site: 50 dwellings in 2020/2021, followed by 100 dwellings per annum from 2021/2022 through to 2025/2026, and then 50 dwellings in 2026/2027.

The site is located in 'Zone 1' of the Council's CIL Charging Zone. Residential development in Zone 1 is subject to a levy charge of £120 per square metre. Taking account of the Council's affordable housing requirements (35%), and at an average of 87m² per dwelling, the site can be expected to realise a CIL receipt of approximately £4,071,600 (subject to final design details).

A total of 15% of this CIL receipt will be passed on to Fyfield and Tubney Parish Council.

8.2 Transport

Drawing upon information received from OCC and from discussions with the site promoter, it is expected that the site-specific transport infrastructure requirements will include the creation of two points of access to the site – one from the A420, and a second from the A415, which will also enhance the junction to the existing business park.

Each access is expected to be achieved through the provision of a new roundabout. The new link road should be designed to remove a certain volume of the traffic passing through Kingston Bagpuize on the A415, with OCC expecting that the link road is of 'A-grade' adoptable standard.

A Transport Assessment is required to confirm impacts on the rest of the highway network, and to understand whether the site may be required to contribute towards mitigation on the wider network. OCC has highlighted that given the scale of development it may be that the site is required to contribute to improvements on the wider highway network.

Proposed development at East of Kingston Bagpuize will be expected to contribute to improvements to the public transport, and the walking and cycling network; and assist in the integration of the site with the Kingston Bagpuize and Southmoor; as well as enhancing connections to Abingdon and Marcham.

OCC has indicated that it is currently not possible to set out the cost of transport infrastructure required at East of Kingston Bagpuize. This is because further work must be carried out to confirm both the on-site *and* off-site mitigation. This

information will only emerge once the detailed Transport Assessment of the planning application is produced.

However, in order to provide a frame of reference for the cost associated with transport infrastructure improvements, a review of comparable schemes from across the VoWH area has been carried. Based upon similar schemes, the cost associated with East of Kingston Bagpuize has been identified as: £4.5 million to £8 million. Any final costings would be subject to agreement of the Transport Assessment and agreement between the developer, VOWH, and OCC.

8.3 Education

Given the scale of development proposed at East of Kingston Bagpuize, a new primary school will be required. The primary school should incorporate pre-school provision. The developer would also be expected to make contributions to enhancing secondary school and SEN school capacity across the district.

Current evidence shows that the development should provide for a 1 form entry primary school. Although, advice from OCC is that given the overall scale of planned development in Kingston Bagpuize, that the school may end up being a 2 form entry primary school. The exact size of the school will be subject to the final confirmed housing numbers and mix, which will only emerge as part of the planning application process. Therefore, OCC's final requirements will be dependent on their analysis at the time of a planning application.

The costs associated with the delivery of a 1 form entry primary school (with associated pre-school) is £7.212 million. This cost is a standard cost, based on prices as at (Q4) 2016 and would be index linked until date of payment using the PUBSEC Tender Price Index. Depending on the specific characteristics of the site, this cost may be subject to change.

Given the requirement for a new school, OCC would expect the development to provide, at nil cost, a suitable site (both in terms of size and location) which is fully serviced, fully decontaminated and remediated, so that it is fit for educational use. The developer would be required to provide specified surveys and reports (backed by warranty) to satisfy OCC that the site is suitable. Any abnormal costs associated with the site would be expected to be addressed by the developer in provide a suitable site for OCC.

8.4 Health and social care

OxCCG has identified that the total housing growth across the district will have an impact on the service delivery of primary care services.

OxCCG has prepared the South West Oxfordshire Locality-based Plan (January 2018), which sets out how primary care will be sustainably delivered across South West Oxfordshire. The plan draws upon information from the OXIS reports, and outlines how the CCG is transforming its service provision and adopting new models of care and delivery.

Although the plan does not specifically identify any direct requirements as a result of growth, it does clearly state that current primary care premises cannot absorb the anticipated population growth, with practices already struggling to find consulting and administrative space for their existing patients.

No site specific infrastructure requirements have been identified as a result of the East of Kingston Bagpuize development, and the CCG has stated that they would normally pursue the expansion of existing premises, rather than the provision of new premises. However, where there is insufficient space to expand, then other options will need to be considered.

It should be noted that the site promoter, in their representation to the LPP2 from July 2016, has indicated that they wish to deliver a health centre / community centre on-site as part of the proposed neighbourhood centre.

OxCCG has advocated that further discussions should take place regarding the impact on primary care as a result of the additional demand generated by this site. As a minimum, the CCG expects the site to contribute towards general healthcare provision across the district. Subject to further discussion, it may be that the site would need to provide primary care provision on-site.

OxCCG has adopted the 'West Kent' model for seeking developer contributions from development. This is a corporate stance, and this particular model is being followed by a number of CCG's across the country. Based upon current information, OxCCG will through use of the West Kent model, seek a contribution from the site of: £604,800.

8.5 Emergency services

Based upon discussions with the three emergency services, it is clear that no site specific infrastructure is required.

8.6 Community and sports facilities

Outdoor Sport and Recreation

Table 19 sets out the outdoor playing pitch requirements generated by the proposed development. These calculations have been made using the standards set out in Appendix K of the LPP2.

Appendix K of the LPP2 identifies Outdoor Sport Facilities as including: 'all outdoor sports facilities whether naturally or artificially surfaced e.g. playing pitches (football, rugby union, hockey and cricket), bowling greens and tennis courts'.

The calculations show that the site generates a requirement for at least one playing pitch. Using a combination of figures from Sport England's Facilities Costs (Q2 2017), costs provided by VoWH, and, costs provided by Spon's, it is possible to derive 'indicative costs' for infrastructure provision. These costs do not include any costs associated with land purchases that may be necessary to delivery

infrastructure. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process

Table 19: Outdoor Playing Pitch Standards

Outdoor Playing Pitch Standards							
Type	Bowling Greens	Outdoor Tennis	Artificial Grass Pitches	Playing Pitch Provision			
General Standard	0.047 outdoor bowling greens per 1000	0.39 affiliated club courts per 1000	0.03 large size 3G AGP per 1000	(by year, per 1000 population)			
				2015	2021	2026	2031
				1.16 ha	1.14 ha	1.16 ha	1.19 ha
Site Specific Requirements	0.07	0.56	0.04	1.66	1.63	1.66	1.71
Source of Costs	Sport England (Q2 2017) Bowling (Turf Green)	Sport England (Q2 2017) Tennis Court (2 Courts)	Sport England (Q2 2017) Senior Football (65mm 3G pitch)	Sport England (Q2 2017) (Natural Turf Pitches) (106 x 70m2)			
Indicative Cost of Provision	£9,800	£56,000	£38,200	£188,133			

Community Facilities

Table 20 sets out the community facility requirements generated by the proposed development. These calculations utilise the standards set out in Appendix K of the LPP2.

East of Kingston Bagpuize is in close proximity to the settlement of Kingston Bagpuize, which is identified within Local Plan Part 1 Core Policy 3 Settlement Hierarchy as a 'Larger Village'. The development should therefore realise 120 sq.m. of community facility space, per 1000 population. Based upon the calculations, at least 172 sq.m. of space should be provided for community facilities.

Using a cost of £1,514 per sq.m. set out in the Infrastructure Delivery Plan (December 2016), an indicative cost for provision of community facilities has been derived. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Table 20: Social and Community Facilities¹⁷

Social and Community Facilities	
Type	For Market Towns, Local Service Centres and Larger Villages
General Standard	120 sq.m of space per 1000 population
Site Specific requirements	172.08
Source of Cost	VoWH provided costs of £1,514 sq.m. (figure used within the Local Plan Part 1 Infrastructure Delivery Plan)
Indicative Cost of Provision	£260,529

Indoor Facilities

Appendix K of the LPP2 identifies specific standards for the provision of the following indoor facilities: sports halls, swimming pools, health and fitness centres, bowling greens, and squash.

Table 21 sets out the indoor facility requirements generated by the proposed development. These calculations utilise the standards set out in Appendix K of the LPP2. Indicative costs have been derived where possible through the use of Sport England's Facilities Costs (Q2 2017), and Nortoft cost estimates (2016).

Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Table 21: Indoor Sports¹⁸

Indoor Sports					
Type	Sports Halls	Swimming Pools	Health and Fitness Centres	Bowling Greens	Squash
General Standard	0.29 courts per 1000	11.36 sq.m. water space per 1000	5.64 stations per 1000	0.08 rinks per 1000	0.1 courts per 1000
Site Specific Requirements	0.42	16.29	8.09	0.11	0.14
Source of Cost	Sport England (Q2 2017) Costs based on an Affordable Sports Hall 1 Court (18x10)	Sport England (Q2 2017) Costs based on 25m Pool 4 Lane (25m by 8.5m)	Sport England (Q2 2017) Costs based on a 50 Station health and fitness gym (proportion of an Affordable Sports Centre)	Sport England (Q2 2017) Costs based on 6-rink Indoor Bowls Centre	Costs based on Nortoft Cost Estimates provided to VoWH (£100,000 per court)
Indicative Cost of Provision	£296,100	£54,776	£220,320	£38,958	£14,000

¹⁷ Nortoft Partnerships Ltd (2016) Vale of White Horse District Council Local Leisure Facilities and Local Plan Part 2 Appendix K

¹⁸ Vale of White Horse (2016) Local Plan Part 2

8.7 Green infrastructure and open space

Appendix K of the LPP2 defines that ‘Open Space’ comprises ‘Children’s Play and Youth Provision’, ‘Public Open Space’ and ‘Allotments’.

Open Space

Appendix K of the LPP2, supported by Open Space Report (2017) identifies specific standards for open space provision. Table 22 below identifies that at least 5.2 hectares (15% of the site size) should be identified as Public Open Space (POS).

An indicative cost for POS has been provided using figures from Spon’s for a hectare of ‘natural and semi-natural open space’. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Allotments

Appendix K of the LPP2 requires the provision of 0.4 ha per 1,000 people in areas outside the defined ‘Market Towns’. Table 22 identifies that the site generates a requirement for 0.57 hectares of allotments. Using the Spon’s, an indicative cost can be derived for a hectare of ‘allotments and community gardens’.

Confirmation of the final allotment requirements, and the costs associated with this provision, will be finalised by the Council as part of the planning application process.

Children’s Play and Youth Provision

Appendix K of the LPP2 requires 0.25 hectares per 1,000 of designated equipped play space, and 0.3 hectares per 1,000 for youth / MUGA provision. Given the scale of the development this would generate a requirement of 0.36 hectares for designated equipped play space (including LAPs, LEAPs, and NEAPs), and 0.43 hectares for youth / MUGAs.

Confirmation of the final requirements for play space and youth provision, and the costs associated with this provision, will be agreed as part of the planning application process.

Further work will be necessary to generate an indicative cost for a Designated Equipped Playing Space, given the overall quantum of each ‘type’ of LAP, LEAP and NEAP provision has not yet been agreed. An indicative cost has however been provided for a MUGA from Sport England’s Facilities Costs (Q2 2017).

Table 22: Green Infrastructure and Open Space¹⁹

	Children's Play and Youth Provision		Open Space	Allotments
Type	LEAP / NEAP	Youth / MUGA	Public Open Space	LPP2 Appendix K
General Standard	0.25 ha per 1000	0.3 ha per 1000	15% of the residential area	0.4 ha per 1,000 elsewhere
Site Specific Requirements	0.36	0.43	5.2 ha	0.57
Source of Costs	Costs based on Nortoft Cost Estimates provided to VoWH	Sport England (2017) Multi-use Games Area.	Spons's Architects' and Builders' Price Book (2017) 'natural and semi-natural open space'.	Spons's Architects' and Builders' Price Book (2017) 'Allotment and Community Gardens'
Indicative Costs of Provision	£427,726	£797,315	£260,735	£13,024

8.8 Utilities

The site is a greenfield site, and therefore new utility connections to the nearby existing network will be required. The East of Kingston Bagpuize development will generate the following utility demands:

Site	Residential Units	Electrical Demand (MVA)	Gas Demand (MW)	Potable Water Demand (m3/day)	Foul Water Generation (m3/day)
East of Kingston Bagpuize	600	1.27	2.19	158.4	150.5

8.8.1 Electricity

Fyfield Primary substation will likely serve the development site. SSEN forecast that there will be 7.62MVA available capacity at this substation in 2021/2022. This is sufficient to support the proposed residential development at this site. The South East of Marcham site would also likely to be served by the Fyfield Primary substation, and there is forecast to be sufficient available capacity to support both developments.

Fyfield Primary is served by Witney BSP, which has a forecast available capacity of over 20MVA through to 2021/2022. It is not anticipated that there will be any high level strategic issues to supply this development site. However, should a large number of other developments connect to primary substations served by Witney BSP prior to the East of Kingston Bagpuize site being approved, then they will use the remaining available capacity. SSEN have stated that should a

¹⁹ Appendix K Local Plan Part 2

significantly large number of applications be received in the Witney area then they will consider reinforcement options for this BSP.

It is noted that overhead electricity pylons cross this site. These are often expensive to divert and/or bury and so are recommended to be retained, with an easement. Representations from SSEN indicate that they would expect the pylons to be retained as they are an integral part of their network. To this extent, SSEN suggested they should be viewed as permanent physical features. Should the pylons be retained the area of land could be incorporated into the site masterplan as access roads and/or open space provision. A sag/sway survey would have to be undertaken to determine the extent of the easement and clearance required for the OHLs at this Site, which is then agreed upon with SSEN. Should the developer wish to divert or bury the cables, agreement will need to be reached with SSEN, with the costs borne by the developer.

