BDP. flow GL Hearn

# TWO WATERS
# MASTERPLAN
# EVIDENCE BASE

Dacorum Borough Council

May 2017

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Aerial Image Source: Google Maps 2017

# 01 | Introduction

# Introduction

This report presents the evidence base, which supports the Two Waters Masterplan Guidance prepared on behalf of Dacorum Borough Council (DBC).

Paragraph 158 of the National Planning Policy Framework (March, 2012) requires planning policy to be based on adequate, up-to-date and relevant evidence about the characteristics and prospects of the area to which it relates. The Two Waters Masterplan Guidance is underpinned by an evidence base to ensure it is grounded in an understanding of the existing social, physical and economic context of Two Waters and to ensure the guidance promotes realistic and deliverable development.

The evidence base consists of an illustrative capacity study, which has been developed in response to the opportunities and constraints and adheres to the guidance set out in the masterplan, and transport and viability assessments of the amount of development likely to be delivered.

Information from the baseline analysis, stakeholder meetings, steering group meetings, consultation feedback and the transport and viability appraisals, were used to develop the capacity study. The process allows the feasibility of different forms of development to be tested and inform the Masterplan Vision, Objectives and Development Guidance.

## Purpose of the Capacity Study

Section 2 of this report provides an overview of the Two Waters capacity study. The capacity study was developed through an iterative process whereby different layouts, land uses and densities of development were explored to select a preferred form of development.

The capacity study was informed by the urban design, transport and viability analysis and discussed with stakeholders and the project Steering Group, before subsequently being refined. It is important to note that the capacity study represents one form of development, which could be realised. Other forms of development could come forward, where they adhere with the guidance included in the Masterplan Guidance.

The capacity study provides a mechanism to test the Maasterplan vision, objectives and guidance for their ability to: address the constraints and opportunities of the site in urban design terms, deal with potential transport impacts, deliver viable development and meet the aspirations of the local community. The capacity study has played an important role in exploring the possible forms of development and fine tuning the Masterplan Guidance to ensure it encourages an appropriate balance between: delivering DBC's housing and employment needs; achieving placemaking and sustainability objectives; promoting sustainable transport; ensuring viable development and meeting local aspirations.

## Viability

The viability appraisal, prepared by commercial consultants GL Hearn provides a baseline analysis detailing a property market overview with a focus on the residential development market as the likely predominant use and value driver, and a commentary on the emerging development scenarios and outcome of the viability analysis. GL Hearn's role is to provide property, viability and delivery advice to help to ensure that the Masterplan Guidance is based in commercial realism.

Positively, developer interest is generally strong in Two Waters and there are a number of projects which are well advanced. Equally there are opportunities which may be more challenging to deliver especially for sites which are already intensively developed.

The viability evidence base starts to test the viability of specific development opportunities under a range of scenarios in order to inform the evolution of the masterplan and the Planning Statement. However viability is subject to change due to a number of factors, including market conditions, refinement of proposals, detailed infrastructure and cost information, as well as phasing and the approach to implementation. Ultimately specific projects will require further technical assessments in order to understand and address the range of delivery challenges, risks, financial commitments, land ownership and other issues.

The viability analysis has been informed by a range of primary and secondary sources including a review of relevant studies, existing and evolving planning policy, an urban design review, a property market review and discussions with stakeholders and DBC officers.

Initial block layouts and indicative floor space schedules form the basis of the viability testing. The viability analysis includes an assessment of the likely gross development value, development costs and the resultant residual land value of the Key Development sites.

It is important to stress that the viability assessment do not constitute formal valuations under the provisions of the RICS Valuation Standards ('Red Book') however it is a market accepted approach to providing landowners, developers and investors with an early indication of viability.

Individual development appraisals have been undertaken using the Argus developer software package, which is a leading development appraisal package used by developers and consultants alike.

In undertaking the viability assessment, it is recognised that the work is intended to examine the Masterplan and support the evolution of the guidance within the Planning Statement. The appraisal is not intended to be a full viability appraisal but rather is used to inform the Masterplan Guidance. The expectation is that the proposals for Two Waters will evolve as detailed schemes progress through the development pipeline. Thus, the viability testing is undertaken to determine the broad likelihood of the deliverability of the development encouraged through the Masterplan Guidance

## Transport

The transport review, prepared by transport and movement consultants Urban Flow, is included in Section 4 of this report and provides a summary of existing site conditions with a focus on vehicular movements, public transport, pedestrian movement, cycling, roads and parking, an assessment of the impact of development likely to come forward and proposals included in the Masterplan Guidance.

Two Waters is served by two rail stations, which provide direct services to London in under 30 minutes. The area is also well connected to the local and strategic highway networks.

However the area suffers from a congested highway network and, more generally, a vehicle dominated environment. This vehicle domination has in part resulted from relatively limited public transport links and the distance from Hemel Hempstead town centre.

Therefore the Masterplan Guidance is not only aimed at identifying the potential of the development sites within this area but also in addition to wider studies, such as the Hertfordshire Growth and Transport Plan, indicate the broader changes that could be brought about in order to maximise sustainable travel and minimise any detrimental impacts.


MORRISON
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# 02 | The Capacity Study

# The Capacity Study

## The Capacity Study Process

The Two Waters capacity study was developed through an iterative design process, where designs were developed and refined in response to:

- Constraints and opportunities;
- Adopted and emerging planning policy;
- Urban design analysis;
- Transport analysis;
- Viability analysis;
- Meetings with key stakeholders;
- Steering group meetings;
- Meetings with Hertfordshire County Council;
- Public consultation exhibitions; and
- Public consultation workshops.

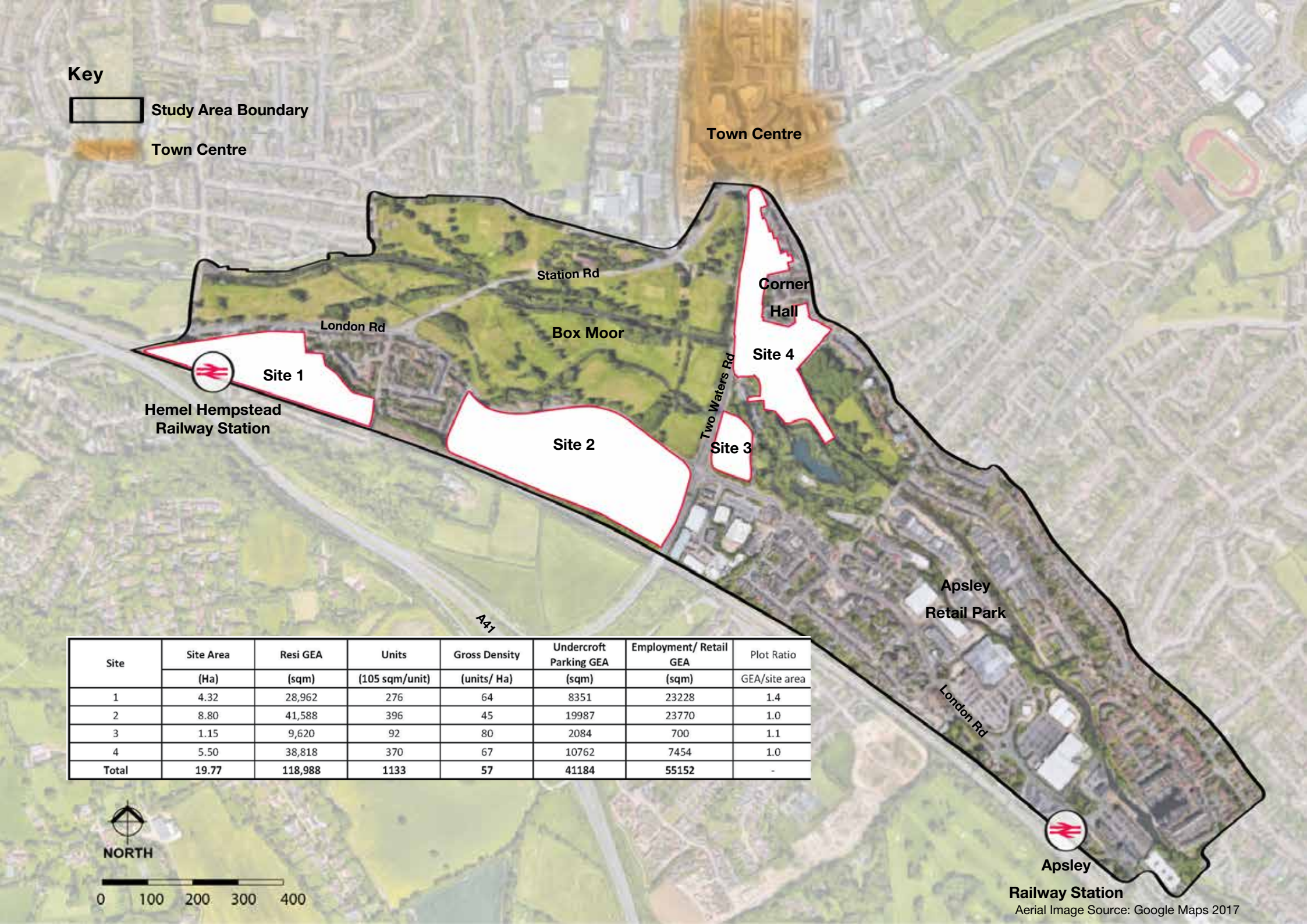
## Previous Iterations of the Capacity Study

Early iterations of the capacity study included higher development capacities and were considered to represent inappropriate forms of development within Two Waters. Specifically higher capacities of development were discounted for the following reasons:

- Negative impact on views and townscape due to building heights;
- Negative impacts on Boxmoor due to dominance of taller buildings;
- Negative viability impacts due to the requirement for underground car parking;
- Negative impacts on the local highways network due to increased vehicle movements;
- Poor relationships between existing and proposed buildings due to increase in density;
- Strong views expressed through public consultation regarding building heights and densities; and
- Views of council officers' expressed through Steering Group Meetings.

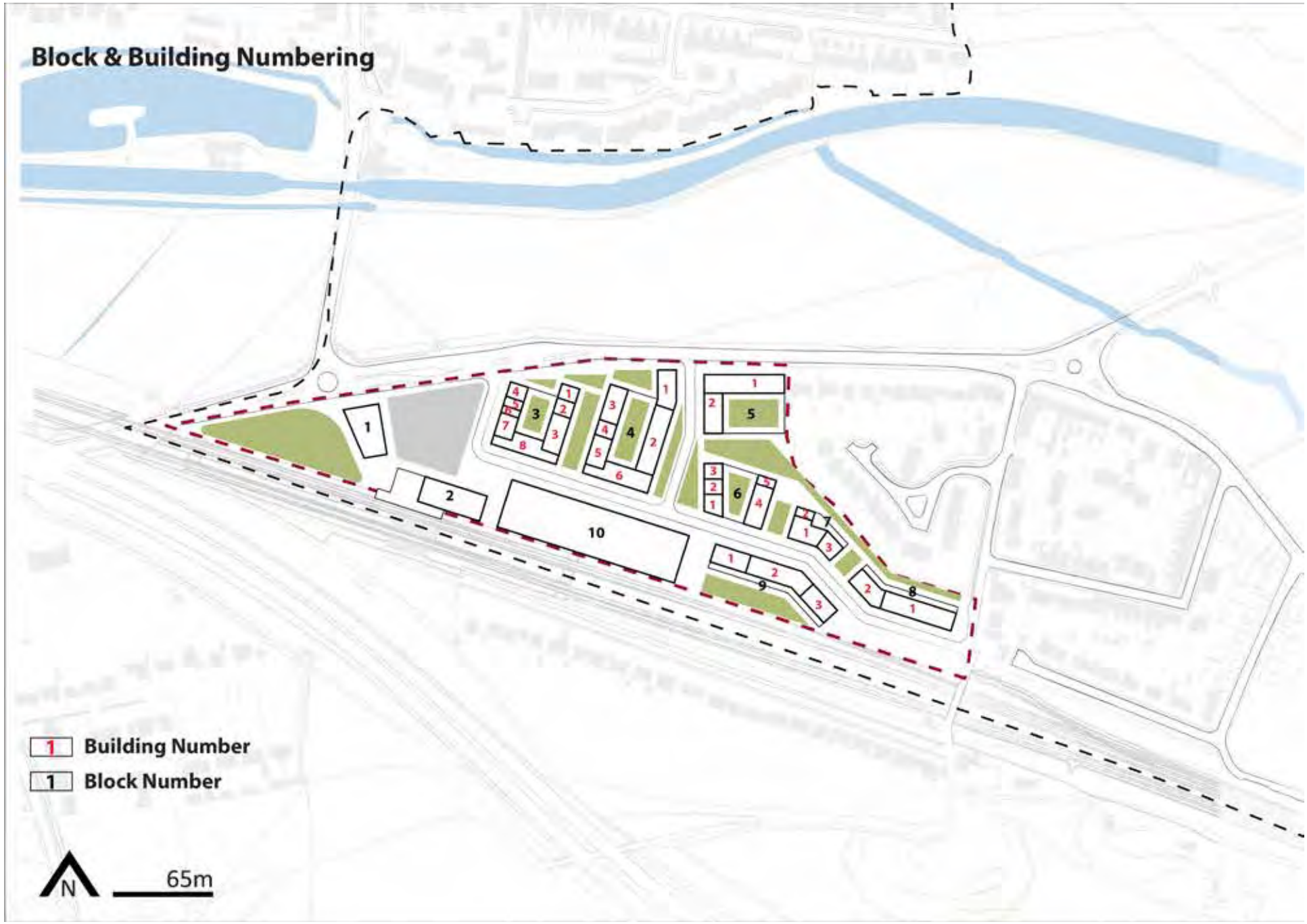
## The Two Waters Capacity Study

The Two Waters Capacity Study is considered to be an appropriate form of development, which meets the Masterplan Vision, Objectives and Design Guidance. It is important to note the capacity study represents one form of development and other forms of development are acceptable where they adhere to the guidance set out in the Masterplan Guidance.




| Site | Site Area | Resi GEA | Units | Gross Density | Undercroft Parking GEA | Employment/ Retail GEA | Plot Ratio |
|---|---|---|---|---|---|---|---|
| | (Ha) | (sqm) | (105 sqm/unit) | (units/ Ha) | (sqm) | (sqm) | GEA/site area |
| 1 | 4.32 | 28,962 | 276 | 64 | 8351 | 23228 | 1.4 |
| 2 | 8.80 | 41,588 | 396 | 45 | 19987 | 23770 | 1.0 |
| 3 | 1.15 | 9,620 | 92 | 80 | 2084 | 700 | 1.1 |
| 4 | 5.50 | 38,818 | 370 | 67 | 10762 | 7454 | 1.0 |
| Total | **19.77** | **118,988** | **1133** | **57** | **41184** | **55152** | - |

Aerial Image Source: Google Maps 2017


Block & Building Numbering
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1 Building Number
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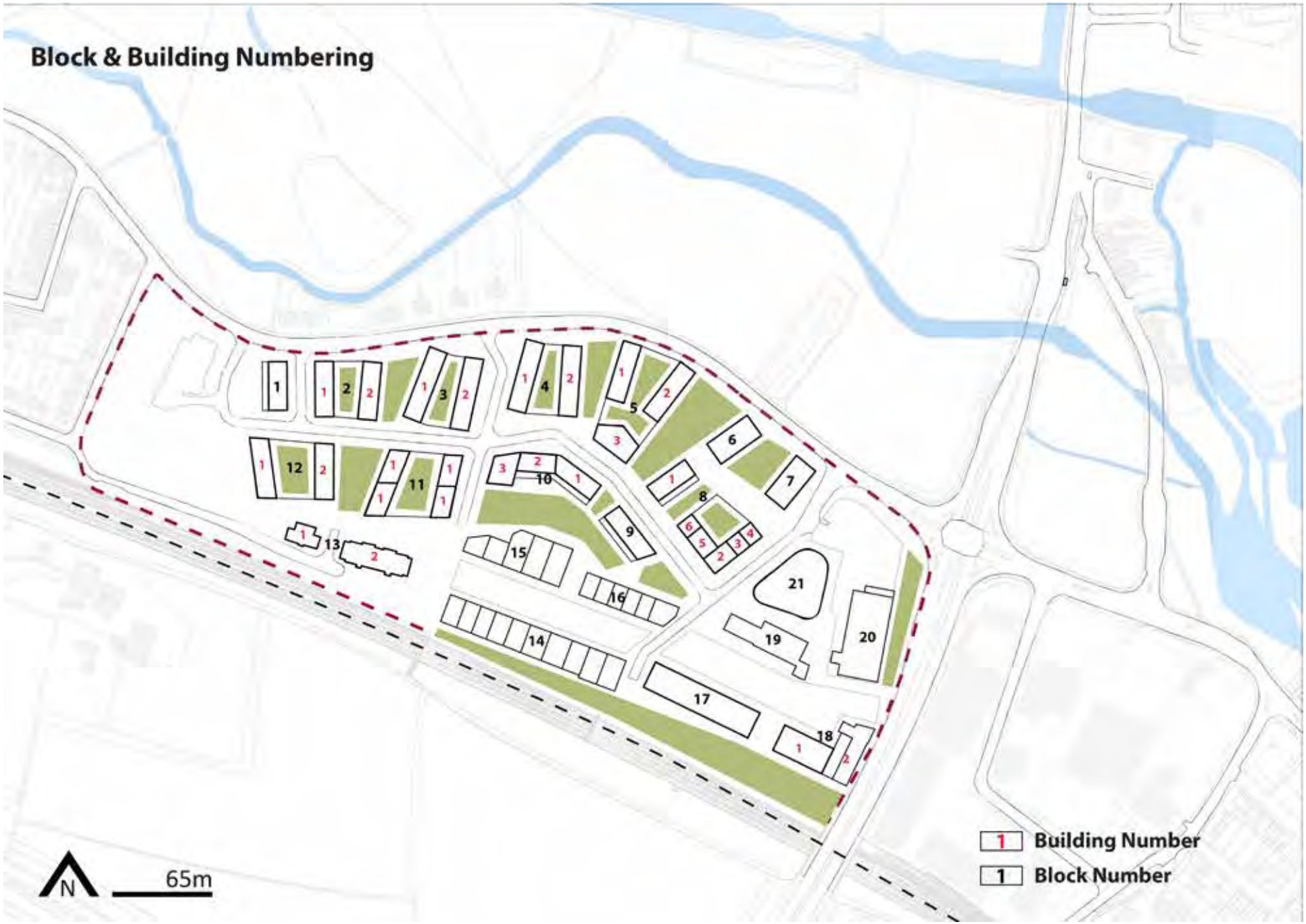
| | | | Residential | | | | Undercroft Car Park | | | | | Employment / Multi-storey Car Park | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Footprint (sqm) | Levels | GEA (sqm) | UNITS (105 sqm/unit) | Footprint | Levels | GEA | Spaces | Parking Ratio (100 sqm/unit) | Footprint (sqm) | Levels | GEA (sqm) | | |
| Site 1 | 1 | 1 | - | | | | | | | | | 630 | 8 | 5,040 | | |
| | 2 | 1 | - | | | | | | | | | - | | | | |
| | | 2 | - | | | | | | | | | 707 | 4 | 2,828 | | |
| | 3 | GF | 685 | 1 | 685 | | 1,271 | 1 | 1,271 | | | | | | | |
| | | 1 | 120 | 3 | 360 | | | | | | | | | | | |
| | | 2 | 120 | 4 | 480 | | | | | | | | | | | |
| | | 3 | 300 | 5 | 1,500 | | | | | | | | | | | |
| | | 4 | 120 | 3 | 360 | | | | | | | | | | | |
| | | 5 | 72 | 4 | 288 | | | | | | | | | | | |
| | | 6 | 60 | 5 | 300 | | | | | | | | | | | |
| | | 7 | 180 | 6 | 1,080 | | | | | | | | | | | |
| | | 8 | 384 | 4 | 1,536 | | | | | | | | | | | |
| | 4 | GF | 1,011 | 1 | 1,011 | | 1,878 | 1 | 1,878 | | | | | | | |
| | | 1 | 293 | 3 | 879 | | | | | | | | | | | |
| | | 2 | 532 | 4 | 2,128 | | | | | | | | | | | |
| | | 3 | 288 | 3 | 864 | | | | | | | | | | | |
| | | 4 | 120 | 4 | 480 | | | | | | | | | | | |
| | | 5 | 240 | 5 | 1,200 | | | | | | | | | | | |
| | | 6 | 456 | 3 | 1,368 | | | | | | | | | | | |
| | 5 | GF | 692 | 1 | 692 | | 1,284 | 1 | 1,284 | | | | | | | |
| | | 1 | 624 | 3 | 1,872 | | | | | | | | | | | |
| | | 2 | 312 | 4 | 1,248 | | | | | | | | | | | |
| | 6 | GF | 498 | 1 | 498 | | 924 | 1 | 924 | | | | | | | |
| | | 1 | 153 | 5 | 765 | | | | | | | | | | | |
| | | 2 | 120 | 4 | 480 | | | | | | | | | | | |
| | | 3 | 120 | 2 | 240 | | | | | | | | | | | |
| | | 4 | 324 | 4 | 1,296 | | | | | | | | | | | |
| | | 5 | 72 | 3 | 216 | | | | | | | | | | | |
| | 7 | GF | 238 | 1 | 238 | | 443 | 1 | 443 | | | | | | | |
| | | 1 | 296 | 3 | 888 | | | | | | | | | | | |
| | | 2 | 72 | 2 | 144 | | | | | | | | | | | |
| | | 3 | 163 | 2 | 326 | | | | | | | | | | | |
| | 8 | 1 | 576 | 2 | 1,152 | | 1,140 | 1 | 1,140 | | | | | | | |
| | | 3 | 292 | 3 | 876 | | | | | | | | | | | |
| | 9 | 1 | 288 | 5 | 1,440 | | 1,410 | 1 | 1,410 | | | | | | | |
| | | 2 | 507 | 3 | 1,521 | | | | | | | | | | | |
| | | 3 | 276 | 2 | 552 | | | | | | | | | | | |
| | 10 | 1 | - | | | | | | | | | 3,840 | 5 | 19,200 | 750 | (spaces) |
| | **TOTAL** | | | | **28,962** | **276** | | | **8,351** | **298** | **1.08** | | | **27,068** | | |