8.8.2 Gas

Given the scale of development, and that it is a greenfield site, it is expected that localised reinforcement of the gas network will be required. As the Site is located within proximity to developed areas, connection costs are not likely to be cost prohibitive. It is not expected that there will be any significant capacity issues associated with gas utility provision. SGN have been contacted with the anticipated demands to assess their network.

8.8.3 Water

Thames Water has expressed concern over the adequacy of water supply capacity to serve the development. They currently have ongoing programmes to increase the supply capacity to this WRZ, however there is also the issue of whether the network is sufficient to distribute this increased supply.

It is highly likely that strategic upgrades to the local water distribution network will be required to support the development and ensure that sufficient capacity is brought forward ahead of need. Thames Water encourage that the developer works closely with them during the planning process to better understand the infrastructure requirements and trigger points. The costs of delivering these network upgrades will be borne by the developer and delivered by Thames Water once agreement between the parties is reached.

8.8.4 Foul

The local public sewerage system largely comprises small (150mm) diameter sewers with limited capacity. Kingston Bagpuize Wastewater Treatment Works to the south of the town is also known to have limited capacity. Therefore, it is highly likely that both local and strategic upgrades will be required to support this development.

Thames Water have expressed concern that the wastewater network capacity in this area may be unable to support the demand anticipated from this development. Local upgrades to the existing drainage infrastructure may be required to ensure

that sufficient capacity is brought forward ahead of the development. Where there is a potential wastewater network capacity constraint, the developer should liaise with Thames Water to determine whether a detailed drainage strategy is required as part of the planning application, which would inform what infrastructure upgrades are required and their delivery details.

DNOs have a legal obligation to provide developers with the right to connect foul water to a public sewer regardless of capacity issues. The costs of any localised upgrades will be borne by the developer.

The final decision on the need for utility infrastructure capacity upgrades will be subject to agreement of the utilities provider, the developer, and VoWH. The cost for delivering the infrastructure improvements would be borne by the developer and would be defined via a Section 106 Agreement.

8.9 Flood protection and drainage

There are a number of open water courses, culverts and streams present on-site. These will require appropriate enhancements, improvements and upgrades to ensure they are effective in helping to manage the surface water drainage issues associated with a larger development footprint.

Flood risk across the site is low, with the Environment Agency's Flood Maps showing that:

- the site is located within Flood Zone 1 (low risk; <0.1% annual exceedance probability (AEP)) for fluvial flooding;
- the site is at low (<0.1% AEP) risk of surface water flooding;
- has risk of groundwater emergence of less than 25% AEP according to the Vale of the White Horse Strategic Flood Risk Assessment and subsequent Addendum;
- the Kingston Bagpuize area only has three properties that have been affected by sewer flooding hence the risk to the proposed development is considered low according to the Strategic Flood Risk Assessment.

The site is greenfield agricultural land and is not served by any existing public surface water sewers. There are no ditches or other watercourses within or adjacent to the site.

Current proposals for the site show the use of infiltration methods as means to dispose of surface water. A sustainable drainage system (SuDS) will also need to be integrated in the design and delivery of the development, to and promote ecological and water quality benefits.

9 South East of Marcham

9.1 Overview

The site is located to the south-east of the village of Marcham, and lies immediately to the east of the LPP1 residential allocation. LPP2 Core Policy 4a identifies that the site is capable of accommodating 90 dwellings.

The housing trajectory provided by the Council identifies the following delivery timetable for the site: 45 dwellings in 2019/2020, and 45 dwellings in 2020/2021.

The site is located in 'Zone 1' of the Council's CIL Charging Zone. Residential development in Zone 1 is subject to a levy charge of £120 per square metre. Taking account of the Council's affordable housing requirements (35%), and at an average of 87m² per dwelling, the site can be expected to realise a CIL receipt of approximately £814,320 (subject to final design details).

A total of 15% of this CIL receipt will be passed on to Marcham Parish Council.

9.2 Transport

Primary vehicular access to the site will be from the A415 (Marcham Road). This will necessitate junction improvements with the A415, and will need to be located sufficiently eastward of Howard Cornish Road, and the access track to Hyde Farm Nurseries.

The ETI highlights that there may be capacity issues on the A34 (northbound and southbound), and A415 (eastbound). As such, a Transport Assessment is required to confirm impacts on the rest of the highway network, and to understand whether the site may be required to contribute towards mitigation on the wider network.

The Transport Assessment will also need to document how the scheme can ameliorate air quality impacts on the village of Marcham, which is already a designated Air Quality Management Area (AQMA).

The LPP2 makes provision for improving access and to help overcome the AQMA issues in Marcham by safeguarding land for the South Marcham Bypass linking the A415 to the west of Marcham and the east of Marcham.

Proposed development at South East of Marcham will be expected to contribute to improvements to the public transport, and the walking and cycling network; and assist in the integration of the site with Marcham, and enhancing connections to Abingdon.

OCC has indicated that it is currently not possible to set out the cost of transport infrastructure required at South East of Marcham. This is because further work must be carried out to confirm both the on-site *and* off-site mitigation. This information will only emerge once the detailed Transport Assessment of the planning application is produced.

However, in order to provide a frame of reference for the cost associated with transport infrastructure improvements, a review of comparable schemes from across the VoWH area has been carried. Based upon similar schemes, the cost associated with South East of Marcham has been identified as between: £750,000 and £1.5 million. Any final costings would be subject to agreement of the Transport Assessment and agreement between the developer, VOWH, and OCC.

9.3 Education

Given the scale of development, the site is not required to deliver a new primary school. However, the site is expected to contribute to the general enhancement of capacity across early years, primary, secondary and SEN education.

As highlighted in section 4.4.2 and section 4.4.3, the PPP shows that Marcham CE Primary School is expanding from an admission number of 20 to one of 30 (i.e. 1 form entry, 210 places) to provide capacity for local housing growth. No further capacity issues are identified.

Some care is required in the village of Marcham to ensure that the cumulative impact of the various residential development proposals set out in LPP1 and LPP2 does not compromise capacity within the existing primary school. The existing school site is below OCC's and the Department for Education's standards. As such, future land requirements, for expansion or for optimising existing operations may be required. This will be subject to further evidence being forthcoming from OCC.

Depending on the how the planned development sites in Marcham evolve over time, OCC's position on education capacity and the requirement for contributions may change.

9.4 Health and social care

OxCCG has identified that the total housing growth across the district will have an impact on the service delivery of primary care services.

OxCCG has prepared the South West Oxfordshire Locality-based Plan (January 2018), which sets out how primary care will be sustainably delivered across South West Oxfordshire. The plan draws upon information from the OXIS reports, and outlines how the CCG is transforming its service provision and adopting new models of care and delivery.

Although the plan does not specifically identify any direct requirements as a result of growth, it does clearly state that current primary care premises cannot absorb the anticipated population growth, with practices already struggling to find consulting and administrative space for their existing patients.

No site specific infrastructure requirements have been identified as a result of the South East of Marcham development, and the CCG has stated that they would normally pursue the expansion of existing premises, rather than the provision of new premises. However, where there is insufficient space to expand, then other options will need to be considered.

It should be noted that the site promoter, in their representation to the LPP2 from July 2016, has indicated that they wish to deliver a health centre / community centre on-site as part of the proposed neighbourhood centre.

OxCCG has advocated that further discussions should take place regarding the impact on primary care as a result of the additional demand generated by this site. As a minimum, the CCG expects the site to contribute towards general healthcare provision across the district. Subject to further discussion, it may be that the site would need to provide primary care provision on-site.

OxCCG has adopted the 'West Kent' model for seeking developer contributions from development. This is a corporate stance, and this particular model is being followed by a number of CCG's across the country. Based upon current information, OxCCG will through use of the West Kent model, seek a contribution from the site of: £90,720.

9.5 Emergency services

Based upon discussions with the three emergency services, it is clear that no site specific infrastructure is required.

9.6 Community and sports facilities

Outdoor Sport and Recreation

Table 23 sets out the outdoor playing pitch requirements generated by the proposed development. These calculations have been made using the standards set out in Appendix K of the LPP2.

Appendix K of the LPP2 identifies Outdoor Sport Facilities as including: 'all outdoor sports facilities whether naturally or artificially surfaced e.g. playing pitches (football, rugby union, hockey and cricket), bowling greens and tennis courts'.

The calculations show that the site generates a requirement for each type of playing pitch and outdoor sport category. Using a combination of figures from Sport England's Facilities Costs (Q2 2017), costs provided by VoWH, and, costs provided by Spon's, it is possible to derive 'indicative costs' for infrastructure provision. These costs do not include any costs associated with land purchases that may be necessary to delivery infrastructure. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Table 23: Outdoor Playing Pitch Standards

Outdoor Playing Pitch Standards							
Type	Bowling Greens	Outdoor Tennis	Artificial Grass Pitches	Playing Pitch Provision			
General Standard	0.047 outdoor bowling greens per 1000	0.39 affiliated club courts per 1000	0.03 large size 3G AGP per 1000	(by year, per 1000 population)			
				2015	2021	2026	2031
				1.16 ha	1.14 ha	1.16 ha	1.19 ha
Site Specific Requirements	0.01	0.08	0.006	0.249	0.245	0.249	0.255
Source of Costs	Sport England (Q2 2017) Bowling (Turf Green)	Sport England (Q2 2017) Tennis Court (2 Courts)	Sport England (Q2 2017) Senior Football (65mm 3G pitch)	Sport England (Q2 2017) (Natural Turf Pitches) (106 x 70m ²)			
Indicative Cost of Provision	£1,400	£8,000	£5,730	£37,400			

Community Facilities

Table 24 sets out the community facility requirements generated by the proposed development. These calculations utilise the standards set out in Appendix K of the LPP2.

South East of Marcham is in close proximity to the settlement of Marcham, which is identified within Local Plan Part 1 Core Policy 3 Settlement Hierarchy as a 'Larger Village'. The development should therefore realise 120 sq.m. of community facility space, per 1000 population. Based upon the calculations, at least 25.8 sq.m. of space should be provided for community facilities.

Using a cost of £1,514 per sq.m. set out in the Infrastructure Delivery Plan (December 2016), an indicative cost for provision of community facilities has been derived. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Table 24: Social and Community Facilities²⁰

Social and Community Facilities	
Type	For Market Towns, Local Service Centres and Larger Villages
General Standard	120 sq.m. of space per 1000 population
Site Specific Requirements	25.8
Source of Cost	VoWH provided costs of £1,514 sq.m. (figure used within the Local Plan Part 1 Infrastructure Delivery Plan)
Indicative Cost of Provision	£39,079

Indoor Facilities

Table 25 sets out the indoor facility requirements generated by the proposed development. These calculations utilise the standards set out in Appendix K of the LPP2. Appendix K of the LPP2 identifies specific standards for the provision of for sports hall, swimming pools, health and fitness centres, bowling greens and squash.

However, indicative costs have been derived where possible through Sport England's Facilities Costs (Q2 2017).

Confirmation of the infrastructure requirements set out in **Table** , and the costs associated with this provision, will be finalised by the Council as part of the planning application process.

Table 25: Indoor Sports²¹

Indoor Sports					
Type	Sports Halls	Swimming Pools	Health and Fitness Centres	Bowling Greens	Squash
General Standard	0.29 courts per 1000	11.36 sq.m. water space per 1000	5.64 stations per 1000	0.08 rinks per 1000	0.1 courts per 1000
Site Specific Requirements	0.06	2.44	1.62	0.02	0.03
Source of Cost	Sport England (Q2 2017) Costs based on an Affordable Sports Hall 1 Court (18x10)	Sport England (Q2 2017) Costs based on 25m Pool 4 Lane (25m by 8.5m)	Sport England (Q2 2017) Costs based on a 50 Station health and fitness gym (proportion of an Affordable Sports Centre)	Sport England (Q2 2017) Costs based on 6-rink Indoor Bowls Centre	Costs based on Nortoft Cost Estimates provided to VoWH (£100,000 per court)
Indicative Cost of Provision	£42,300	£8,205	£43,520	£7,083	£3,000

²⁰ Nortoft Partnerships Ltd (2016) Vale of White Horse District Council Local Leisure Facilities and Local Plan Part 2 Appendix K

²¹ Vale of White Horse (2016) Local Plan Part 2

9.7 Green infrastructure and open space

Appendix K of the LPP2 defines that ‘Open Space’ comprises ‘Children’s Play and Youth Provision’, ‘Public Open Space’ and ‘Allotments’.

Open Space

Appendix K of the LPP2, supported by Open Space Report (2017) identifies specific standards for open space provision. Table 26 below identifies that at least 0.52 hectares (15% of the site size) should be identified as Public Open Space (POS).

An indicative cost for POS has been provided using figures from Spon’s for a hectare of ‘natural and semi-natural open space’. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Allotments

Appendix K of the LPP2 requires the provision of 0.4 ha per 1,000 people in areas outside the defined ‘Market Towns’. Table 26 identifies that the site generates a requirement for 0.086 hectares of allotments. Using the Spon’s, an indicative cost can be derived for a hectare of ‘allotments and community gardens’.

Confirmation of the final allotment requirements, and the costs associated with this provision, will be finalised by the Council as part of the planning application process.

Children’s Play and Youth Provision

Appendix K of the LPP2 requires 0.25ha per 1,000 of designated equipped play space, and 0.3ha per 1,000 for youth/MUGA provision. Given the scale of the development this would mean the scheme is required to deliver 0.05ha of designated equipped play space (including LAPs, LEAPs, and NEAPs) and 0.06ha of youth/MUGAs.

Confirmation of the final provision of play space and youth provision, and the costs associated with this provision, will be finalised by the Council as part of the planning application process. The funding for the on-site provision will be secured through a Section 106 agreement.