Block & Building Numbering
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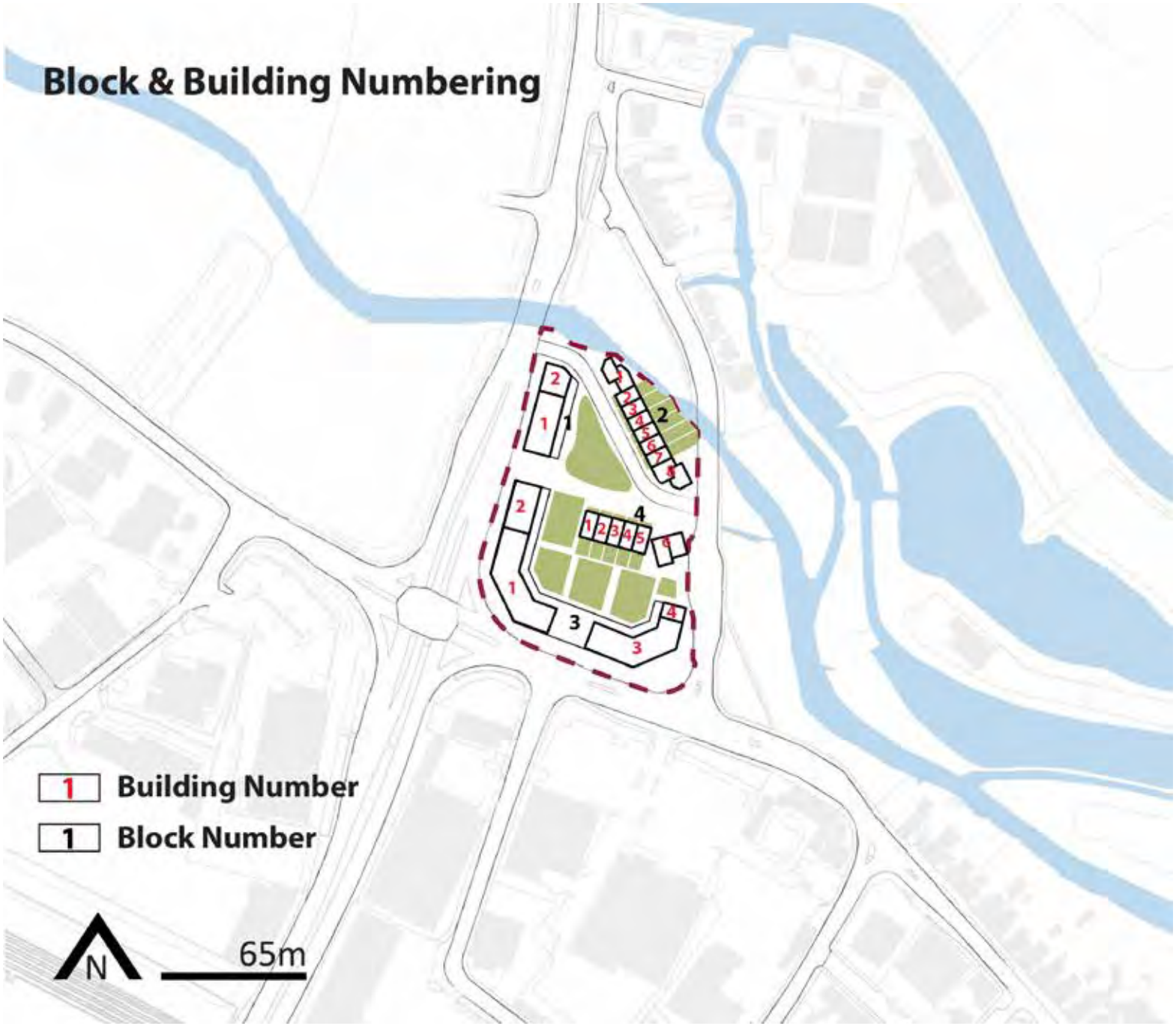
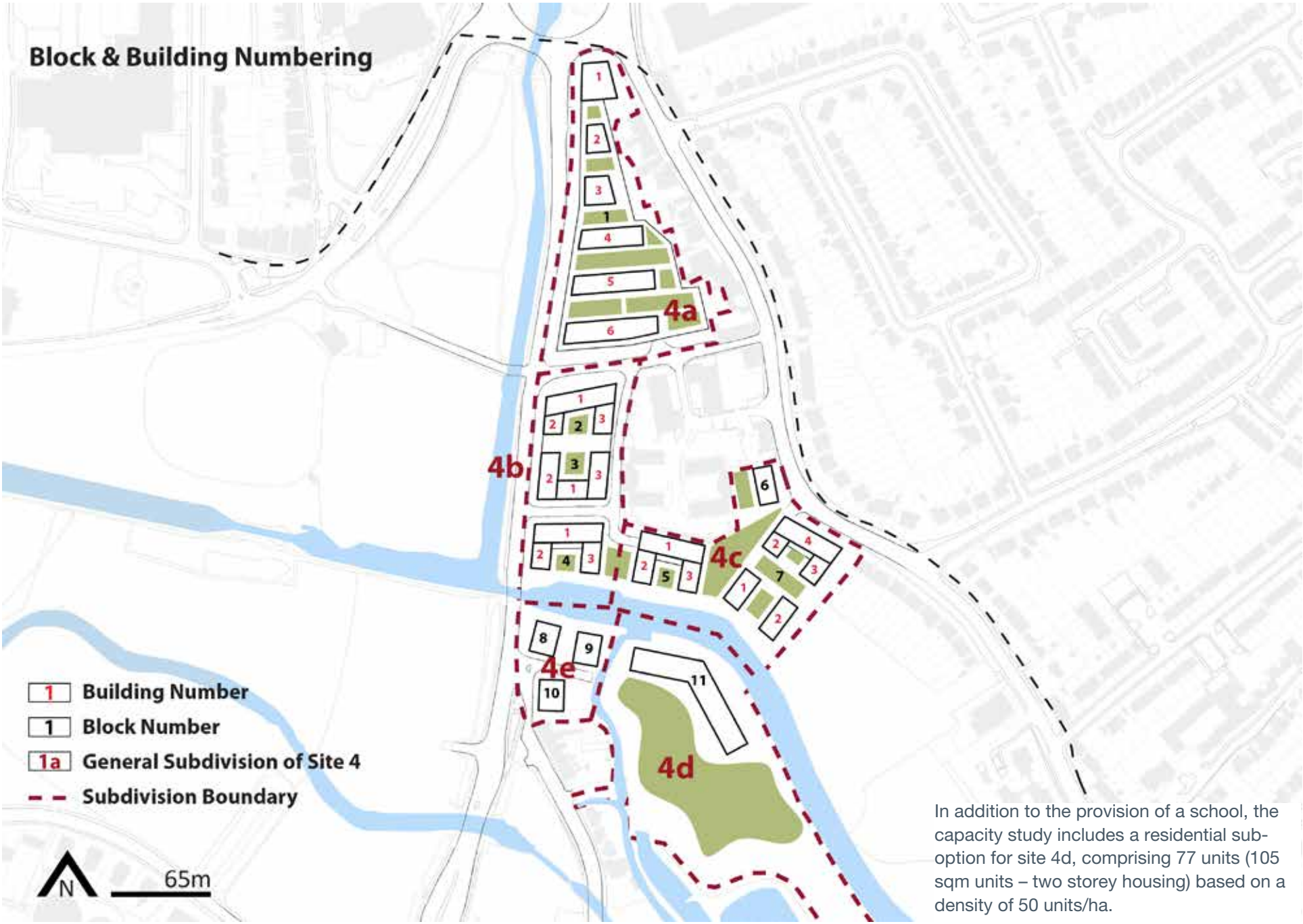
| | | | Residential | | | | Undercroft Car Park | | | | | Employment | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Footprint (sqm) | Levels | GEA (sqm) | UNITS (100 sqm/unit) | Footprint | Levels | GEA | Spaces | Parking Ratio (105 sqm/unit) | Footprint (sqm) | Levels | GEA (sqm) |
| Site 2 | 1 | 1 | 377 | 3 | 1,131 | | 502 | 1 | 502 | | | | | |
| | 2 | GF | 606 | 1 | 606 | | 910 | 1 | 910 | | | | | |
| | | 1 | 429 | 3 | 1,287 | | | | | | | | | |
| | | 2 | 449 | 3 | 1,347 | | | | | | | | | |
| | 3 | GF | 754 | 1 | 754 | | 1,130 | 1 | 1,130 | | | | | |
| | | 1 | 577 | 3 | 1,731 | | | | | | | | | |
| | | 2 | 566 | 3 | 1,698 | | | | | | | | | |
| | 4 | GF | 749 | 1 | 749 | | 1,123 | 1 | 1,123 | | | | | |
| | | 1 | 557 | 3 | 1,671 | | | | | | | | | |
| | | 2 | 547 | 3 | 1,641 | | | | | | | | | |
| | 5 | GF | 1,092 | 1 | 1,092 | | 1,638 | 1 | 1,638 | | | | | |
| | | 1 | 464 | 3 | 1,392 | | | | | | | | | |
| | | 2 | 480 | 3 | 1,440 | | | | | | | | | |
| | | 3 | 428 | 4 | 1,712 | | | | | | | | | |
| | 6 | 1 | 512 | 3 | 1,536 | | 512 | 1 | 512 | | | | | |
| | 7 | 1 | 512 | 3 | 1,536 | | 512 | 1 | 512 | | | | | |
| | 8 | GF | 506 | 1 | 506 | | 1,416 | 1 | 1,416 | | | | | |
| | | 1 | 358 | 4 | 1,432 | | | | | | | | | |
| | | 2 | 224 | 6 | 1,344 | | | | | | | | | |
| | | 3 | 120 | 5 | 600 | | | | | | | | | |
| | | 4 | 120 | 4 | 480 | | | | | | | | | |
| | | 5 | 210 | 5 | 1,050 | | | | | | | | | |
| | | 6 | 120 | 4 | 480 | | | | | | | | | |
| | 9 | 1 | 443 | 4 | 1,772 | | 581 | 1 | 581 | | | | | |
| | 10 | GF | 421 | 1 | 421 | | 781 | 1 | 781 | | | | | |
| | | 1 | 384 | 3 | 1,152 | | | | | | | | | |
| | | 2 | 286 | 4 | 1,144 | | | | | | | | | |
| | | 3 | 286 | 5 | 1,430 | | | | | | | | | |
| | 11 | GF | 858 | 1 | 858 | | 1,286 | 1 | 1,286 | | | | | |
| | | 1 | 499 | 3 | 1,497 | | | | | | | | | |
| | | 2 | 251 | 1 | 251 | | | | | | | | | |
| | | 3 | 275 | 1 | 275 | | | | | | | | | |
| | | 4 | 546 | 3 | 1,638 | | | | | | | | | |
| | 12 | GF | 770 | 1 | 770 | | 1,156 | 1 | 1,156 | | | | | |
| | | 1 | 468 | 4 | 1,872 | | | | | | | | | |
| | | 2 | 431 | 3 | 1,293 | | | | | | | | | |
| | 17 | 1 | - | | | | | | | | | 1,350 | 2 | 2,700 |
| | 18 | 1 | - | | | | | | | | | 630 | 2 | 1,260 |
| | **TOTAL** | | | | **41,588** | 396 | | | **11,547** | 412 | 1 | | | **3,960** |

| | | | |
|---|---|---|---|
| | **National Grid Site.** | **25,287** | **241** |
| | **Existing Houses Site** | **5,565** | **53** |


Block & Building Numbering
1 Building Number
1 Block Number
N
65m

| | | | Residential | | | | Undercroft Car Park | | | | | Employment / Retail | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Footprint (sqm) | Levels | GEA (sqm) | UNITS (105 sqm/unit) | Footprint | Levels | GEA | Spaces | Parking Ratio (105 sqm/unit) | Footprint (sqm) | Levels | GEA (sqm) |
| **Site 3** | 1 | 1 | 327 | 3 | 981 | | 622 | 1 | 622 | | | | | |
| | | 2 | 149 | 2 | 298 | | | | | | | | | |
| | 2 | 1 | 114 | 2 | 228 | | | | | | | | | |
| | | 2 | 60 | 2 | 120 | | | | | | | | | |
| | | 3 | 60 | 2 | 120 | | | | | | | | | |
| | | 4 | 60 | 2 | 120 | | | | | | | | | |
| | | 5 | 60 | 2 | 120 | | | | | | | | | |
| | | 6 | 60 | 2 | 120 | | | | | | | | | |
| | | 7 | 60 | 2 | 120 | | | | | | | | | |
| | | 8 | 141 | 2 | 282 | | | | | | | | | |
| | 3 | 1 | 619 | 5 | 3,095 | | 1,462 | 1 | 1,462 | | | 700 | 1 | 700 |
| | | 2 | 258 | 3 | 774 | | | | | | | | | |
| | | 3 | 529 | 3 | 1,587 | | | | | | | | | |
| | | 4 | 70 | 2 | 140 | | | | | | | | | |
| | 4 | 1 | 72 | 3 | 216 | | | | | | | | | |
| | | 2 | 72 | 3 | 216 | | | | | | | | | |
| | | 3 | 72 | 3 | 216 | | | | | | | | | |
| | | 4 | 72 | 3 | 216 | | | | | | | | | |
| | | 5 | 72 | 3 | 216 | | | | | | | | | |
| | | 6 | 145 | 3 | 435 | | | | | | | | | |
| | **TOTAL** | | | | **9,620** | 92 | | | **2,084** | 74 | 0.81 | | | **700** |




In addition to the provision of a school, the capacity study includes a residential sub-option for site 4d, comprising 77 units (105 sqm units – two storey housing) based on a density of 50 units/ha.

| | | | Residential | | | | Undercroft Car Park | | | | | Employment / School | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Footprint (sqm) | Levels | GEA (sqm) | UNITS (105 sqm/unit) | Footprint | Levels | GEA | Spaces | Parking Ratio (105 sqm/unit) | Footprint (sqm) | Levels | GEA (sqm) |
| Site 4 | 1 | 1 | 479 | 15 | 7,185 | | 4,462 | 1 | 4,462 | | | 4,000 | 1 | 4,000 |
| | | 2 | 233 | 6 | 1,398 | | | | | | | | | |
| | | 3 | 240 | 5 | 1,200 | | | | | | | | | |
| | | 4 | 489 | 4 | 1,956 | | | | | | | | | |
| | | 5 | 636 | 3 | 1,908 | | | | | | | | | |
| | | 6 | 756 | 3 | 2,268 | | | | | | | | | |
| | SUBTOTAL | | | | 15,915 | 152 | | | 4,462 | 159 | | | | |
| | 2 | 1 | 550 | 5 | 2,750 | | 2,606 | 1 | 2,606 | | | 500 | 1 | 500 |
| | | 2 | 155 | 4 | 620 | | | | | | | | | |
| | | 3 | 226 | 4 | 904 | | | | | | | | | |
| | 3 | 1 | 241 | 3 | 723 | | | | | | | | | |
| | | 2 | 362 | 4 | 1,448 | | | | | | | | | |
| | | 3 | 362 | 4 | 1,448 | | | | | | | | | |
| | 4 | 1 | 531 | 4 | 2,124 | | 1,055 | 1 | 1,055 | | | | | |
| | | 2 | 203 | 3 | 609 | | | | | | | | | |
| | | 3 | 240 | 2 | 480 | | | | | | | | | |
| | 5 | 1 | 505 | 4 | 2,020 | | 1,059 | 1 | 1,059 | | | | | |
| | | 2 | 249 | 2 | 498 | | | | | | | | | |
| | | 3 | 233 | 2 | 466 | | | | | | | | | |
| | SUBTOTAL | | | | 14,090 | 134 | | | 4,720 | 169 | | | | |
| | 6 | 1 | 288 | 4 | 1,152 | | | | | | | | | |
| | 7 | 1 | 291 | 3 | 873 | | 940 | 1 | 940 | | | | | |
| | | 2 | 315 | 2 | 630 | | | | | | | | | |
| | | 3 | 204 | 3 | 612 | | | | | | | | | |
| | | 4 | 509 | 4 | 2,036 | | | | | | | | | |
| | | 5 | 155 | 2 | 310 | | | | | | | | | |
| | SUBTOTAL | | | | 5,613 | 53 | | | 940 | 34 | | | | |
| | 8 | 1 | 320 | 4 | 1,280 | | | | | | | | | |
| | 9 | 1 | 320 | 3 | 960 | | 320 | 1 | 320 | | | | | |
| | 10 | 1 | 320 | 3 | 960 | | 320 | 1 | 320 | | | | | |
| | 11 | 1 | - | | | | | | | | | 1,477 | 2 | 2,954 |
| | SUBTOTAL | | | | 1,920 | 18 | | | 640 | 23 | | | | |
| | **TOTAL** | | | | **38,818** | **370** | | | **10,762** | **384** | **1** | | | **7,454** |

# 03 | Viability

# Property Market Review

The following section provides an overview of the key property market sectors which have helped to inform the Masterplan.