Further work will be necessary to generate an indicative cost for a Designated Equipped Playing Space, given the overall quantum of each ‘type’ of LAP, LEAP and NEAP provision has not yet been agreed. An indicative cost has however been provided for a MUGA from the Sport England Facilities Costs (2017 Q2).

Table 26: Green Infrastructure and Open Space²²

	Children's Play and Youth Provision		Open Space	Allotments
Type	LEAP / NEAP	Youth / MUGA	Public Open Space	LPP2 Appendix K
General Standard	0.25 ha per 1000	0.3 ha per 1000	15% of the residential area	0.4 ha per 1,000 elsewhere
Site Specific Requirements	0.05	0.06	0.52 ha	0.086
Source of Costs	Costs based on Nortoft Cost Estimates provided to VoWH	Sport England (2017) Multi-use Games Area.	Spons's Architects' and Builders' Price Book (2017) 'natural and semi-natural open space'.	Spons's Architects' and Builders' Price Book (2017) 'Allotment and Community Gardens'
Indicative Costs of Provision	£85,545	£111,253.20	£25,976	£1,966

9.8 Utilities

The site is a greenfield site, and therefore new utility connections to the nearby existing network will be required. The South East of Marcham development will generate the following utility demands:

Site	Residential Units	Electrical Demand (MVA)	Gas Demand (MW)	Potable Water Demand (m3/day)	Foul Water Generation (m3/day)
South East of Marcham	90	0.85	0.33	23.8	22.6

9.8.1 Electricity

As this is a greenfield site, it is expected that localised reinforcement of the electricity network will be required.

Fyfield Primary substation will likely serve the proposed development site. SSEN forecast that there will be 7.62MVA available capacity at this substation in 2021/2022, which is sufficient to support this proposed residential development. Fyfield Primary would likely also serve the East of Kingston Bagpuize development site, and there is forecast to be sufficient available capacity to support both sites.

Fyfield Primary is served by Witney BSP, which has a forecast available capacity of over 20MVA through to 2021/2022. It is not anticipated that there will be any high level strategic issues to supply this development site. However, should a large number of developments connect to primary substations served by Witney

²² Appendix K Local Plan Part 2

BSP prior to this site gaining approval, then they will use the remaining available capacity. SSEN have stated that should a significantly large number of applications be received in the Witney area then they will consider reinforcement options for this BSP.

It is noted that overhead electricity pylons cross this site. These are often expensive to divert and/or bury and so are recommended to be retained, with an easement. Representations from SSEN indicate that they would expect the pylons to be retained as they are an integral part of their network. To this extent, SSEN suggested they should be viewed as permanent physical features. Should the pylons be retained the area of land could be incorporated into the site masterplan as access roads and/or open space provision. A sag/sway survey would have to be undertaken to determine the extent of the easement and clearance required for the OHLs at this Site, which is then agreed upon with SSEN. Should the developer wish to divert or bury the cables, agreement will need to be reached with SSEN, with the costs borne by the developer.

9.8.2 Gas

As this is a greenfield site, it is expected that localised reinforcement of the gas network will be required. As the site is located within proximity to developed areas, connection costs are not likely to be cost prohibitive. It is not expected that there will be any significant capacity issues associated with gas utility provision.

9.8.3 Water

Thames Water has expressed concern over the adequacy of water supply capacity to serve the development. They currently have ongoing programmes to increase the supply capacity to this WRZ, however there is also the issue of whether the network is sufficient to distribute this increased supply.

It is highly likely that strategic upgrades to the local water distribution network will be required to support the development and ensure that sufficient capacity is brought forward ahead of need. Thames Water encourage that the developer works closely with them during the planning process to better understand the infrastructure requirements and trigger points. The costs of delivering these network upgrades will be borne by the developer and delivered by Thames Water once agreement between the parties is reached.

9.8.4 Foul

Thames Water records show an existing foul sewer within the north western corner of the site. The development masterplan layout should be designed such that this sewer and any associated easement is not within the developed area, or alternatively the developer could divert this sewer at a cost and subject to Thames Water agreement.

As an individual site, Thames Water have stated that they would have no concerns with this development discharging its foul water via a gravity connection to their network (surface water to be discharged on site/via watercourse). However,

Thames Water are concerned about the impact the cumulative developments proposed in this area.

Thames Water have expressed concern that the wastewater network capacity in this area may be unable to support the demand anticipated from this development. Local upgrades to the existing drainage infrastructure may be required to ensure that sufficient capacity is brought forward ahead of the development. Where there is a potential wastewater network capacity constraint, the developer should liaise with Thames Water to determine whether a detailed drainage strategy is required as part of the planning application, which would inform what infrastructure upgrades are required and their delivery details.

DNOs have a legal obligation to provide developers with the right to connect foul water to a public sewer regardless of capacity issues. The costs of any localised upgrades will be borne by the developer.

9.9 Flood protection and drainage

There are a number of open water courses, culverts and streams present on-site. These will require appropriate enhancements, improvements and upgrades to ensure they are effective in helping to manage the surface water drainage issues associated with a larger development footprint.

The whole of the site falls within Environment Agency Flood Map for Planning (Rivers and Seas), Flood Zone 1 'low probability'. Surface water is likely to outfall via shallow soakaways or by gravity to the existing watercourse on the south west boundary on the site. As a worst case, an allowance should be made for balancing of surface water to a greenfield run off rate with a 40% allowance for climate change.

A sustainable drainage system (SuDS) will need to be integrated in the design and delivery of the development, to and promote ecological and water quality benefits.

10 North of East Hanney

10.1 Overview

The site is located to the north of the village of East Hanney, and lies immediately to the west of the A338. LPP2 Core Policy 4a identifies that the site is capable of accommodating 80 dwellings.

The housing trajectory provided by the Council identifies the following delivery timetable for the site: 40 dwellings in 2020/2021, and 40 dwellings in 2021/2022.

The site is located in 'Zone 1' of the Council's CIL Charging Zone. Residential development in Zone 1 is subject to a levy charge of £120 per square metre. Taking account of the Council's affordable housing requirements (35%), and at an average of 87m² per dwelling, the site can be expected to realise a CIL receipt of approximately £542,880 (subject to final design details).

A total of 15% of this CIL receipt will be passed on to East Hanney Parish Council. The East Hanney Neighbourhood Area has been designated. If the Neighbourhood Plan is formally made part of the development plan prior to planning permission that first permits development, then 25% of the CIL receipt would need to be passed on to the Parish Council.

10.2 Transport

Primary vehicular access to the A338 will be required. In designing the access, consideration may be given to the potential to deliver a safe access via Ashfields Lane.

A Transport Assessment is required to confirm impacts on the rest of the highway network, and to understand whether the site may be required to contribute towards mitigation on the wider network. OCC has highlighted that given the scale of development it may be that the site is required to contribute to improvements to the Frilford Lights and the A338.

Proposed development at North of East Hanney will be expected to contribute to improvements to the public transport, and the walking and cycling network; and assist in the integration of the site with the village.

OCC has indicated that it is currently not possible to set out the cost of transport infrastructure required at North of East Hanney. This is because further work must be carried out to confirm both the on-site *and* off-site mitigation. This information will only emerge once the detailed Transport Assessment of the planning application is produced.

However, in order to provide a frame of reference for the cost associated with transport infrastructure improvements, a review of comparable schemes from across the VoWH area has been carried. Based upon similar schemes, the cost associated with North of East Hanney has been identified as between: £650,000

and £1.35 million. Any final costings would be subject to agreement of the Transport Assessment and agreement between the developer, VOWH, and OCC.

10.3 Education

Given the scale of development, the site is not required to deliver a new primary school. However, the site is expected to contribute to the general enhancement of capacity across early years, primary, secondary and SEN education.

Some care is required in the village of East Hanney to ensure that the cumulative impact of the various residential development proposals set out in LPP1 and LPP2 does not compromise capacity within the existing primary school.

However, based on current information and data, the expansion of the St James CE Primary School to create a 1 form entry school will realise sufficient capacity to accommodate the additional places generated by the North of East Hanney site.

10.4 Health and social care

OxCCG has identified that the total housing growth across the district will have an impact on the service delivery of primary care services.

OxCCG has prepared the South West Oxfordshire Locality-based Plan (January 2018), which sets out how primary care will be sustainably delivered across South West Oxfordshire. The plan draws upon information from the OXIS reports, and outlines how the CCG is transforming its service provision and adopting new models of care and delivery.

Although the plan does not specifically identify any direct requirements as a result of growth, it does clearly state that current primary care premises cannot absorb the anticipated population growth, with practices already struggling to find consulting and administrative space for their existing patients.

No site specific infrastructure requirements have been identified as a result of the North of East Hanney development, and the CCG has stated that they would normally pursue the expansion of existing premises, rather than the provision of new premises. However, where there is insufficient space to expand, then other options will need to be considered.

It should be noted that the site promoter, in their representation to the LPP2 from July 2016, has indicated that they wish to deliver a health centre / community centre on-site as part of the proposed neighbourhood centre.

OxCCG has advocated that further discussions should take place regarding the impact on primary care as a result of the additional demand generated by this site. As a minimum, the CCG expects the site to contribute towards general healthcare provision across the district. Subject to further discussion, it may be that the site would need to provide primary care provision on-site.

OxCCG has adopted the 'West Kent' model for seeking developer contributions from development. This is a corporate stance, and this particular model is being followed by a number of CCG's across the country. Based upon current

information, OxCCG will through use of the West Kent model, seek a contribution from the site of: £80,640.

10.5 Emergency services

Based upon discussions with the three emergency services, it is clear that no site specific infrastructure is required.

10.6 Community and sports facilities

Outdoor Sport and Recreation

Table 27 sets out the outdoor playing pitch requirements generated by the proposed development. These calculations have been made using the standards set out in Appendix K of the LPP2. Appendix K of the LPP2 identifies Outdoor Sport Facilities as including: ‘all outdoor sports facilities whether naturally or artificially surfaced e.g. playing pitches (football, rugby union, hockey and cricket), bowling greens and tennis courts’.

The calculations show that the site generates a requirement for each type of playing pitch and outdoor sport category. Using a combination of figures from Sport England’s Facilities Costs (Q2 2017), costs provided by VoWH, and, costs provided by Spon’s, it is possible to derive ‘indicative costs’ for infrastructure provision. These costs do not include any costs associated with land purchases that may be necessary to delivery infrastructure. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Table 27: Outdoor Playing Pitch Standards

Outdoor Playing Pitch Standards							
Type	Bowling Greens	Outdoor Tennis	Artificial Grass Pitches	Playing Pitch Provision			
General Standard	0.047 outdoor bowling greens per 1000	0.39 affiliated club courts per 1000	0.03 large size 3G AGP per 1000	(by year, per 1000 population)			
				2015	2021	2026	2031
				1.16 ha	1.14 ha	1.16 ha	1.19 ha
Site Specific Requirements	0.01	0.07	0.01	0.22	0.22	0.22	0.23
Source of Costs	Sport England (Q2 2017) Bowling (Turf Green)	Sport England (Q2 2017) Tennis Court (2 Courts)	Sport England (Q2 2017) Senior Football (65mm 3G pitch)	Sport England (Q2 2017) (Natural Turf Pitches) (106 x 70m ²)			
Indicative Cost of Provision	£1,400	£7,000	£9,550	£24,933			

Community Facilities

Table 28 sets out the community facility requirements generated by the proposed development. These calculations utilise the standards set out in Appendix K of the LPP2.

North of East Hanney is in close proximity to the settlement of East Hanney, which is identified within Local Plan Part 1 Core Policy 3 Settlement Hierarchy as a 'Larger Village'. The development should therefore realise 120 sq.m. of community facility space, per 1000 population. Based upon the calculations, at least 23.0 sq.m. of space should be provided for community facilities.

Using a cost of £1,514 per sq.m. set out in the Infrastructure Delivery Plan (December 2016), an indicative cost for provision of community facilities has been derived. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Table 28: Social and Community Facilities²³

Social and Community Facilities	
Type	For Market Towns, Local Service Centres and Larger Villages
General Standard	120 sq.m. of space per 1000 population
Site Specific requirements	23.0
Source of Cost	VoWH provided costs of £1,514 sq.m. (figure used within the Local Plan Part 1 Infrastructure Delivery Plan)
Indicative Cost of Provision	£34,737

Indoor Facilities

Appendix K of the LPP2 identifies specific standards for the provision of the following indoor facilities: sports halls, swimming pools, health and fitness centres, bowling greens, and squash.

Table 29 sets out the indoor facility requirements generated by the proposed development. These calculations utilise the standards set out in Appendix K of the LPP2. Indicative costs have been derived where possible through the use of Sport England's Facilities Costs (Q2 2017), and Nortoft cost estimates (2016).

Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

²³ Nortoft Partnerships Ltd (2016) Vale of White Horse District Council Local Leisure Facilities and Local Plan Part 2 Appendix K

Table 29: Indoor Sports²⁴

Indoor Sports					
Type	Sports Halls	Swimming Pools	Health and Fitness Centres	Bowling Greens	Squash
General Standard	0.29 courts per 1000	11.36 sq.m. water space per 1000	5.64 stations per 1000	0.08 rinks per 1000	0.1 courts per 1000
Site Specific Requirements	0.06	2.17	1.08	0.02	0.02
Source of Cost	Sport England (Q2 2017) Costs based on an Affordable Sports Hall 1 Court (18x10)	Sport England (Q2 2017) Costs based on 25m Pool 4 Lane (25m by 8.5m)	Sport England (Q2 2017) Costs based on a 50 Station health and fitness gym (proportion of an Affordable Sports Centre)	Sport England (Q2 2017) Costs based on 6-rink Indoor Bowls Centre	Costs based on Nortoft Cost Estimates provided to VoWH (£100,000 per court)
Indicative Cost of Provision	£42,300	£7,297	£29,920	£7,083	£2,000

10.7 Green infrastructure and open space

Appendix K of the LPP2 defines that ‘Open Space’ comprises ‘Children’s Play and Youth Provision’, ‘Public Open Space’ and ‘Allotments’.