Information has been derived from a variety of sources including on-line databases, in-house research, the views of our GL Hearn's agency teams, as well as discussions with estate agents and commercial agents active in the Hemel Hempstead market and a review of previous work undertaken by and on behalf of Dacorum Borough Council.

## Residential Market Overview

The following section provides a residential market overview, which along with urban design and planning considerations, has helped to build an understanding of the appropriate form and development capacity of the main development opportunities subject site. The primary purpose of the overview is to ensure that the proposals reflect the local context but also meet likely market demand.

Before commenting on the local property market characteristic we set out an overview of the national and regional residential market trends.

The pre-2007 residential market was defined by a high identified need for new housing, constrained supply and forecasted continued growth in property prices. Development funding was more readily available from national and international lenders. In tandem with this, there was strong government policy support for urban living, leading to a development focus on apartment schemes.

From 2008 to 2012, despite significant measures by the government to support the economy such as quantitative easing, historically low interest rates and the part-nationalisation of major banks, following the economic and property market crash in 2008, the recovery was slow, fragile and faltering.

From 2010 to 2013 developers were still concentrating largely on housing rather than apartment development outside of London and affluent UK cities. There are a number of reasons for this. Many developers suffered losses from overly-optimistic flatted development proposals during the recession and this still influenced their thinking. Also there is a financial, and particularly a cash-flow influence on this. Housing schemes can be phased with units being brought forward in relatively small tranches to react to demand and sales. It is relatively easy to increase or decrease the speed of delivery to ensure that holding and finance costs are kept to a minimum.

The nature of flatted development is that it has to be delivered in quite sizeable blocks and if sales come forward slower than was anticipated this can have a strong impact on viability. Accordingly there remained reluctance for developers to sign up to large-scale flatted developments unless there was an unquestionably high level of demand or buoyant established market. We are starting to see this trend come back in areas surrounding central London whilst in central London nearly all new developments are flatted.

More recently and particularly over the past 24 months there has been a greater air of optimism returning to the residential sector with an increased willingness to explore apartment development again. This is especially the case amongst the larger national house builders in part driven by the continued pressure from central government to meet challenging housing targets.

A key trend worthy of note is the outward movement from the London market, which has gathered pace over the past 2 years. Many commentators have indicated that the inner London market appears to be overheated and affordability issues have increased. As a result the outer London Boroughs as well as commuter towns appear to represent good growth prospects relative to up front capital investment. With the ongoing investment in the town, Hemel Hempstead is well placed to capitalise on this trend assuming the correct range of housing typologies and quality of development can be provided.

The latest reports (March 2017) from Land Registry shows an annual increase in house prices of 7.67% per cent in England. The average price of a home in England and Wales has risen above the November 2007 market peak, according to the Land Registry. In Hertfordshire sales value increased by 9.92% with the average property price £407,422.

In terms of future growth, many of the main residential commentators have been revising their forecasts upwards on the back of a government housing growth agenda. A recent publication by Savills indicates a UK wide 5 year house price growth of 19.3%. For the South East region this has been estimated at 26.4% over the same period.

# Property Market Review

## Local Market Context / Comparables – Apartments

Below details a number of comparable transactions that have been the basis of formulating residential values for the Two Waters area. The following details a number of apartment transactions:-

» *55 Deaconsfield Road, Hemel Hempstead* – This 1 bedroom maisonette consists of 526 sq. ft. of space having being converted from a former semi-detached house into two flats. This property is located on the upper floor and achieved a price of £185,000 being sold in April 2015 equating to a purchase price of £352psf.

» *19 Sheepcote Road, Hemel Hempstead* – This 2 bedroom flat consisting of 749 sq. ft. of space was purchased for £189,995 in December 2014 equating to a purchase price of £254psf.

» *The Terrace, KD Tower, Hemel Hempstead* – this is located on Leighton Buzzard Road directly adjacent to the town centre's retail offer. A number of recent transactions have taken place including:

- one bedroom flat sold in January 2016 for £250,000 and comes with a large roof terrace
- one bedroom flat sold in December 2015 for £245,000. The flat totals 565 sq. ft. and therefore equates to a rate of £433 per sq. ft. The property has a well sized balcony and a car parking space
- 2 bed flat totals 791 sq. ft. and is on the market for £315,000 equating to £398psf. The flat is of a good specification inside and comes with two parking spaces and a balcony.

» *Heath Park House, Boxmoor, Hemel Hempstead* – This 1 bed flat is situated in a new build block in a relatively green area 0.7 miles from Hemel Hempstead mainline station. The property was sold in October 2015 for a price of £235,000 and totals 640 sq. ft. which equates to a rate of £367psf.

» *High Street, Old Town Hemel Hempstead* – This 2 bed flat is a newly completed period conversion situated in close proximity to the subject site. The flat totals 645 sq. ft. and was sold in October 2015 for £325,000 equating to £496psf. The flat is of a very high specification inside and comes with allocated parking.

» *Longman Court, Stationers Place, Asp*ley – This 3 bedroom flat is situated in Aspley Marina and totals 1,322 sq. ft. It sold for £370,000 in January 2016 equating to a value of £279 per sq. ft. The flat is oversized which has resulted in a low value per sq. ft. and we are of the opinion that this represents a ceiling price for a 3 bed flat.

» *Mill Street, Aspley, Hemel Hempstead* – This 3 bedroom duplex is situated in a purpose built block (approx. 1980s) of a reasonable to appearance. It totals 1,504 sq. ft. and is under offer for £335,000 which equates to a rate of £222 per sq.ft. It comes with allocated parking and a reasonable interior.

Windsor Court, located on Lawn Lane is another recent development which comprises predominately one and two bedroom apartments. The development is an office to residential conversion, which has been finished to a high specification. It is located in close proximity to Aspley mainline station that provides services to London Euston in 30 minutes thus making it more attractive to commuter workers than the proposed scheme at the subject site. The marketing agent has advised us of the following transactions:

| Unit | No. of bedrooms | Price achieved | Size (sq.ft.) | £psf |
|---|---|---|---|---|
| 1 | 1 bedroom | £215,000 | 459 | £468 psf |
| 2 | 2 bedrooms | £280,000 | 613 | £457 psf |
| 4 | 2 bedrooms | £280,000 | 678 | £413 psf |
| 5 | 2 bedrooms | £220,000 | 459 | £479 psf |
| 9 | 2 bedrooms | £235,000 | 505 | £465 psf |
| 12 | 2 bedrooms | £275,000 | 594 | £463 psf |
| 14 | 2 bedrooms | £235,000 | 503 | £467 psf |
| 16 | 2 bedrooms | £255,000 | 593 | £430 psf |

# Property Market Review

The apartments above are undersized and therefore have an unusually high price per sq. ft. for the area.

Aspley Marina - This area was developed in 2002 incorporating the development of a number of apartment blocks in a layout surrounding the marina. This development currently has a number of 2 hand properties on the market and a selection of which are detailed below;

- 2 bedroom apartment for sale with an asking price of £300,000 consisting of 913 sq. ft. of space equating to £329 psf
- 2 bedroom apartment for sale with an asking price of £300,000
- 2 bedroom apartment for sale with an asking price of £320,000

*Nash Mills Wharf, Hemel Hampstead* – A development by Crest Nicholson of one and two bedroom apartments in Hemel Hampstead ranging from between £232,000 to £315,000. The development is set by the banks of the Grand Union Canal in a very close proximity to Aspley Marina above. We would consider this a comparable development to the subject site however it does come with a waterfront location and good proximity to Aspley mainline station.

***Residential Pipeline***

There are proposals for significant new residential within the core town centre. The Council's new public sector service quarter is on to Combe Street and Marlowes has recently opened. We understand that this will be followed by the delivery of 207 new apartments in three blocks to the north and west of the civic building (including the site of the existing police station) by the Council's development partners Endurance Estates and RG Carter.

***Residential Conclusions***

Market conditions have improved significantly over the past 24 months and developers, on the back of strong financial performance last year, continue to be acquisitive for new opportunities. The Two Waters area given its location between the town centre and proximity to the station in our opinion will prove very attractive to the developer and occupier market.

A number of agents indicated that there is a lack of new stock coming to the market, which has resulted in demand outstripping supply. The characteristics of the site and the nature of the surrounding residential typologies indicate that the site would be better suited to an apartment led development with a number of houses to create an appropriate scheme balance.

In respect of sales values there are limited new build schemes in the immediate vicinity and therefore it is difficult to establish the sale value tone for the site. We would consider that the Two Waters area is capable of accommodating a number of new build blocks of apartments and a small number of houses.

It is our opinion that the site is of sufficient scale to create its own sub-market and to establish a new sale values tone of the area.

Parking will be an important component of any development. Given the location of the site, we would not expect there to be market interest to any significant degree in residential units without dedicated parking. The only exception to this would be in respect of Site 1 i.e. Hemel Station Gateway was a slightly reduced car parking provision could be considered given its position.

***Employment / Office Market Overview***

In general terms through the economic downturn investment yields have softened and rents have fallen. It is clear in the current market that delivery of employment use will be challenging but nevertheless is important in achieving a balanced and economically sustainable town centre.

Our research of the employment market suggests that there is limited scope for employment development within the masterplan area. Specifically we would expect to see very limited demand for office space which is more likely to be focussed on Maylands, with its excellent access to the M1, or directed to the existing office stock.

New office development is unlikely to be viable in this location but could be considered as part of mixed use development especially within Site 1 due were higher value residential use could help to cross subsidise office use.

# Property Market Review

***Retail and Leisure Overview***

Given the sites location directly south of Hemel Hempstead town centre, it likely that any retail and leisure use would be ancillary to residential use.

The town's retail core is focussed on the southern end of The Marlowes with the Riverside and Marlowes shopping centres. Capital & Regional's recent acquisitions of key retail assets including The Marlowes appear positive for the town centre with the company indicating an intention to enhance the offer through development and repositioning.

It is anticipated that the leisure offer in the town centre will be enhanced in the relatively new future with a new development proposed for the Market Square to be delivered by the Council's development partners Endurance Estate and RG Carter. This is expected to be anchored by a cinema of up to 9 screens alongside family restaurants.

Given the above although we do not envisage significant provision of retail and leisure use within the identified development opportunities but there will be opportunity for ancillary provision to serve the envisaged increase population through the new residential development.

In terms of station retail the current provision is extremely limited and unlikely to be capitalising on the full potential of the commuter trade. In terms of the improvement to the station's retail and leisure offer, the distance from the town centre may actually be seen as positive, as there are unlikely to be linked trips to the town centre which would cannibalise spend and trade from new occupiers. There is likely to be capacity for an improved newsagents as well as additional café units. In addition there may also be the potential for a small format or basket food store, although currently there are no active requirements.

The inclusion of a small food store would certainly improve the marketability of the other units but also improve the viability of retail development in this location. The basket food sector area of the retail market has remained relatively strong which is converse to the larger format store market. For small basket stores rents have held generally held and yields also remain strong given the covenant strength of the operators.

Typically rents for station retail are in the region of £15.00 to £17.50 per sq ft and a 7% yield. Food retail rental values would have a similar rental tone, however, the yield profile would be significantly better at circa 5.5%.

# Viability - Development Assumptions

The viability analysis is being undertaken in the absence of detailed scheme designs although initial layout and massing plans have been produced by BDP and as such a number of development assumptions have been adopted.

For ease of reference we have listed the main assumptions below:-

- We have adopted average private residential sales values ranging from £400 per ft². These prices have been informed by local market evidence. There may be opportunities on some parts of the more desirable sites to increase values but at this stage a blended average sales rate of £400 per ft² appears sensible.
- We have applied a 35% on-site affordable housing provision, with a blended average sales value of £250 per ft². Although these values are consistent with local market evidence a further assessment of affordable housing values will be required in dialogue with the Council's housing department as scheme progresses.
- Residential ground rent of £275 per annum for the private apartments has been assumed with a capitalisation rate of 5.5%.
- All non-residential floor space has been valued a £15 per ft² with a capitalisation rate of 8.0%.
- All build costs are assumed at the upper quartile of BCIS to reflect the quality of development envisaged i.e. apartments £150 per ft²
- An on-site infrastructure allowance, which includes a cost for services, internal roads and hard and soft landscaping of 7% of construction costs has been included.
- For undercroft car parking as cost of £7,500 per space has been adopted and £15,000 per space for the proposed multi-level car parking on Site 1.
- At this stage it is assumed that the cost of providing the proposed primarily school will be met through a combination of CIL monies and other third party funding.
- In respect of Site 4A it is assumed that the cost of reproviding the existing car showroom will be a scheme cost with no ongoing revenue attached.
- A 5% project contingency has been included.
- No specific allowances have been made for abnormal development costs such as ground remediation, service diversion or piled foundations with the exception of site 2 where an allowance of £5.0m
- A high level estimate of Local CIL has been applied as well as anticipated S106 costs towards essential site specific works as detailed in the infrastructure proposals list.
- In respect of Site 1 an indicative sum of £7.5m has been allowed toward improvements to the station and forecourt.
- We have allowed for professional and design fees of 10%.
- All usual letting and sales fees have been included
- A debt finance rate of 7.0% has been included with in the appraisal
- Our appraisal has been worked on the basis of a target residual profit. In assessing what constitutes an acceptable level of developer's return in the current market for the proposed scheme, as well as having regard to our own development experience on residential led development schemes in Hemel Hempstead we have adopted a developer's profit of 20% on gross development value for the private units, 6% for the affordable units and 15% on all non-residential floor space.

# Viability - Analysis

The viability analysis has been undertaken using the Argus Developer development appraisal package, which is commonly used by the development industry. The package is based on the residual appraisal method which is an industry-standard method used to assess the value of development land. The estimated value of the completed development is calculated and the cost of its construction, associated costs and fees, and an allowance for developer's profit are deducted. The remaining amount (the residual) is the value of the land.

## Viability Summary

The table below summarises the viability analysis undertaken for each of the options. It details the gross development value, total development costs and the residual land value of the completed scheme.

**Assuming 35% on-site Affordable Housing**

| Site | Gross Development Value | Total Development Costs | Residual Land Value |
|---|---|---|---|
| Site 1- Station Gateway | £92.7m | £104.9m | -£12.2m |
| Site 2 - Gas Holder Site | £128.6m | £125.5m | £3.1m |
| Site 3 - Vacant Land | £30.4m | £28.8m | £1.6m |
| Site 4a - Car Wash/Car Dealerships | £48.5m | £48.9m | -£0.4m |
| Site 4b - B&Q site | £34.6m | £31.9m | £2.7m |
| Site 4c - Travis Perkins | £26.2m | £23.6m | £2.6m |
| Site 4d - Residential Option | £27.41m | £23.69m | £3.72m |
| Site 4d - School Option | £9.76m | £8.93m | £0.83m |

***Table 1 -Assuming 35% on-site Affordable Housing***

In respect of Site 4d the Council in partnership with Hertfordshire County Council are currently considering options for providing new school places in line with the proposed new residential development in the area and Site 4d has been identified as a possible location. However, this is subject to further feasibility assessments of potential appropriate locations both within and/or in close proximity of the study area. Given the above an alternative residential option has been considered which comprises 77 houses. The outcome of the viability analysis for the residential led option is presented in the tables below.

**Assuming 35% on-site Affordable Housing (reflecting benchmark land value (where appropriate))**

Although the above table provides an indication of viability and the likely residual land value of the new development it is important that the value generated is considered alongside the value of the site in its existing use. Determining an appropriate benchmark land value is often the most important factor in determining viability. Put simply, if the value generated by the development does not produce a positive figure, there is no financial incentive to bring forward the development with all its associated risk.

A number of the sites within the masterplan area already comprise standing assets, which inevitably provides additional complexities in terms of delivery. The reasons for holding land will differ from one landowner to another and by the same token the attractiveness of bringing land forward for development will also vary.

Arriving at an appropriate Benchmark Land Value is not a straightforward exercise and this is acknowledged at 3.4.6 of the RICS Guidance Note which states that:

*"The assessment of Site Value in these circumstances is not straightforward, but it will be, by definition, at a level at which a landowner would be willing to sell which is recognised by the NPPF."*

In arriving at an appropriate Benchmark Land Value regard should be had to existing use value, alternative use value, market/transactional evidence (including the property itself if that has recently been subject to a disposal/acquisition), and all material considerations including planning policy.

With the above said the Council considers that the 'EUV plus a premium' approach best reflects the need

# Viability - Analysis

to ensure that development is sustainable and should form the primary basis for determining the benchmark land value in most circumstances. This should reflect the value of the landowners existing interest prior to the grant of consent and the need to provide a relevant incentive to the landowner to release the land for development fully taking into account site specific circumstances and the need to maximise policy compliance through the plan-led system.

The Existing Use Value plus approach is now widely accepted as the starting point in establishing benchmark land value by many Local Planning Authorities and in London is supported by the latest Mayoral SPD and by the London Assembly Planning Committee.

In terms of a landowner's premium the RICS Guidance Note: Financial Viability in Planning states that for viability assessments, it is an accepted methodology to include a landowner's premium when assessing Existing Use Values. The guidance also indicates that a premium will typically range between 10% and 40% but the appropriate premium will vary depending on individual site specific circumstances reflecting the security of the existing income etc.

To provide a high level view on the existing value of the sites considered, which can then be compared against the residual land value generated through the proposed development we have identified the sites which have existing and occupied properties and adopted their rateable value as a proxy of rental value. This rental value has then capitalised at an appropriate yield to arrive at an indicative capital value. We have then deducted purchaser's costs to provide an initial assessment of the possible existing use value of each site.

It should be stressed that this approach should only be considered indicative a further detailed assessment of the sites existing use value will need to be undertaken as projects evolve. At this stage no landowner's premium has been added. For Sites 3 and 4, which do not have standing properties a further detailed analysis of the sites benchmark land value will be required.

The table below mirrors that of 4.2 but also includes an indication of each sites existing use value (where appropriate) with the right column providing an indication of overall project viability.

As can be seen from Table 2 a number of the sites have given rise to viability concerns on the basis of a 35% affordable housing provision. However, there are steps which can be taken to reduce this including:

- Early discussions with the two third party land owners to see if terms can be agreed for acquisition.
- More detailed discussions with planning authority to seek to arrive at more robust assumptions on s106 contributions and to assess likely position on affordable housing.
- Investigation into availability of third party funding for major infrastructure items for example new school and major highways improvements.

| Site | Gross Development Value | Total Development Costs | Residual Land Value | Estimated Existing Use Value | Viable / Viability Concerns |
|---|---|---|---|---|---|
| Site 1 - Station Gateway | £92.7m | £104.9m | -£12.2m | £6.0m | ✗ |
| Site 2 - Gas Holder Site | £128.6m | £125.5m | £3.1m | N/A | ✓ |
| Site 3 - Vacant Land | £30.4m | £28.8m | £1.6m | N/A | ✓ |
| Site 4a - Car Wash/Car Dealerships | £48.5m | £48.9m | -£0.4m | £2.1m | ✓ |
| Site 4b - B&Q site | £34.6m | £31.9m | £2.7m | £6.5m | ✗ |
| Site 4c - Travis Perkins | £26.2m | £23.6m | £2.6m | £2.0m | ✓ |
| Site 4d - Residential Option | £27.41m | £23.69m | £3.72m | N/A | ✓ |
| Site 4d - School Option | £9.76m | £8.93m | £0.83m | £0.4m | ✓ |

***Table 2 Assuming 35% on-site Affordable Housing (reflecting Existing Use Value)***

## Sensitivity Analysis – 100% private scenario

Planning requirements for affordable housing can have a significant impact on potential land value. Dacorum BC's policy position sets a target for 35% affordable housing to be delivered on site. However, national policy does introduce a viability test for affordable housing – put simply a reduced level of provision should be agreed should it not be viable to deliver the full policy level. Accordingly for each of the sites under consideration, we have modelled a 100% private scheme (i.e. the maximum value that could be obtained from the site).