Open Space

Appendix K of the LPP2, supported by Open Space Report (2017) identifies specific standards for open space provision. Table 30 below identifies that at least 0.516 hectares (15% of the site size) should be identified as Public Open Space (POS).

An indicative cost for POS has been provided using figures from Spon’s for a hectare of ‘natural and semi-natural open space’. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

²⁴ Vale of White Horse (2016) Local Plan Part 2

Allotments

Appendix K of the LPP2 requires the provision of 0.4 ha per 1,000 people in areas outside the defined 'Market Towns'. Table 30 identifies that the site generates a requirement for 0.08 hectares of allotments. Using the Spon's, an indicative cost can be derived for a hectare of 'allotments and community gardens'.

Confirmation of the final allotment requirements, and the costs associated with this provision, will be finalised by the Council as part of the planning application process.

Children's Play and Youth Provision

Appendix K of the LPP2 requires 0.25 hectares per 1,000 of designated equipped play space, and 0.3 hectares per 1,000 for youth / MUGA provision. Given the scale of the development this would generate a requirement of 0.05 hectares for designated equipped play space (including LAPs, LEAPs, and NEAPs), and 0.06 hectares for youth / MUGAs.

Confirmation of the final requirements for play space and youth provision, and the costs associated with this provision, will be agreed as part of the planning application process.

Further work will be necessary to generate an indicative cost for a Designated Equipped Playing Space, given the overall quantum of each 'type' of LAP, LEAP and NEAP provision has not yet been agreed. An indicative cost has however been provided for a MUGA from Sport England's Facilities Costs (Q2 2017).

Table 30: Green Infrastructure and Open Space²⁵

	Children's Play and Youth Provision		Open Space	Allotments
Type	LEAP / NEAP	Youth / MUGA	Public Open Space	LPP2 Appendix K
General Standard	0.25 ha per 1000	0.3 ha per 1000	15% of the residential area	0.4 ha per 1,000 elsewhere
Site Specific Requirements	0.05	0.06	0.516 ha	0.08
Source of Costs	Costs based on Nortoft Cost Estimates provided to VoWH	Sport England (2017) Multi-use Games Area.	Spons's Architects' and Builders' Price Book (2017) 'natural and semi-natural open space'.	Spons's Architects' and Builders' Price Book (2017) 'Allotment and Community Gardens'
Indicative Costs of Provision	£57,030	£111,253	£25,826	£1,828

²⁵ Appendix K Local Plan Part 2

10.8 Utilities

The site is a greenfield site, and therefore new utility connections to the nearby existing networks will be required. The North of East Hanney development will generate the following utility demands:

Site	Residential Units	Electrical Demand (MVA)	Gas Demand (MW)	Potable Water Demand (m3/day)	Foul Water Generation (m3/day)
North of East Hanney	80	0.17	0.29	21.1	20.1

10.8.1 Electricity

The site will likely be served by Grove Primary substation. During previous consultation with SSEN, they stated that if this development were to connect to their network today, there may be sufficient capacity at Grove Primary and the existing HV distribution network. However, reviewing their 2017 LTDS information, SSEN forecast that the full firm capacity at Grove Primary would be already by utilised by 2021/22. Therefore, there is not any forecast available capacity to support the development at this site, nor the sites at North West of Grove and North East of East Hanney which would also likely also be served by Grove Primary.

A number of proposed connections have been investigated by various developments within proximity to Grove Primary; and three connection offers have been made, with a total demand of 7.5MVA. Should these developments connect to the network, then the total available capacity would therefore reduce. However, due to the uncertainty of these schemes and their progression, they have not been included in our assessment.

SSEN currently have plans to increase the firm capacity of Grove Primary through upgrading the transformers. It is expected that these reinforcement works will be sufficient to support development. Note should be taken that this increased capacity will be allocated on a first come first served basis and so the availability will ultimately depend on other load requests that SSEN receive.

Grove Primary is served by Drayton BSP, which has a forecast available capacity of over 100MVA through to 2021/2022. Therefore, there are not anticipated to be any high level strategic issues to supply this development site.

10.8.2 Gas

As this is a greenfield site, it is expected that localised reinforcement of the gas network will be required. As the site is located within proximity to developed areas, connection costs are not likely to be cost prohibitive. It is not expected that there will be any significant capacity issues associated with gas utility provision.

10.8.3 Water

Thames Water has expressed concern over the adequacy of water supply capacity to serve the development. They currently have ongoing programmes to increase the supply capacity to this WRZ, however there is also the issue of whether the network is sufficient to distribute this increased supply.

It is highly likely that strategic upgrades to the local water distribution network will be required to support the development and ensure that sufficient capacity is brought forward ahead of need. Thames Water encourage that the developer works closely with them during the planning process to better understand the infrastructure requirements and trigger points. The costs of delivering these network upgrades will be borne by the developer and delivered by Thames Water once agreement between the parties is reached.

10.8.4 Foul

Thames Water have expressed concern that the wastewater network capacity in this area may be unable to support the demand anticipated from this development. Local upgrades to the existing drainage infrastructure may be required to ensure that sufficient capacity is brought forward ahead of the development.

Where there is a potential wastewater network capacity constraint, the developer should liaise with Thames Water to determine whether a detailed drainage strategy is required as part of the planning application, which would inform what infrastructure upgrades are required and their delivery details.

Thames Water are investing in Appleton STW in 2018, and as part of this the EA has set strict criteria for their discharge permit to prevent a deterioration in phosphorus. It is not expected that the development will make the situation materially worsen than current conditions, and there is no information to suggest that development will result in non-compliance with the objectives of the Water Framework Directive.

Further assessment work will be carried out as part of the planning application process to determine the impact on Appleton STW, and the extent of any requirement to upgrade the STW.

DNOs have a legal obligation to provide developers with the right to connect foul water to a public sewer regardless of capacity issues. The costs of any localised upgrades will be borne by the developer.

10.9 Flood protection and drainage

The majority of the site falls within Environment Agency Flood Map for Planning (Rivers and Seas), Flood Zone 1 'low probability'. However, part of the site does fall within Flood Zone 2. However, the Council has engaged with the EA and agreed that the site area is not hydraulically linked to a watercourse, and that the reason for the grading of the site as in Flood Zone 2 is due to a low point in the site being flagged up during hydraulic modelling.

Surface water is likely to outfall via shallow soakaways or by gravity to the existing watercourse on the south west boundary on the site. As a worst case, an allowance should be made for balancing of surface water to a greenfield run off rate with a 40% allowance for climate change.

Thames Water has confirmed that wastewater network capacity in this area may be unable able to support the demand anticipated from this development. Local upgrades to the existing drainage infrastructure are may be required to ensure sufficient capacity is realised.

A sustainable drainage system (SuDS) will need to be integrated in the design and delivery of the development, to and promote ecological and water quality benefits. The provision of the necessary flood and drainage infrastructure will be subject to agreement of the developer and VoWH. The cost for delivering the infrastructure improvements would be borne by the developer and would be defined via a Section 106 Agreement.

11 North East of East Hanney

11.1 Overview

The site is located to the north of the village of East Hanney, and lies immediately to the north of a LPP1 residential allocation, and to the east of another LPP1 residential allocation. LPP2 Core Policy 4a identifies that the site is capable of accommodating 50 dwellings.

The housing trajectory provided by the Council identifies the following delivery timetable for the site: 25 dwellings in 2020/2021, 25 dwellings in 2021/2022.

The site is located in 'Zone 1' of the Council's CIL Charging Zone. Residential development in Zone 1 is subject to a levy charge of £120 per square metre. Taking account of the Council's affordable housing requirements (35%), and at an average of 87m² per dwelling, the site can be expected to realise a CIL receipt of approximately £339,300 (subject to final design details).

15% of this CIL receipt will be passed on to East Hanney Parish Council. The East Hanney Neighbourhood Area has been designated. If the Neighbourhood Plan is formally made part of the development plan prior to planning permission that first permits development, then 25% of the CIL receipt would need to be passed on to the Parish Council.

11.2 Transport

Primary vehicular access will be required from Steventon Road, with the existing access track to the nursery requiring significant upgrading to represent an appropriate and safe access. Any scheme design should be mindful of the proximity to other points of access for other proposed residential developments along Steventon Road. There may be scope for providing a common point of access.

A Transport Assessment is required to confirm impacts on the rest of the highway network, and to understand whether the site may be required to contribute towards mitigation on the wider network. OCC has highlighted that given the scale of development it may be that the site is required to contribute to improvements to the Frilford Lights and the A338.

Proposed development at North East of East Hanney will be expected to contribute to improvements to the public transport, and the walking and cycling network; and assist in the integration of the site with the village.

OCC has indicated that it is currently not possible to set out the cost of transport infrastructure required at North East of East Hanney. This is because further work must be carried out to confirm both the on-site and off-site mitigation. This information will only emerge once the detailed Transport Assessment of the planning application is produced.

However, in order to provide a frame of reference for the cost associated with transport infrastructure improvements, a review of comparable schemes from across the VoWH area has been carried. Based upon similar schemes, the cost associated with North East of East Hanney has been identified as between: £500,000 and £900,000. Any final costings would be subject to agreement of the Transport Assessment and agreement between the developer, VOWH, and OCC.

11.3 Education

Given the scale of development, the site is not required to deliver a new primary school. However, the site is expected to contribute to the general enhancement of capacity across early years, primary, secondary and SEN education.

Some care is required in the village of East Hanney to ensure that the cumulative impact of the various residential development proposals set out in LPP1 and LPP2 does not compromise capacity within the existing primary school.

However, based on current information and data, the expansion of the St James CE Primary School to create a 1 form entry school will realise sufficient capacity to accommodate the additional places generated by the North of East Hanney site.

11.4 Health and social care

OxCCG has identified that the total housing growth across the district will have an impact on the service delivery of primary care services.

OxCCG has prepared the South West Oxfordshire Locality-based Plan (January 2018), which sets out how primary care will be sustainably delivered across South West Oxfordshire. The plan draws upon information from the OXIS reports, and outlines how the CCG is transforming its service provision and adopting new models of care and delivery.

Although the plan does not specifically identify any direct requirements as a result of growth, it does clearly state that current primary care premises cannot absorb the anticipated population growth, with practices already struggling to find consulting and administrative space for their existing patients.

No site specific infrastructure requirements have been identified as a result of the North East of East Hanney development, and the CCG has stated that they would normally pursue the expansion of existing premises, rather than the provision of new premises. However, where there is insufficient space to expand, then other options will need to be considered.

It should be noted that the site promoter, in their representation to the LPP2 from July 2016, has indicated that they wish to deliver a health centre / community centre on-site as part of the proposed neighbourhood centre.

OxCCG has advocated that further discussions should take place regarding the impact on primary care as a result of the additional demand generated by this site. As a minimum, the CCG expects the site to contribute towards general healthcare provision across the district. Subject to further discussion, it may be that the site would need to provide primary care provision on-site.

OxCCG has adopted the ‘West Kent’ model for seeking developer contributions from development. This is a corporate stance, and this particular model is being followed by a number of CCG’s across the country. Based upon current information, OxCCG will through use of the West Kent model, seek a contribution from the site of: £50,400.

11.5 Emergency services

Based upon discussions with the three emergency services, it is clear that no site specific infrastructure is required.

11.6 Outdoor Sport and Recreation

Table 31 sets out the outdoor playing pitch requirements generated by the proposed development. These calculations have been made using the standards set out in Appendix K of the LPP2. Appendix K of the LPP2 identifies Outdoor Sport Facilities as including: ‘all outdoor sports facilities whether naturally or artificially surfaced e.g. playing pitches (football, rugby union, hockey and cricket), bowling greens and tennis courts’.

The calculations show that the site generates a requirement for each type of playing pitch and outdoor sport category. Using a combination of figures from Sport England’s Facilities Costs (Q2 2017), costs provided by VoWH, and, costs provided by Spon’s, it is possible to derive ‘indicative costs’ for infrastructure provision. These costs do not include any costs associated with land purchases that may be necessary to delivery infrastructure. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Table 31: Outdoor Playing Pitch Standards

Outdoor Playing Pitch Standards							
Type	Bowling Greens	Outdoor Tennis	Artificial Grass Pitches	Playing Pitch Provision			
General Standard	0.047 outdoor bowling greens per 1000	0.39 affiliated club courts per 1000	0.03 large size 3G AGP per 1000	(by year, per 1000 population)			
				2015	2021	2026	2031
				1.16 ha	1.14 ha	1.16 ha	1.19 ha
Site Specific Requirements	0.01	0.05	0.00	0.14	0.14	0.14	0.14
Source of Costs	Sport England (Q2 2017) Bowling (Turf Green)	Sport England (Q2 2017) Tennis Court (2 Courts)	Sport England (Q2 2017) Senior Football (65mm 3G pitch)	Sport England (Q2 2017) (Natural Turf Pitches) (106 x 70m2)			
Indicative Cost of Provision	£1,400	£5,000	£N/A	£15,867			

Community Facilities

Table 32 sets out the community facility requirements generated by the proposed development. These calculations utilise the standards set out in Appendix K of the LPP2.

North of East Hanney is in close proximity to the settlement of East Hanney, which is identified within Local Plan Part 1 Core Policy 3 Settlement Hierarchy as a 'Larger Village'. The development should therefore realise 120 sq.m of community facility space, per 1000 population. Based upon the calculations, at least 14.4 sq.m of space should be provided for community facilities.