The sensitivity analysis indicates that with the exception of Site 1 and Site 4b all other sites appear viable assuming a 100% private accommodation.

The appraisal for Site 1 significant development costs associated with station and forecourt improvements as well the provision of a multi-storey car park. Discussions are ongoing with Network Rail regarding their future requirements and these discussions may also identify additional source of funding which would improve the current negative viability position.

In respect of Site 4B the residual land value of the proposed development does not compare favourably to the value of the site in its existing use. If the existing tenant decides to terminate their lease and the end of the existing term then the capital receipt generated from the proposed development may prove attractive to the existing landowner. Clearly further dialogue with the existing tenant of the site would provide further certainty around their future aspirations / operational requirements for the site and as such these discussions will provide further clarity around viability and delivery timescales.

| Site | Gross Development Value | Total Development Costs | Residual Land Value | Estimated Existing Use Value | Viable / Viability Concerns |
|---|---|---|---|---|---|
| Site 1 - Station Gateway | £105.9m | £113.8m | -£7.9m | £6.0m | ✘ |
| Site 2 - Gas Holder Site | £147.6m | £138.6m | £9.0m | N/A | ✓ |
| Site 3 - Vacant Land | £34.8m | £31.7m | £3.1m | N/A | ✓ |
| Site 4a - Car Wash/Car Dealerships | £55.8m | £53.7m | £2.1m | £2.1m | ✓ |
| Site 4b - B&Q site | £39.7m | £35.4m | £4.3m | £6.5m | ✘ |
| Site 4c - Travis Perkins | £30.1m | £26.2m | £3.9m | £2.0m | ✓ |
| Site 4d - Residential Option | £30.5m | £24.7m | £5.8m | N/A | ✓ |
| Site 4d - Southern Parcel | £11.2m | £9.9m | £1.3m | £0.4m | ✓ |

*Table 3 Sensitivity Analysis – 100% private scenario*

# 04 | Transport

# Development Testing

## Transport assessment methodology

Trip rates were obtained from the national TRICS database to give a benchmarked estimate for likely trip generation. Trip rates for all three land uses residential, employment and school were obtained using comparable sites in the database.

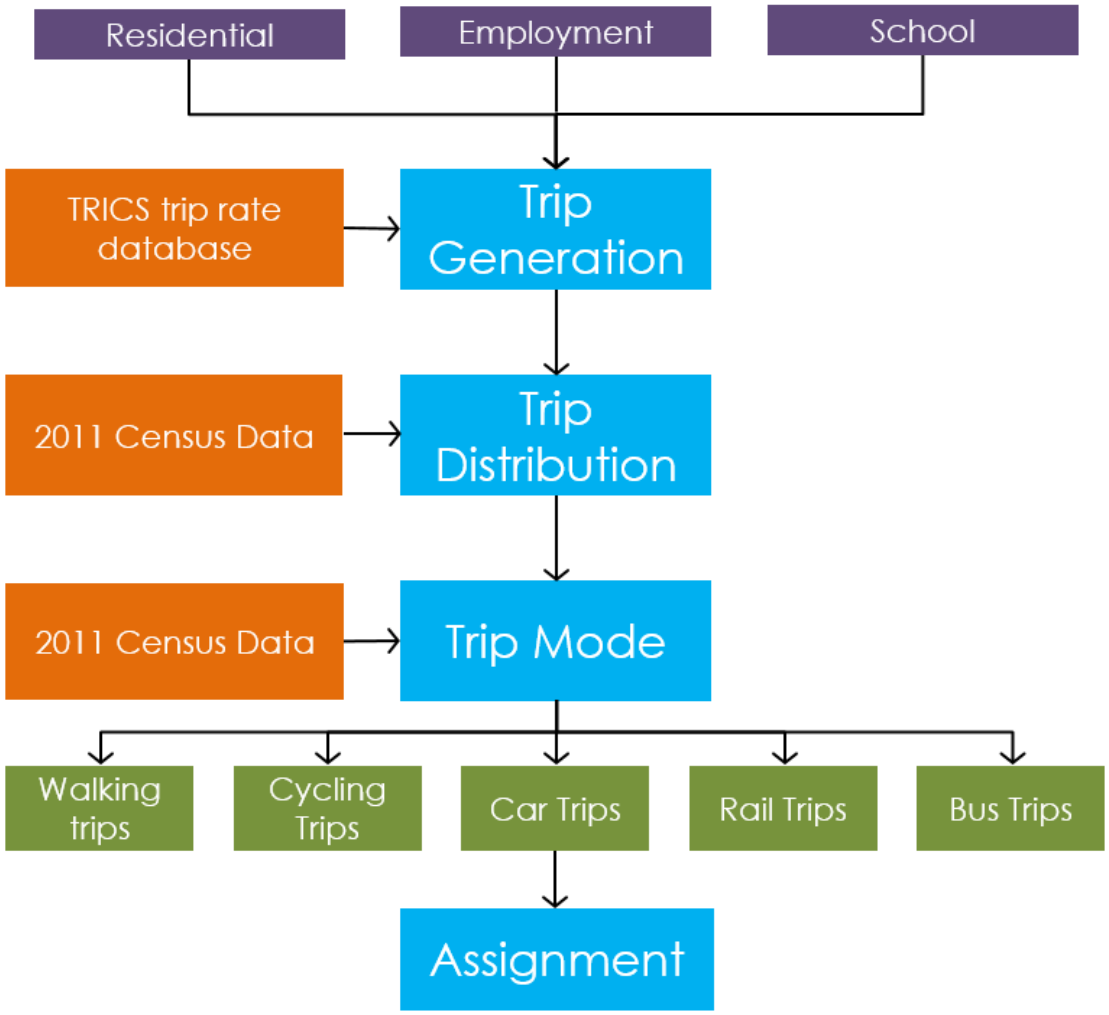
Trip distribution information was obtained from Census 2011 Journey to Work data for the Masterplan Area. The highest demand is within Dacorum Borough itself which was sub-divided into 9 areas.

Trip mode information was extracted from Census 2011 data for the Masterplan Area. This is deemed to be a reasonable proxy for peak hour travel behaviour, with professional judgement applied to remove instances of inconsistent/unreliable data.

Mode shares vary by distribution area reflecting the higher use of public transport to/from central London and higher car use more locally. The initial transport analysis contained no assumptions on future shifts towards sustainable travel modes nor did it reflect any lowering of parking standards.

The mode share and distribution assumptions were compared against those presented in the Hemel Hempstead Growth and Transport Strategy Evidence Pack which showed similar patterns of distribution and modal split.

The car trips were assigned to the network using a spreadsheet model with multiple routes assigned where necessary.



# Development Testing - Site 1

***Development assumptions***

» 276 residential units (plots 3-9)

» 7,868m2 (GEA) employment (plots 1+2)

» 1000 space MSCP (plot 10)

***Netting off***

» Existing 496 car parking spaces removed therefore analysis assumes extra 504 spaces – worst case

***Accesses***

» Two main accesses onto London Road

» Existing station car park layout/operation rationalised and relocated

» Internal walk/cycle connections through the site and east towards site 2


## Net additional PERSON trip generation

| | AM In | AM Out | PM In | PM Out | Daily In | Daily Out | |
|---|---|---|---|---|---|---|---|
| Resi. | 25 | 100 | 125 | 50 | 700 | 700 | 33% |
| Emp. | 100 | 15 | 25 | 125 | 850 | 800 | 39% |
| MSCP | 125 | 10 | 25 | 100 | 600 | 600 | 28% |
| TOTAL | **250** | **125** | **175** | **275** | **2150** | **2100** | |

## Trip distribution

| | Local | Dacorum | Herts | Other | London |
|---|---|---|---|---|---|
| TOTAL | 9% | 52% | 18% | 11% | 10% |

## Net additional trips based on EXISTING mode shares

| | AM In | AM Out | PM In | PM Out | Daily In | Daily Out | % |
|---|---|---|---|---|---|---|---|
| Walk | 15 | 15 | 15 | 25 | 175 | 175 | 9% |
| Cycle | <10 | <10 | <10 | <10 | 25 | 25 | 1% |
| Bus | <10 | <10 | <10 | <10 | 50 | 50 | 2% |
| Train | <10 | 15 | 15 | 10 | 125 | 125 | 5% |
| Car | 200 | 100 | 150 | 250 | 1800 | 1750 | 83% |
| TOTAL | **225** | **125** | **175** | **300** | **2175** | **2125** | |

# Development Testing - Site 2

***Development assumptions***

» 396 residential units (plots 1-12)

» 3,960m2 (GEA) employment (plots 17+18)

***Netting off***

» Existing retail, commercial and employment uses towards eastern end of the site (plots 13-16, 18-21) are excluded from the analysis

***Accesses***

» Three accesses onto London Road

» Internal walk/cycle connections through the site and ideally west to site 1


## Net additional PERSON trip generation

| | AM In | AM Out | PM In | PM Out | Daily In | Daily Out | |
|---|---|---|---|---|---|---|---|
| Resi. | 40 | 150 | 175 | 80 | 1000 | 1000 | 70% |
| Emp. | 50 | <10 | 10 | 70 | 425 | 400 | 30% |
| **TOTAL** | **90** | **150** | **185** | **150** | **1425** | **1400** | |

## Trip distribution

| | Local | Dacorum | Herts | Other | London |
|---|---|---|---|---|---|
| **TOTAL** | 40% | 16% | 20% | 10% | 14% |

## Net additional trips based on EXISTING mode shares

| | AM In | AM Out | PM In | PM Out | Daily In | Daily Out | % |
|---|---|---|---|---|---|---|---|
| Walk | 10 | 20 | 20 | 20 | 150 | 150 | 12% |
| Cycle | <10 | <10 | <10 | <10 | 20 | 20 | 1% |
| Bus | <10 | <10 | <10 | <10 | 40 | 40 | 3% |
| Train | <10 | 20 | 30 | 10 | 150 | 150 | 7% |
| Car | 60 | 125 | 125 | 100 | 1000 | 1000 | 77% |
| **TOTAL** | **90** | **150** | **185** | **150** | **1425** | **1400** | |