Using a cost of £1,514 per sq.m. set out in the Infrastructure Delivery Plan (December 2016), an indicative cost for provision of community facilities has been derived. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Table 32: Social and Community Facilities²⁶

Social and Community Facilities	
Type	For Market Towns, Local Service Centres and Larger Villages
General Standard	120 sq.m of space per 1000 population
Site Specific requirements	14.34
Source of Cost	VoWH provided costs of £1,514 sq.m. (figure used within the Local Plan Part 1 Infrastructure Delivery Plan)
Indicative Cost of Provision	£21,710

Indoor Facilities

Appendix K of the LPP2 identifies specific standards for the provision of the following indoor facilities: sports halls, swimming pools, health and fitness centres, bowling greens, and squash.

Table 33 sets out the indoor facility requirements generated by the proposed development. These calculations utilise the standards set out in Appendix K of the LPP2. Indicative costs have been derived where possible through the use of Sport England's Facilities Costs (Q2 2017), and Nortoft cost estimates (2016).

Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

²⁶ Nortoft Partnerships Ltd (2016) Vale of White Horse District Council Local Leisure Facilities and Local Plan Part 2 Appendix K

Table 33: Indoor Sports²⁷

Indoor Sports					
Type	Sports Halls	Swimming Pools	Health and Fitness Centres	Bowling Greens	Squash
General Standard	0.29 courts per 1000	11.36 sq.m. water space per 1000	5.64 stations per 1000	0.08 rinks per 1000	0.1 courts per 1000
Site Specific Requirements	0.06	2.17	1.08	0.02	0.02
Source of Cost	Sport England (Q2 2017) Costs based on an Affordable Sports Hall 1 Court (18x10)	Sport England (Q2 2017) Costs based on 25m Pool 4 Lane (25m by 8.5m)	Sport England (Q2 2017) Costs based on a 50 Station health and fitness gym (proportion of an Affordable Sports Centre)	Sport England (Q2 2017) Costs based on 6-rink Indoor Bowls Centre	Costs based on Nortoft Cost Estimates provided to VoWH (£100,000 per court)
Indicative Cost of Provision	£21,150	£4,573	£19,040	£3,542	£2,000

11.7 Green infrastructure and open space

Appendix K of the LPP2 defines that ‘Open Space’ comprises ‘Children’s Play and Youth Provision’, ‘Public Open Space’ and ‘Allotments’.

Open Space

Appendix K of the LPP2, supported by Open Space Report (2017) identifies specific standards for open space provision. Table 34 below identifies that at least 0.36 hectares (15% of the site size) should be identified as Public Open Space (POS).

An indicative cost for POS has been provided using figures from Spon’s for a hectare of ‘natural and semi-natural open space’. Confirmation of the final requirements and costs associated with provision will take place as part of the planning application process.

Allotments

Appendix K of the LPP2 requires the provision of 0.4 ha per 1,000 people in areas outside the defined ‘Market Towns’. Table 34 identifies that the site generates a requirement for 0.05 hectares of allotments. Using the Spon’s, an indicative cost can be derived for a hectare of ‘allotments and community gardens’.

²⁷ Vale of White Horse (2016) Local Plan Part 2

Confirmation of the final allotment requirements, and the costs associated with this provision, will be finalised by the Council as part of the planning application process.

Children’s Play and Youth Provision

Appendix K of the LPP2 requires 0.25 hectares per 1,000 of designated equipped play space, and 0.3 hectares per 1,000 for youth / MUGA provision. Given the scale of the development this would generate a requirement of 0.03 hectares for designated equipped play space (including LAPs, LEAPs, and NEAPs), and 0.04 hectares for youth / MUGAs.

Confirmation of the final requirements for play space and youth provision, and the costs associated with this provision, will be agreed as part of the planning application process.

Further work will be necessary to generate an indicative cost for a Designated Equipped Playing Space, given the overall quantum of each ‘type’ of LAP, LEAP and NEAP provision has not yet been agreed. An indicative cost has however been provided for a MUGA from Sport England’s Facilities Costs (Q2 2017).

Table 34: Green Infrastructure and Open Space²⁸

	Children’s Play and Youth Provision		Open Space	Allotments
Type	LEAP / NEAP	Youth / MUGA	Public Open Space	LPP2 Appendix K
General Standard	0.25ha per 1000	0.3ha per 1000	15% of the residential area	0.4ha per 1,000 elsewhere
Site Specific Requirements	0.03	0.04	0.36ha	0.05
Source of Costs	Costs based on Nortoft Cost Estimates provided to VoWH	Sport England (2017) Multi-use Games Area.	Spons’s Architects’ and Builders’ Price Book (2017) ‘natural and semi-natural open space’.	Spons’s Architects’ and Builders’ Price Book (2017) ‘Allotment and Community Gardens’
Indicative Costs of Provision	£35,644	£74,170	£18,020	£1,143

²⁸ Appendix K Local Plan Part 2

11.8 Utilities

The site is a greenfield site, and therefore new utility connections to the nearby existing networks will be required. The North East of East Hanney development will generate the following utility demands:

Site	Residential Units	Electrical Demand (MVA)	Gas Demand (MW)	Potable Water Demand (m3/day)	Foul Water Generation (m3/day)
North East of East Hanney	50	0.11	0.18	13.2	12.5

11.8.1 Electricity

The site will likely be served by Grove Primary substation. During previous consultation with SSEN, they stated that if the development were to connect to their network today, there may be sufficient capacity at Grove Primary and the existing HV distribution network to support this development. However, reviewing their 2017 LTDS information, SSEN forecast that the full firm capacity at Grove Primary would be already by utilised by 2021/22. Therefore, this is not forecast to be any remaining available capacity to support the development at this Site, or the sites at North-West of Grove and North of East Hanney, which would also likely also be served by Grove Primary.

A number of proposed connections have been investigated by various developments within proximity to Grove Primary; and three connection offers have been made, with a total demand of 7.5MVA. Should these developments connect to the network, then the total available capacity would therefore reduce. However, due to the uncertainty of these schemes and their progression, they have not been included in our assessment.

SSEN currently have plans to increase the firm capacity of Grove Primary through upgrading the transformers. It is expected that these reinforcement works will be sufficient to support the development. Note should be taken that this increased capacity will be allocated on a first come first served basis and so the availability will ultimately depend on other load requests that SSEN receive.

Grove Primary is served by Drayton BSP, which has a forecast available capacity of over 100MVA through to 2021/2022. Therefore, there are not anticipated to be any high level strategic issues to supply this development site.

It is noted that overhead electricity pylons cross this site. These are often expensive to divert and/or bury and so are recommended to be retained, with an easement. Representations from SSEN indicate that they would expect the pylons to be retained as they are an integral part of their network. To this extent, SSEN suggested they should be viewed as permanent physical features. Should the pylons be retained the area of land could be incorporated into the site masterplan as access roads and/or open space provision. A sag/sway survey would have to be undertaken to determine the extent of the easement and clearance required for the OHLs at this Site, which is then agreed upon with SSEN. Should the developer

wish to divert or bury the cables, agreement will need to be reached with SSEN, with the costs borne by the developer.

11.8.2 Gas

As this is a greenfield site, it is expected that localised reinforcement of the gas network will be required. As the Site is located within proximity to developed areas, connection costs are not likely to be cost prohibitive. It is not expected that there will be any significant capacity issues associated with gas utility provision.

11.8.3 Water

Thames Water has expressed concern over the adequacy of water supply capacity to serve the development. They currently have ongoing programmes to increase the supply capacity to this WRZ, however there is also the issue of whether the network is sufficient to distribute this increased supply.

It is highly likely that strategic upgrades to the local water distribution network will be required to support the development and ensure that sufficient capacity is brought forward ahead of need. Thames Water encourage that the developer works closely with them during the planning process to better understand the infrastructure requirements and trigger points. The costs of delivering these network upgrades will be borne by the developer and delivered by Thames Water once agreement between the parties is reached.

11.8.4 Foul

Thames Water have stated that they do not envisage infrastructure concerns regarding wastewater infrastructure capability in relation to this development, provided that the development discharges its foul water via a gravity connection to their network (surface water to be discharged on site/watercourse).

11.9 Flood protection and drainage

The whole of the site falls within Environment Agency Flood Map for Planning (Rivers and Seas), Flood Zone 1 'low probability'. Surface water is likely to outfall via shallow soakaways or by gravity to the existing watercourse on the south west boundary on the site. As a worst case, an allowance should be made for balancing of surface water to a greenfield run off rate with a 40% allowance for climate change.

A sustainable drainage system (SuDS) will need to be integrated in the design and delivery of the development, to and promote ecological and water quality benefits. The provision of the necessary flood and drainage infrastructure will be subject to agreement of the developer and VoWH. The cost for delivering the infrastructure improvements would be borne by the developer and would be defined via a Section 106 Agreement.

12 Funding and Delivery

12.1 Funding

The funding for the delivery of the infrastructure requirements will be secured through a combination of sources. These include: direct provision by the developer, provision on-site secured through Section 106 agreements, contributions made to the relevant statutory undertakers and secured by either Section 106 or Section 278 Agreements, or through the use of CIL receipts collected by the Council.

As has been noted in Section 2 and Section 4, other sub-regional and national funding sources will also play a vital role in supporting the Council (and statutory providers) in delivering the necessary infrastructure to support the LPP2.

The Oxfordshire Housing and Growth Deal will provide £215 million towards the delivery of housing and infrastructure, and this funding, when used in parallel with funding from the OxLEP Growth Deal and City Deal, will be fundamental to ensuring that infrastructure is provided alongside the planned housing growth set out in LPP2.

Each of the seven sites identified in the LPP2 will be subject to CIL, and will generate a CIL receipt for the Council. Based upon the Council's Charging Schedule, each of the seven sites will be subject to a £120 per square metre levy charge as they are located in 'Zone 1' as defined by the Charging Schedule.

A summary of the potential CIL receipts that may be generated by each of the seven sites is set out in Table 35 below. The values set out are indicative, and are based upon an assumption of an average dwelling size of 87 square metres. The true CIL values will be determined once planning applications are received, and final dwelling numbers and size of units has been confirmed.

Table 35: Indicative Estimate of CIL Receipts

Site	Number of Dwellings	Market Housing (65%)	Indicative CIL Receipt
Harwell Campus	1,000	650	£6,786,000.00
North West Grove	400*	195	£2,035,800.00
Dalton Barracks	1,200*	780	£8,143,200.00
East Kingston Bagpuize	600	390	£4,071,600.00
South East Marcham	90	78	£814,320.00
North of East Hanney	80	52	£542,880.00
North East of East Hanney	50	33	£339,300.00
INDICATIVE TOTAL			£22,733,100.00

The CIL receipts gained from each of the seven sites will not be realised all at once, or all at the start of the planned developments. The levy charges are likely to be paid in instalments over time, linked to the progress made on each site.

CIL receipts collected by the Council need to be shared with the relevant town or parish council(s) where the development site is located. Depending on the town or parish councils' progress in drafting and adopting a Neighbourhood Plan, the level of the CIL receipt passed on is either 15% or 25%. All town / parish councils will be entitled to 15% regardless of their progress on preparing a Neighbourhood Plan. However, those with a Neighbourhood Plan that has been 'made' (i.e. adopted) and is therefore part of the 'development plan' before planning permission first permits development will be entitled to 25%.

For the seven sites in the LPP2, the following parish councils are of relevance:

Table 36: List of LPP2 and Parish Councils

Site	Parish Council(s)	Current Status in terms of 15% of 25% of CIL receipt
Harwell Campus	East Hendred Parish Council and Harwell Parish Council.	15%
North West Grove	Grove Parish Council	15%
Dalton Barracks	St Helen Without Parish Council	15%
East Kingston Bagpuize	Fyfield and Tubney Parish Council	15%
South East Marcham	Marcham Parish Council	15%
North of East Hanney	East Hanney Parish Council	15%
North East of East Hanney	East Hanney Parish Council	15%

The Ministry of Housing, Communities and Local Government, often working in partnership with the Homes England (HE), is also a potential source of funding to help deliver sites and unlock growth. The HE's Housing Infrastructure Fund, and the Accelerated Construction programme, represent central funding pots that can be accessed by Councils to either speed up the delivery of housing sites, and / or, help to unlock sites by investing in infrastructure delivery.

The Council (along with OCC) has recently secured £7.7 million for the Wantage Eastern Link Road project to develop the strategic link road between the A338 to the north of Wantage and the A417 to the east of the town. This has been secured through the HE's Marginal Viability Fund, which is a component of the overall Housing Infrastructure Fund. Continuing to submit business cases to the HE will ensure that infrastructure can be delivered in a timely manner and help improve the overall viability and deliverability of development.

Throughout the LPP2 plan period sources and levels of funding will vary and could relate to different infrastructure topics as priorities evolve. It is important therefore that the IDP is reviewed regularly, with local infrastructure priorities refined and timescales updated to ensure that the infrastructure requirements remain up-to-date and the Council is prepared to access funding sources throughout the implementation of the LPP2.

When considering any review of the IDP, the Council will be mindful of the inter-relationship with the Developer Contributions SPD, the CIL Charging Schedule, and the Regulation 123 List. As above, the infrastructure priorities across the

district may evolve over time, and the policy and implementation framework established by the Council will need to react accordingly to ensure that securing funds for infrastructure is correctly balanced against the objective to deliver planned growth.

12.2 Delivery

The site summaries identify infrastructure items where the Council's evidence base for the LPP2 results in an infrastructure 'need' being generated – for example, on items linked to: Outdoor Sport and Recreation; Indoor Sports; and Open Space, Allotments and Children's Play.

There are circumstances where the infrastructure 'need' identified does not result in a whole facility or infrastructure item being generated. It will be for the Council, in conjunction with statutory agencies (where relevant), and the developer to confirm how best to address this need, and whether a Section 106 agreement associated with each site should provide a developer contribution towards meeting this need (subject to the criteria set out within Regulation 122); or whether the need can be addressed in an alternative manner, through the use of CIL receipts, or by an alternative delivery mechanism.

13 Conclusions

The assessments carried out as part of preparing this IDP, and the discussions with statutory providers, and site promoters, has revealed a number of key issues and conclusions. These include:

- No significant ‘show-stopping’ infrastructure items have been identified that would prevent any of the sites being developed. As such, the IDP helps to support the Council’s stance that the sites are ‘achievable’ and ‘deliverable’ and therefore in accordance with the NPPF.
- Further work is required on all sites to continue to investigate the exact site-specific infrastructure needed for each site. The Council is proactively engaging with statutory providers and site promoters, and this should continue, in order to define the infrastructure requirements that are not yet fully known, or where the exact costs has yet to be defined.
- The Council is preparing two site-specific Supplementary Planning Documents – one for Harwell Campus, and one for Dalton Barracks. This additional work provides an ideal opportunity to further define the site-specific infrastructure requirements for each development. It also allows for the unique characteristics of both Harwell Campus and Dalton Barracks to be reflected in the infrastructure delivery strategy for each site. For Harwell Campus, this may mean a more flexible approach to infrastructure delivery, harnessing the best of what already exists on-site, whilst enhancing services and facilities. And, for Dalton Barracks, this may mean understanding how the infrastructure requirements generated by the scale of development are fully integrated in to the aims for the site to be developed in accordance with Garden Village principles.
- Discussions with statutory providers has highlighted that they would welcome further dialogue with the Council on infrastructure matters. Both the statutory providers and the Council recognise that the planning, funding, and delivery of infrastructure is a ‘live’ issue, and that circumstances may change over time. The Council is encouraged to continue to engage with the statutory providers, as part of the Duty to Co-operate.
- The Council is in the process of reviewing and potentially refining the Regulation 123 List accompanying the CIL Charging Schedule; and is considering whether to also review the Developer Contributions SPD. This approach is supported, particularly given the progress of the LPP2, and the new evidence that has emerged in producing this IDP. In reviewing the Regulation 123 List, the Council should consider whether any of the sites proposed in LPP2 should be exempted from the levy, and / or whether some of the specific infrastructure items identified in this IDP should be added to the Regulation 123 List. In considering any revisions, further discussions with statutory providers should take place to ensure that consensus is reached on what is the correct approach to planning, funding, and delivering infrastructure.

Appendix A

Infrastructure Schedule

A1 Infrastructure Schedule

A1.1 Harwell Campus (1,000 dwellings)

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
HC-T1	Transport	Access improvements to the A4185 (where required).	Essential	Developer and OCC	S106 / S278	£1.5m to £3m	Costs based on precedent and comparative examples from elsewhere in the VoWH area. Final costs subject to change once a Transport Assessment, highway modelling, and subsequent highway design has been produced and approved.
HC-T2	Transport	Enhancements to the current and future walking, cycling and public transport network.	Essential	Developer and OCC	S106 / S278	£1m to £2.5m	Costs based on precedent and comparative examples from elsewhere in the VoWH area. Final costs subject to change once a Transport Assessment, highway modelling, and subsequent highway design has been produced and approved.
HC-T3	Transport	Improvements to PRow including NCN Route 544 (Icknield Way).	Essential	Developer and OCC	S106 / S278		
HC-T4	Transport	Any required improvement works on junctions identified in Transport Assessment.	Essential	Developer and OCC	S106 / S278	TBC	Schemes unknown, so not able to provide evidenced cost. Further work required as part of Transport Assessment,
HC-E1	Education	Provision of a 1.5 to 2 form-entry primary school, with early years provision	Essential	Developer / OCC	CIL	£9.166 million (1.5FE) to £10.952 million (2FE).	Costs are standard costs, based on prices as at (Q4) 2016 and would be index linked until date of payment using the PUBSEC Tender Price Index. Cost exclude land costs, and any on-site abnormal costs that may arise. Depending on the specific characteristics of the site, these cost may be subject to change.

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
							Size of school subject to confirmed housing number and mix, and pupil generation.
HC-E2	Education	Contribute towards increasing secondary and SEN school capacity	Essential	Developer / OCC	CIL	TBC	Further work is needed to determine the specific provision required and cost. This will need to be done through more detailed discussion with the Education Authority (OCC).
HC-H1	Health and social care	Healthcare contributions	Essential	Developer and OxCCG	If necessary, on-site: S106 Off-site: CIL	£1,008,000	Costs based on the 'West Kent' model adopted by OxCCG.
HC-EM1	Emergency Services	Thames Valley Police Contribution	Desirable	Developer and Emergency providers	S106	£50,660	Cost provided by Thames Valley Police (2018) and relate to: staff set up costs, provision of new vehicles and bikes, premises, mobile IT, and ANPR cameras.
HC-CS1	Community and Sports Facilities: Outdoor Sport and Recreation	Outdoor Bowling Green contributions: 0.11 Greens	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£15,400	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
HC-CS2		Outdoor Tennis: 0.93 club courts	Desirable			£93,000	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
HC-CS3		AGPs: 0.07 AGPs	Desirable			£66,850	Cost has been determined using Sport England's Facility Costs (June 2017) for Senior Football. Further work is needed to determine the specific provision required on-site. Further work is needed to determine the specific

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
							provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
HC-CS4		Playing Pitch Provision: 2.77 ha	Desirable			£313,933	Cost has been determined using Sport England's Facility Costs (June 2017) for Senior Football. No costs for changing rooms have been included. VoWH Leisure and Sports Facility Study (2014) sets out that a senior football pitch is 0.75ha.
HC-CS5	Community and Sports Facilities: Community Facilities	Community facilities contributions: 287 sq.m	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£434,518	Cost has been determined using LPP1 / IDP values. Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
HC-CS6	Community and Sport Facilities: Indoor Sports	Sports Hall contributions: 0.7 courts	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£493,500	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
HC-CS7		Swimming Pools contributions: 27.15 sq.m. water space	Desirable			£91,293	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
							document and will ultimately be determined through the development management process when determining a future planning application.
HC-CS8		Health and Fitness contributions: 13.50 stations	Desirable			£367,200	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
HC-CS9		Indoor Bowling Green contributions: 0.19 rinks	Desirable			£67,291	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
HC-CS10		Squash: 0.24 courts	Desirable			£24,000	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
HC-G11	Green Infrastructure and Open Space: Open Space, Allotments and Children's Play	Designated Equipped Playing Space: 0.60 ha	Desirable	Developer and VoWH	On-site S106 Off-site CIL	TBC	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
HC-GI2		Youth/MUGA: 0.72 ha	Desirable			£1,335,038	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
HC-GI3		15% of residential area as Public Open Space: 5.52 ha	Desirable			£276,276	Cost has been determined using Spon's Architects' and Builders' Price Book (2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
HC-GI4		Allotment provision: 0.956 ha	Desirable			£21,935	Cost has been determined using Spon's Architects' and Builders' Price Book (2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
HC-U1	Utilities	Localised upgrades to electricity distribution network	Essential	Developer and SSEN	Developer agreement with statutory undertaker	TBC	Costs associated with required upgrades will be determined by SSEN, when a connection application is submitted.
HC-U2	Utilities	Upgrades to Milton Primary may be required.	Essential	Developer and SSEN	TBC	TBC	The costs of the upgrades to Milton Primary will likely be funded by the series of developers. However, the extent of potential upgrades and any associated costs for the developer will only be realised once a connection application is submitted.

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
HC-U3	Utilities	Localised upgrades to gas distribution network	Essential	Developer and SGN	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
HC-U4	Utilities	Strategic water supply and distribution network upgrades	Essential	Developer and Thames Water	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
HC-U5	Utilities	Localised upgrades to drainage infrastructure.	Essential	Developer and Thames Water	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
HC-FR1	Flood Risk	Enhancement, improvement and upgrades to culverts and streams on-site.	Essential	Developer and OCC	S106	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
HC-FR2	Flood Risk	Sustainable Drainage System (SuDS).	Essential	Developer and OCC	S106	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.

A1.2 North West of Grove (400 dwellings)

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
NWG-T1	Transport	Access improvements including signalising Brook Lane Railway Bridge and contribution to completion of Grove Northern Link Road.	Essential	Developer and OCC	S106 / S278	£750,000 to £1.5 million	Costs based on precedent and comparative examples from elsewhere in the VoWH area. Final costs subject to change once a Transport Assessment, highway modelling, and subsequent highway design has been produced and approved.
NWG-T2	Transport	Enhancements to the current and future walking, cycling and public transport network.	Essential	Developer and OCC	S106 / S278	£1m to £2m	Costs based on precedent and comparative examples from elsewhere in the VoWH area. Final costs subject to change once a Transport Assessment, highway modelling, and subsequent highway design has been produced and approved.
NWG-T3	Transport	Any required improvement works on junctions identified in Transport Assessment.	Essential	Developer and OCC	S106 / S278	TBC	Schemes unknown, so not able to provide evidenced cost. Further work required as part of Transport Assessment,
NWG-E1	Education	Contribution to general enhancement of capacity across early years, primary, secondary and SEN education.	Essential	OCC and developer	CIL	TBC	Further work is needed to determine the specific provision required and cost. This will need to be done through more detailed discussion with the Education Authority (OCC).
NWG -H1	Healthcare and social care	Healthcare contributions	Essential	Developer and Ox CCG	If necessary, on-site: S106 Off-site: CIL	£403,200	Costs based on the 'West Kent' model adopted by OxCCG.
NWG-CS1	Community and Sports Facilities: Outdoor Sport and Recreation	Outdoor Bowling Green contributions: 0.04 Greens	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£5,600	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
							through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NWG-CS2		Outdoor Tennis: 0.37 club courts	Desirable			£37,000	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NWG-CS3		AGPs: 0.03 AGPs	Desirable			£28,650	Cost has been determined using Sport England's Facility Costs (June 2017) for Senior Football. Further work is needed to determine the specific provision required on-site. Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NWG-CS4		Playing Pitch Provision: 1.11 ha	Desirable			£125,800	Cost has been determined using Sport England's Facility Costs (June 2017) for Senior Football. No costs for changing rooms have been included. VoWH Leisure and Sports Facility Study (2014) sets out that a senior football pitch is 0.75ha.
NWG-CS5	Community and Sports Facilities: Community Facilities	Community Facilities Contributions: 115 sq.m.	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£174,110	Cost has been determined using LPP1 / IDP values. Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
							determined through the development management process when determining a future planning application.
NWG-CS6	Community and Sport Facilities: Indoor Sports	Sports Hall Contributions: 0.28 courts	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£197,400	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NWG-CS7		Swimming Pools contributions: 10.86 sq.m. water space	Desirable			£36,517	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NWG-CS8		Health and Fitness contributions: 5.39 stations	Desirable			£146,610	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NWG-CS9		Bowling Green contributions: 0.076 rinks	Desirable			£26,920	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
							document and will ultimately be determined through the development management process when determining a future planning application.
NWG-CS10		Squash: 0.09 courts	Desirable			£7,000	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NWG-GI1	Green Infrastructure and Open Space: Open Space, Allotments and Children's Play	Designated Equipped Playing Space: 0.24 ha	Desirable	Developer and VoWH	On-site S106 Off-site CIL	TBC	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NWG-GI2		Youth/MUGA: 0.29 ha	Desirable			£531,790	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NWG-GI3		15% of residential area as Public Open Space: 4.25 ha	Desirable			£212,712	Cost has been determined using Spon's Architects' and Builders' Price Book (2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NWG-GI4		Allotment Provision: 0.38 ha	Desirable			£8,682	Cost has been determined using Spon's Architects' and Builders' Price Book (2017). Further work is needed to

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
							determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NWG-GI5	Cemetery	Expansion and enhancement of cemetery.	Desirable	Developer / VoWH / Parish Council	CIL	TBC	Further discussion is required between VoWH, relevant Parish Council and developer as to cost and delivery mechanisms for this infrastructure.
NWG-U1	Utilities	Localised upgrades to electricity distribution network	Essential	Developer and SSEN	Developer agreement with statutory undertaker	TBC	Costs associated with required upgrades will be determined by SSEN, when a connection application is submitted.
NWG-U2	Utilities	Localised upgrades to gas distribution network	Essential	Developer and SGN	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
NWG-U3	Utilities	Strategic water supply and distribution network upgrades	Essential	Developer and Thames Water	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
NWG-U4	Utilities	Localised upgrades to drainage infrastructure.	Essential	Developer and Thames Water	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
NWG-FR1	Flood Risk	Enhancement, improvement and upgrades to culverts and streams on-site.	Essential	Developer and OCC	S106	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
		Improvements to mitigate impacts on groundwater quality.					
NWG-FR2	Flood Risk	Sustainable Drainage System (SuDS)	Essential	Developer and OCC	S106	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application

A1.3 Dalton Barracks (Shippon) (1,200 dwellings)

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
DB-T1	Transport	Access improvements on to B4017, A34 and A415 (along with other highway improvements (as required)).	Essential	Developer and OCC	S106 / S278	£2.5m to £4.5m	Costs based on precedent and comparative examples from elsewhere in the VoWH area. Final costs subject to change once a Transport Assessment, highway modelling, and subsequent highway design has been produced and approved.
DB-T2	Transport	Enhancements to the current and future walking, cycling and public transport network – including enhancing connections to Abingdon.	Essential	Developer and OCC	S106 / S278	£1m to £2.5m	Costs based on precedent and comparative examples from elsewhere in the VoWH area. Final costs subject to change once a Transport Assessment, highway modelling, and subsequent highway design has been produced and approved.
DB-T3	Transport	Any required improvement works on junctions identified in Transport Assessment.	Essential	Developer and OCC	S106 / S278	TBC	Schemes unknown, so not able to provide evidenced cost. Further work required as part of Transport Assessment,
DB-E1	Education	Provision of a 2 form-entry primary school, with early years provision	Essential	Developer / OCC	CIL	£10.952m	Costs are standard costs, based on prices as at (Q4) 2016 and would be index linked until date of payment using the PUBSEC Tender Price Index. Cost exclude land costs, and any on-site abnormal costs that may arise. Depending on the specific characteristics of the site, these cost may be subject to change. Size of school subject to confirmed housing number and mix, and pupil generation.
DB-E2	Education	Contribute towards increasing secondary and SEN school capacity.	Essential	Developer / OCC	CIL	TBC	Further work is needed to determine the specific provision required and cost. This will need to be done through more detailed discussion with the Education Authority (OCC).

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
DB-E3	Education	Provision of new primary and secondary education facilities (required to accommodate growth beyond the LPP2 period and beyond 2031); as well as contribution towards SEN.	Desirable	Developer and OCC	CIL	TBC	Further discussion with OCC is required to determine requirement and cost of secondary school provision. Current understanding is for a 10.55 ha land take within the Dalton Barracks site. Requirement is only triggered when additional development, over and above the 1,200 dwellings occurs – therefore currently classified as desirable.
DB -H1	Health and social care	Healthcare contributions	Essential	Developer and Ox CCG	On-site (if necessary): S106 Off-site: CIL	£1,209,600	Costs based on the ‘West Kent’ model adopted by OxCCG.
DB-EM1	Emergency Services	Thames Valley Police Contribution	Desirable	Developer and Emergency providers	S106	£160,745	Cost provided by Thames Valley Police (2018) and relate to: staff set up costs, provision of new vehicles and bikes, premises, mobile IT, and ANPR cameras.
DB-CS1	Community and Sports Facilities: Outdoor Sport and Recreation	Bowling Green Contributions: 0.13 Greens	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£18,200	Cost has been determined using Sport England’s Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
DB-CS2		Outdoor Tennis: 0.12 club courts	Desirable			£112,000	Cost has been determined using Sport England’s Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
DB-CS3		AGPs: 0.09 AGPs	Desirable			£85,950	Cost has been determined using Sport England's Facility Costs (June 2017) for Senior Football. Further work is needed to determine the specific provision required on-site. Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
DB-CS4		Playing Pitch Provision: 3.33 ha	Desirable			£377,400	Cost has been determined using Sport England's Facility Costs (June 2017) for Senior Football. No costs for changing rooms have been included. VoWH Leisure and Sports Facility Study (2014) sets out that a senior football pitch is 0.75ha.
DB-CS5	Community and Sports Facilities: Community Facilities	Community Facilities Contributions: 344.16 sq.m.	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£521,058	Cost has been determined using LPP1 / IDP values. Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
DB-CS6	Community and Sport Facilities: Indoor Sports	Sports Hall Contributions: 0.83 courts	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£585,150	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
DB-CS7		Swimming Pools contributions: 32.58 sq.m. water space	Desirable			£109,552	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
DB-CS8		Health and Fitness contributions: 16.18 stations	Desirable			£440,640	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
DB-CS9		Bowling Green contributions: 0.23 rinks	Desirable			£81,458	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
DB-CS10		Squash: 0.29 courts	Desirable			£29,000	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
DB-GI1	Green Infrastructure and Open Space: Open Space, Allotments and Children's Play	Designated Equipped Playing Space: 0.72 ha	Desirable	Developer and VoWH	On-site S106 Off-site CIL	TBC	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
DB-GI2		Youth/MUGA: 0.86 ha	Desirable			£1,594,629	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
DB-GI3		15% of residential area as Public Open Space: 43.19 ha	Desirable			£2,161,860	Cost has been determined using Spon's Architects' and Builders' Price Book (2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
DB-GI4		Allotment Provision: 0.66 ha	Desirable			£26,212	Cost has been determined using Spon's Architects' and Builders' Price Book (2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
DB-GI5	Green Infrastructure and Open	Country Park	Essential	Developer and VoWH	S106 / CIL	£4,004,371	Based upon the analysis of other Country Park examples delivered in other local authority areas.

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
	Space: Country Park						
DB-U1	Utilities	Localised upgrades to electricity distribution network	Essential	Developer and SSEN	Developer agreement with statutory undertaker	TBC	Extent of the works and associated costs will be determined by SSEN, when a connection application is submitted.
DB-U2	Utilities	Localised upgrades to gas distribution network	Essential	Developer and SGN	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
DB-U3	Utilities	Strategic water supply and distribution network upgrades	Essential	Developer and Thames Water	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
DB-U4	Utilities	Localised upgrades to drainage infrastructure.	Essential	Developer and Thames Water	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
DB-FR1	Flood Risk	Enhancement, improvement and upgrades to culverts and streams on-site	Essential	Developer and OCC	S106	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application
DB-FR2	Flood Risk	Sustainable Drainage System (SuDS)	Essential	Developer and OCC	S106	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application

A1.4 East of Kingston Bagpuize (600 dwellings)

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
EKB-T1	Transport	Access to be provided from A420 and the A415 via two new developer delivered roundabouts and a new link road through the site at A road standard.	Essential	Developer and OCC	S106 / S278	£3.5m to £6m	Costs based on precedent and comparative examples from elsewhere in the VoWH area. Final costs subject to change once a Transport Assessment, highway modelling, and subsequent highway design has been produced and approved.
EKB-T2	Transport	Removal of existing lay-bays on the A420 and replacement (if required).	Essential	Developer and OCC	S106 / S278		
EKB-T3	Transport	Enhancements to the current and future walking, cycling and public transport network – including enhancing connectivity across the A420 and to connect to Kingston Bagpuize, Kingston Business Park and to Abingdon-on-Thames.	Essential	Developer and OCC	S106 / S278	£1m to £2m	Costs based on precedent and comparative examples from elsewhere in the VoWH area. Final costs subject to change once a Transport Assessment, highway modelling, and subsequent highway design has been produced and approved.
EKB-T4	Transport	Any required improvement works on junctions identified in Transport Assessment.	Essential	Developer and OCC	S106 / S278	TBC	Schemes unknown, so not able to provide evidenced cost. Further work required as part of Transport Assessment,

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
EKB-E1	Education	A new 1 form entry primary school, with early years provision.	Essential	Developer and OCC	S106 / CIL	£7,212,015	Costs are standard costs, based on prices as at (Q4) 2016 and would be index linked until date of payment using the PUBSEC Tender Price Index. Cost exclude land costs, and any on-site abnormal costs that may arise. Depending on the specific characteristics of the site, these cost may be subject to change. Size of school subject to confirmed housing number and mix, and pupil generation.
EKB-E3	Education	Contributions towards increasing secondary school and SEN school capacity.	Essential	Developer and OCC	CIL	TBC	Further work is needed to determine the specific provision required and cost. This will need to be done through more detailed discussion with the Education Authority (OCC).
EKB-H1	Health and social care	Contribution to general enhancement of capacity of health and social care	Essential	Developer and CCG	If necessary, on-site: S106 Off-site: CIL	£604,800	Costs based on the 'West Kent' model adopted by OxCCG.
EKB -CS1	Community and Sports Facilities: Outdoor Sport and Recreation	Bowling Green Contributions: 0.07 Greens	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£9,800	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EKB -CS2		Outdoor Tennis: 0.56 club courts	Desirable			£56,000	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
EKB -CS3		AGPs: 0.04 AGPs	Desirable			£38,200	Cost has been determined using Sport England's Facility Costs (June 2017) for Senior Football. Further work is needed to determine the specific provision required on-site. Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EKB -CS4		Playing Pitch Provision: 1.66 ha	Desirable			£188,133	Cost has been determined using Sport England's Facility Costs (June 2017) for Senior Football. No costs for changing rooms have been included. VoWH Leisure and Sports Facility Study (2014) sets out that a senior football pitch is 0.75ha.
EKB -CS5	Community and Sports Facilities: Community Facilities	Community Facilities Contributions: 172.08 sq.m	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£260,529	Cost has been determined using LPP1 / IDP values. Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EKB -CS6	Community and Sport Facilities: Indoor Sports	Sports Hall Contributions: 0.42 courts	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£296,100	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
EKB -CS7		Swimming Pools contributions: 16.29 sq.m. water space	Desirable			£54,776	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EKB -CS8		Health and Fitness contributions: 8.09 stations	Desirable			£220,320	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EKB CS9		Bowling Green contributions: 0.11 rinks	Desirable			£38,958	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EKB CS10		Squash: 0.14 courts	Desirable			£14,000	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
EKB -GI1	Green Infrastructure and Open Space: Open Space, Allotments and Children's Play	Designated Equipped Playing Space: 0.36 ha	Desirable	Developer and VoWH	On-site S106 Off-site CIL	TBC	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EKB -GI2		Youth/MUGA: 0.43 ha	Desirable			£797,315	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EKB -GI3		15% of residential area as Public Open Space: 5.2 ha	Desirable			£260,735	Cost has been determined using Spon's Architects' and Builders' Price Book (2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EKB -GI4		Allotment Provision: 0.57 ha	Desirable			£13,024	Cost has been determined using Spon's Architects' and Builders' Price Book (2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EKB-U1	Utilities	Localised upgrades to electricity distribution network	Essential	Developer and SSEN	Developer agreement with	TBC	Costs associated with required upgrades will be determined by SSEN, when a connection application is submitted.

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
					statutory undertaker		
EKB-U2	Utilities	Localised upgrades to gas distribution network	Essential	Developer and SGN	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
EKB-U3	Utilities	Strategic water supply and distribution network upgrades	Essential	Developer and Thames Water	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
EKB-U4	Utilities	Localised upgrades to drainage infrastructure.	Essential	Developer and Thames Water	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
EKB-FR1	Flood Risk	Sustainable Drainage System (SuDS)	Essential	Developer / OCC	S106	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.

A1.5 South East of Marcham (90 dwellings)

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
SEM-T1	Transport	Access from A415 (Marcham Road).	Essential	Developer and OCC	S106 / S278	£500,000 to £1m	Costs based on precedent and comparative examples from elsewhere in the VoWH area. Final costs subject to change once a Transport Assessment, highway modelling, and subsequent highway design has been produced and approved.
SEM-T2	Transport	Enhancements to the current and future walking, cycling and public transport network – including enhancing connectivity to Marcham and Abingdon.	Essential	Developer and OCC	S106 / S278	£250,000 to £500,000	Costs based on precedent and comparative examples from elsewhere in the VoWH area. Final costs subject to change once a Transport Assessment, highway modelling, and subsequent highway design has been produced and approved.
SEM-T3	Transport	Any required improvement works on junctions identified in Transport Assessment. This should also consider any impacts on AQMA in Marcham.	Essential	Developer and OCC	S106 / S278	TBC	Schemes unknown, so not able to provide evidenced cost. Further work required as part of Transport Assessment,
SEM-E1	Education	Contribution to general enhancement of capacity across early years, primary, secondary, and SEN education	Essential	Developer and OCC	CIL	TBC	Further work is needed to determine the specific provision required and cost. This will need to be done through more detailed discussion with the Education Authority (OCC).
SEM-H1	Health and social care	Contribution to general enhancement of capacity of health and social care	Essential	Developer and CCG	If necessary, on-site: S106 Off-site: CIL	£90,720	Further discussions with Oxfordshire CCG to confirm provision and costs.

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
SEM - CS1	Community and Sports Facilities: Outdoor Sport and Recreation	Bowling Green Contributions: 0.01 Greens	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£1,400	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
SEM - CS2		Outdoor Tennis: 0.08 club courts	Desirable			£8,000	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
SEM - CS3		AGPs: 0.006 AGPs	Desirable			£5,730	Cost has been determined using Sport England's Facility Costs (June 2017) for Senior Football. Further work is needed to determine the specific provision required on-site. Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
SEM - CS4		Playing Pitch Provision: 0.25 ha	Desirable			£28,333	Cost has been determined using Sport England's Facility Costs (June 2017) for Senior Football. No costs for changing rooms have been included. VoWH Leisure and Sports Facility Study (2014) sets out that a senior football pitch is 0.75ha.

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
SEM - CS5	Community and Sports Facilities: Community Facilities	Community Facilities Contributions: 25.8 sq.m	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£39,079	Cost has been determined using LPP1 / IDP values. Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
SEM - CS6	Community and Sport Facilities: Indoor Sports	Sports Hall Contributions: 0.06 courts	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£42,300	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
SEM - CS7		Swimming Pools contributions: 2.44 sq.m. water space	Desirable			£8,205	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
SEM - CS8		Health and Fitness contributions: 1.21 stations	Desirable			£32,912	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
SEM - CS9		Bowling Green contributions: 0.017 rinks	Desirable			£6,020	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
SEM CS10		Squash:0.02 courts	Desirable			£3,000	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
SEM -GI1	Green Infrastructure and Open Space: Open Space, Allotments and Children's Play	Designated Equipped Playing Space: 0.05 ha	Desirable	Developer and VoWH	On-site S106 Off-site CIL	TBC	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
SEM – GI2		Youth/MUGA: 0.06 ha	Desirable			£111,253	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
SEM – GI3		15% of residential area as Public Open Space: 0.52 ha	Desirable			£25,975	Cost has been determined using Spon's Architects' and Builders' Price Book (2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
							be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
SEM – GI4		Allotment Provision: 0.086 ha	Desirable			£1,965	Cost has been determined using Spon's Architects' and Builders' Price Book (2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
SEM–U1	Utilities	Localised upgrades to electricity distribution network	Essential	Developer and SSEN	Developer agreement with statutory undertaker	TBC	Costs associated with required upgrades will be determined by SSEN, when a connection application is submitted.
SEM–U2	Utilities	Localised upgrades to gas distribution network	Essential	Developer and SGN	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
SEM–U3	Utilities	Strategic water supply and distribution network upgrades	Essential	Developer and Thames Water	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
SEM–U4	Utilities	Localised upgrades to drainage infrastructure.	Essential	Developer and Thames Water	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
SEM–U5	Utilities	Possible diversion of existing public sewer.	Desirable	Developer and Thames Water	Developer agreement with	TBC	The feasibility of this proposal and the associated costs will be investigated through more detailed discussion with

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
					statutory undertaker		the statutory provider during the development management process when determining a future planning application.
SEM-FR1	Flood Risk	Sustainable Drainage System (SuDS)	Essential	Developer / OCC	S106	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application

A1.6 North of East Hanney (80 dwellings)

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
NEH-T1	Transport	Access improvements on to A338.	Essential	Developer and OCC	S106 / S278	£400,000 to £850,000	Costs based on precedent and comparative examples from elsewhere in the VoWH area. Final costs subject to change once a Transport Assessment, highway modelling, and subsequent highway design has been produced and approved.
NEH-T2	Transport	Enhancements to the current and future walking, cycling and public transport network. – including enhancing connectivity to the village.	Essential	Developer and OCC	S106 / S278	£250,000 to £500,000	Costs based on precedent and comparative examples from elsewhere in the VoWH area. Final costs subject to change once a Transport Assessment, highway modelling, and subsequent highway design has been produced and approved.
NEH-T3	Transport	Any required improvement works on junctions identified in Transport Assessment.	Essential	Developer and OCC	S106 / S278	TBC	Schemes unknown, so not able to provide evidenced cost. Further work required as part of Transport Assessment,
NEH-E1	Education	Contribution to general enhancement of capacity across early years, primary, secondary and SEN education.	Essential	Developer and OCC	CIL	TBC	Further work is needed to determine the specific provision required and cost. This will need to be done through more detailed discussion with the Education Authority (OCC).
NEH-H1	Health and social care	Contribution to general enhancement of capacity of health and social care	Essential	Developer and CCG	If necessary, on-site: S106 Off-site: CIL	£80,640	Costs based on the ‘West Kent’ model adopted by OxCCG.
NEH-CS1	Community and Sports Facilities:	Bowling Green Contributions: 0.01 Greens	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£1,400	Cost has been determined using Sport England’s Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
	Outdoor Sport and Recreation						contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NEH-CS2		Outdoor Tennis: 0.07 club courts	Desirable			£7,000	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NEH-CS3		AGPs: 0.01 AGPs	Desirable			£9,550	Cost has been determined using Sport England's Facility Costs (June 2017) for Senior Football. Further work is needed to determine the specific provision required on-site. Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NEH-CS4		Playing Pitch Provision: 0.22 ha	Desirable			£24,933	Cost has been determined using Sport England's Facility Costs (June 2017) for Senior Football. No costs for changing rooms have been included. VoWH Leisure and Sports Facility Study (2014) sets out that a senior football pitch is 0.75ha.
NEH-CS5		Community and Sports Facilities: Community Facilities	Community Facilities Contributions: 23.0 sq.m.	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£34,737

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
							work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NEH-CS6	Community and Sport Facilities: Indoor Sports	Sports Hall Contributions: 0.06 courts	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£42,300	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NEH-CS7		Swimming Pools contributions: 2.17 sq.m. water space	Desirable			£7,297	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NEH-CS8		Health and Fitness contributions: 1.08 stations	Desirable			£29,920	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NEH-CS9		Bowling Green contributions: 0.02 rinks	Desirable			£7,083	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
							through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NEH-CS10		Squash: 0.02 courts	Desirable			£2,000	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NEH-GI1	Green Infrastructure and Open Space: Open Space, Allotments and Children's Play	Designated Equipped Playing Space: 0.05 ha	Desirable	Developer and VoWH	On-site S106 Off-site CIL	TBC	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NEH-GI2		Youth/MUGA: 0.06 ha	Desirable			£111,253	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NEH-GI3		15% of residential area as Public Open Space: 0.52 ha	Desirable			£25,825	Cost has been determined using Spon's Architects' and Builders' Price Book (2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
NEH-GI4		Allotment Provision: 0.08 ha	Desirable			£1,828	Cost has been determined using Spon's Architects' and Builders' Price Book (2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NEH-U1	Utilities	Localised upgrades to electricity distribution network	Essential	Developer and SSEN	Developer agreement with statutory undertaker	TBC	Costs associated with required upgrades will be determined by SSEN, when a connection application is submitted.
NEH-U2	Utilities	Localised upgrades to gas distribution network	Essential	Developer and SGN	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
NEH-U3	Utilities	Strategic water supply and distribution network upgrades	Essential	Developer and Thames Water	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
NEH-U4	Utilities	Localised upgrades to drainage infrastructure.	Essential	Developer and Thames Water	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
NEH-FRD1	Surface Water Drainage	Sustainable Drainage System (SuDS)	Essential	Developer / OCC	S106	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application

A1.7 North East of East Hanney

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
EEH-T1	Transport	Access improvements on to Steventon Road.	Essential	Developer and OCC	S106 / S278	£250,000 to £400,000	Costs based on precedent and comparative examples from elsewhere in the VoWH area. Final costs subject to change once a Transport Assessment, highway modelling, and subsequent highway design has been produced and approved.
EEH-T2	Transport	Enhancements to the current and future walking, cycling and public transport network. – including enhancing connectivity to the village.	Essential	Developer and OCC	S106 / S278	£250,000 to £500,000	Costs based on precedent and comparative examples from elsewhere in the VoWH area. Final costs subject to change once a Transport Assessment, highway modelling, and subsequent highway design has been produced and approved.
EEH-T3	Transport	Any required improvement works on junctions identified in Transport Assessment.	Essential	Developer and OCC	S106 / S278	TBC	Schemes unknown, so not able to provide evidenced cost. Further work required as part of Transport Assessment,
EEH-E1	Education	Contribution to general enhancement of capacity across early years, primary, secondary and SEN education.	Essential	Developer and OCC	CIL	TBC	Further work is needed to determine the specific provision required and cost. This will need to be done through more detailed discussion with the Education Authority (OCC).
EEH-H1	Health and social care	Contribution to general enhancement of capacity of health and social care	Essential	Developer and CCG	If necessary, on-site: S106 Off-site: CIL	£50,400	Further discussions with Oxfordshire CCG to confirm provision and costs.
EEH-CS1	Community and Sports Facilities: Outdoor Sport and Recreation	Bowling Green Contributions: 0.01 Greens	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£1,400	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
							determined through the development management process when determining a future planning application.
EEH-CS2		Outdoor Tennis: 0.05 club courts	Desirable			£5,000	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EEH-CS3		AGPs: 0.00 AGPs	Desirable			£0.00	Cost has been determined using Sport England's Facility Costs (June 2017) for Senior Football. Further work is needed to determine the specific provision required on-site. Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EEH-CS4		Playing Pitch Provision: 0.14 ha	Desirable			£15,867	Cost has been determined using Sport England's Facility Costs (June 2017) for Senior Football. No costs for changing rooms have been included. VoWH Leisure and Sports Facility Study (2014) sets out that a senior football pitch is 0.75ha.
EEH-CS5	Community and Sports Facilities:	Community Facilities Contributions: 14.34 sq.m	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£21,711	Cost has been determined using LPP1 / IDP values. Further work is needed to determine the specific provision required on-site and where on

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
	Community Facilities						site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EEH-CS6	Community and Sport Facilities: Indoor Sports	Sports Hall Contributions: 0.03 courts	Desirable	Developer and VoWH	On-site S106 Off-site CIL	£21,150	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EEH-CS7		Swimming Pools contributions: 1.36 sq.m. water space	Desirable			£4,573	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EEH-CS8		Health and Fitness contributions: 0.7 stations	Desirable			£19,040	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
							done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EEH-CS9		Bowling Green contributions: 0.01 rinks	Desirable			£3,542	Cost has been determined using Sport England's Facility Costs (June 2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EEH-CS10		Squash: 0.01 courts	Desirable			£2,000	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EEH-GI1	Green Infrastructure and Open Space: Open Space, Allotments and Children's Play	Designated Equipped Playing Space: 0.03 ha	Desirable	Developer and VoWH	On-site S106 Off-site CIL	TBC	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
EEH-GI2		Youth/MUGA: 0.04 ha	Desirable			£74,169	Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EEH-GI3		15% of residential area as Public Open Space: 0.36 ha	Desirable			£17,943	Cost has been determined using Spon's Architects' and Builders' Price Book (2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
EEH-GI4		Allotment Provision: 0.05 ha	Desirable			£1,142	Cost has been determined using Spon's Architects' and Builders' Price Book (2017). Further work is needed to determine the specific provision required on-site and where on site provision is not deemed appropriate, the level of any contributions which may be sought. This will be done through further iterations and work on the IDP as a live document and will ultimately be determined through the development management process when determining a future planning application.
NEEH-U1	Utilities	Localised upgrades to electricity distribution network	Essential	Developer and SSEN	Developer agreement with statutory undertaker	TBC	Costs associated with required upgrades will be determined by SSEN, when a connection application is submitted.

Reference	Infrastructure Type	Scheme	Essential or Desirable	Delivery Partners	Delivery Mechanism	Indicative Cost	Notes
NEEH-U2	Utilities	Possible diversion / undergrounding of electricity cables	Desirable	Developer and SSEN	Developer agreement with statutory undertaker	TBC	The feasibility of this proposal and the associated costs will be investigated through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
NEEH-U3	Utilities	Localised upgrades to gas distribution network	Essential	Developer and SGN	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
NEEH-U4	Utilities	Strategic water supply and distribution network upgrades	Essential	Developer and Thames Water	Developer agreement with statutory undertaker	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.
EEH-FRD1	Surface Water Drainage	Sustainable Drainage System (SuDS)	Essential	Developer / OCC	S106	TBC	Further work is needed to determine the specific provision required. This will be done through more detailed discussion with the statutory provider during the development management process when determining a future planning application.

Appendix B

Document List

B1 Document List

B1.1 Transport

- Connecting Oxfordshire: Local Transport Plan 2015 – 2031 (2015, and updated 2016):
 - Volume 1: Policy & Overall Strategy
 - Volume 7b: A420 Route Strategy
 - Volume 8: Part ii – Banbury, Bicester, Carterton, Science Vale & Science Vale Cycle Strategy and Witney Area Strategies.
- Vale of White Horse District Council Local Plan Part 2; Evaluation of Transport Impacts – Part 1 (March 2017).
- Vale of White Horse District Council Local Plan Part 2; Evaluation of Transport Impacts - Part 2 (October 1017).
- Sustainable Transport Study for the Abingdon to Oxford Corridor – Final Report (October 2017).
- Oxfordshire County Council – LPP2 Consultation Responses (May 2017 and November 2017).
- Network Rail – LPP2 Consultation Responses (May 2017 and November 2017).
- Highways England – LPP2 Consultation Responses (May 2017 and November 2017).
- Oxford Bus Company / Thames Travel – LPP2 Consultation Responses (May 2017 and November 2017).
- Oxfordshire Infrastructure Strategy (OXIS) – Growth and Infrastructure Analysis (April 2017 and November 2017).

B1.2 Education

- Oxfordshire County Council – Pupil Place Plan (2016 – 2020) (November 2016).
- Oxfordshire County Council – LPP2 Consultation Responses (May 2017 and November 2017).

B1.3 Health and social care

- NHS Oxfordshire Clinical Commissioning Group – LPP2 Consultation Responses (May 2017 and November 2017).
- NHS Oxfordshire Clinical Commissioning Group – Board Paper – Managing Population Growth (September 2017).

- NHS Oxfordshire Clinical Commissioning Group – Locality Place Based Primary Care Plan: South West Oxfordshire Locality (January 2018).
- Oxfordshire County Council – LPP2 Consultation Responses (May 2017 and November 2017).

B1.4 Emergency services

- Oxfordshire County Council – LPP2 Consultation Responses (May 2017 and November 2017).

B1.5 Community and Sports Facilities: Outdoor Sport and Recreation / Community Facilities / Indoor Sports

- Vale of White Horse District Council – Local Leisure Facilities – Final Report (June 2016).
- Vale of White Horse District Council – Joint Recreational Space, Local Leisure Facilities and Playing Pitch Study – Final Report (Open Spaces) (November 2016).
- Vale of White Horse District Council – Playing Pitch Study – Final Report (October 2015).
- Oxfordshire County Council – LPP2 Consultation Responses (May 2017 and November 2017).

B1.6 Green Infrastructure and Open Space: Open Space, Allotments and Children’s Play

- South Oxfordshire & Vale of White Horse District Councils - South & Vale Green Infrastructure Strategy (October 2017).
- Oxfordshire County Council – LPP2 Consultation Responses (May 2017 and November 2017).

B1.7 Utilities

- Scottish and Southern Electricity Networks – Central Southern England Long Term Development Statement (2016/2017).
- Scottish and Southern Electricity Networks - LPP2 Consultation Response (November 2017)
- SGN (Gas) – Long Term Development Statement (October 2016).
- Oxfordshire County Council – LPP2 Consultation Responses (May 2017 and November 2017).
- Vale of White Horse District Council - Draft Water Cycle Study Addendum (September 2017).

B1.8 Flood Risk

- Vale of White Horse District Council – Level 1 Strategic Flood Risk Assessment (SFRA) Update (October 2017).
- Thames Water (w, Savills) – LPP2 Consultation Responses (May 2017 and November 2017).
- Oxfordshire County Council – LPP2 Consultation Responses (May 2017 and November 2017).