# Development Testing - Site 3

***Development assumptions***

» 92 residential units

» 700m2 (GEA) employment

***Netting off***

» No existing development assumed

***Accesses***

» Primary access onto London Road east of main crossroads

» Internal walk/cycle route and connection through to Two Waters Road

## Net additional PERSON trip generation

| | AM In | AM Out | PM In | PM Out | Daily In | Daily Out | |
|---|---|---|---|---|---|---|---|
| **Resi.** | <10 | 40 | 40 | 20 | 250 | 250 | 76% |
| **Emp.** | <10 | <10 | <10 | 10 | 80 | 70 | 24% |
| **TOTAL** | **<20** | **40** | **40** | **30** | **330** | **320** | |

## Trip distribution

| | Local | Dacorum | Herts | Other | London |
|---|---|---|---|---|---|
| **TOTAL** | 39% | 16% | 20% | 9% | 15% |

## Net additional trips based on EXISTING mode shares

| | AM In | AM Out | PM In | PM Out | Daily In | Daily Out | % |
|---|---|---|---|---|---|---|---|
| **Walk** | <10 | <10 | <10 | <10 | 30 | 30 | 12% |
| **Cycle** | <10 | <10 | <10 | <10 | <10 | <10 | 1% |
| **Bus** | <10 | <10 | <10 | <10 | <10 | <10 | 3% |
| **Train** | <10 | <10 | <10 | <10 | 40 | 40 | 8% |
| **Car** | 10 | 30 | 30 | 20 | 225 | 225 | 75% |
| **TOTAL** | **<20** | **40** | **40** | **30** | **330** | **320** | |

# Development Testing - Site 4 a/b/c

***Development assumptions***

» 339 residential units (plots 1-7)

» 4,500m2 (GEA) employment (plots 1+2)

***Netting off***

» All future employment removed as replacement of existing

***Accesses***

» Three main accesses onto Two Waters Road

» Two accesses from the east via Lawn Lane


## Net additional PERSON trip generation

| | AM In | AM Out | PM In | PM Out | Daily In | Daily Out | |
|---|---|---|---|---|---|---|---|
| Resi. | 30 | 125 | 150 | 70 | 900 | 900 | 100% |
| **TOTAL** | **30** | **125** | **150** | **70** | **900** | **900** | |

## Trip distribution

| | Local | Dacorum | Herts | Other | London |
|---|---|---|---|---|---|
| **TOTAL** | 36% | 15% | 22% | 8% | 19% |

## Net additional trips based on EXISTING mode shares

| | AM In | AM Out | PM In | PM Out | Daily In | Daily Out | % |
|---|---|---|---|---|---|---|---|
| Walk | <10 | 10 | 10 | <10 | 90 | 90 | 10% |
| Cycle | <10 | <10 | <10 | <10 | 10 | 10 | 1% |
| Bus | <10 | <10 | <10 | <10 | 30 | 30 | 3% |
| Train | <10 | 20 | 20 | 10 | 125 | 125 | 14% |
| Car | 20 | 100 | 100 | 50 | 625 | 625 | 71% |
| **TOTAL** | **30** | **125** | **150** | **70** | **900** | **900** | |

# Development Testing - Site 4d

***Development assumptions***

» 30 residential units (plots 8-10)

» 2 Form Entry (2FE) primary school – 7 years, 420 pupils

***Netting off***

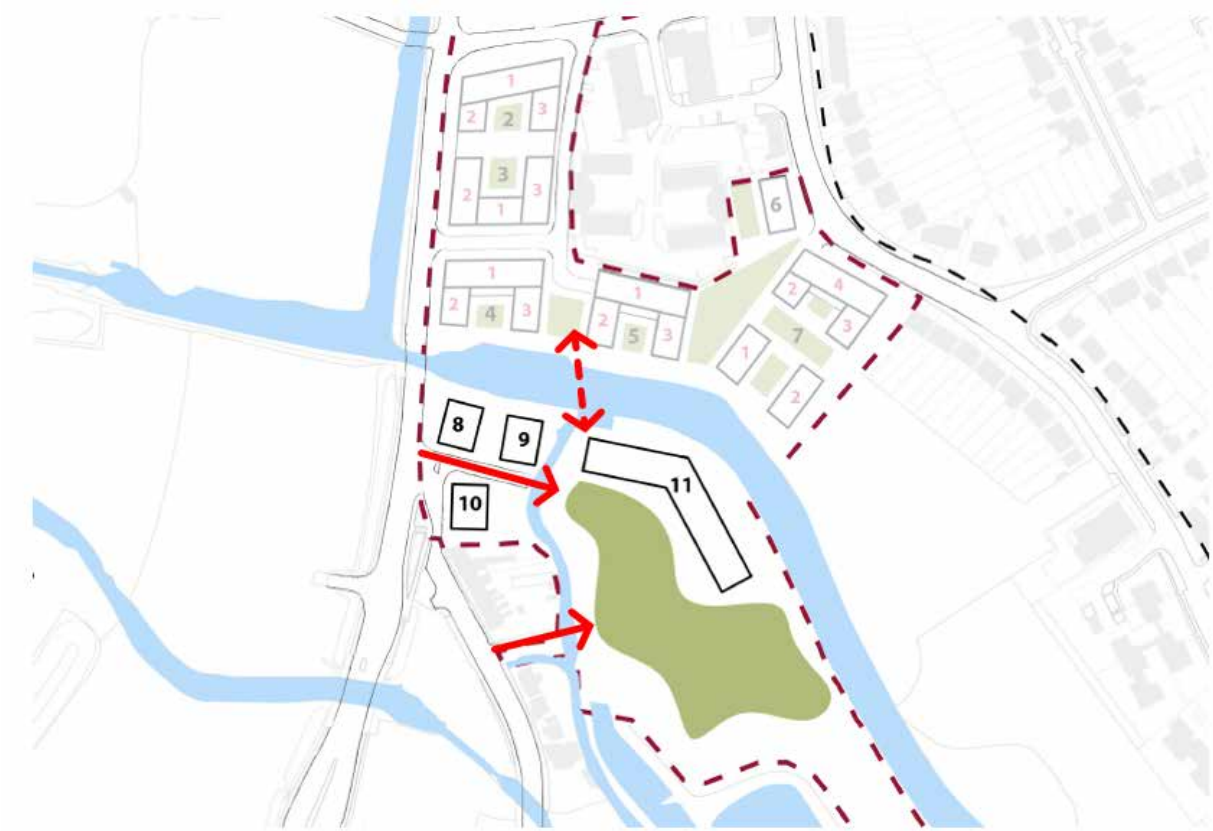
» Existing use on plot 11 not assumed to generate substantial existing trips

***Accesses***

» Residential access (plots 8-10) from Two Waters Road

» School vehicle access (staff, visitors and deliveries) from the south via the 'old' Two Waters Road that connects to London Road by Site 3

» Internal walk/cycle connections through the site and south to site 3 and north to site 4abc




## Net additional PERSON trip generation

| | AM In | AM Out | PM In | PM Out | Daily In | Daily Out | |
|---|---|---|---|---|---|---|---|
| **Resi.** | <10 | 10 | 10 | <10 | 80 | 80 | 7% |
| **School** | 500 | 180 | 30 | 30 | 1000 | 1000 | 93% |
| **TOTAL** | **500** | **190** | **40** | **30** | **1080** | **1080** | |

## Trip distribution

| | Local | Dacorum | Herts | Other | London |
|---|---|---|---|---|---|
| **TOTAL** | 95% | 1% | 2% | 1% | 1% |

## Net additional trips based on EXISTING mode shares

| | AM In | AM Out | PM In | PM Out | Daily In | Daily Out | % |
|---|---|---|---|---|---|---|---|
| **Walk** | 250 | 90 | 10 | 20 | 500 | 500 | 50% |
| **Cycle** | <10 | <10 | <10 | <10 | <10 | <10 | |
| **Bus** | <10 | <10 | <10 | <10 | <10 | <10 | |
| **Train** | <10 | <10 | <10 | <10 | 10 | 10 | |
| **Car** | 250 | 100 | 20 | 20 | 550 | 550 | 50% |
| **TOTAL** | **500** | **190** | **40** | **40** | **1080** | **1080** | |

# Development Testing - Site 4d

The residential-only option for site 4d generates substantially fewer daily trips (560 residential-only; 2160 including a school) which is attributable solely to the removal of the school. The demand profile is also spread more evenly throughout the day, in particular the removal of a pronounced morning peak due to school drop-off activity (50 residential-generated trips compared to 350 school and residential-generated trips).

### Net additional PERSON trip generation

| | AM In | AM Out | PM In | PM Out | Daily In | Daily Out |
|---|---|---|---|---|---|---|
| Resi. | 10 | 40 | 50 | 20 | 275 | 275 |

### Trip distribution

| | Local | Dacorum | Herts | Other | London |
|---|---|---|---|---|---|
| TOTAL | 36% | 15% | 22% | 8% | 19% |

### Net additional trips based on EXISTING mode shares

| | AM In | AM Out | PM In | PM Out | Daily In | Daily Out | % |
|---|---|---|---|---|---|---|---|
| Walk | <10 | <10 | <10 | <10 | 30 | 30 | 11% |
| Cycle | <10 | <10 | <10 | <10 | <10 | <10 | 1% |
| Bus | <10 | <10 | <10 | <10 | <10 | <20 | 3% |
| Train | <10 | <10 | <10 | <10 | 40 | 40 | 14% |
| Car | 10 | 30 | 30 | 15 | 200 | 200 | 71% |
| TOTAL | 10 | 40 | 50 | 20 | 280 | 280 | |

***Development assumptions***

» 30 residential units (plots 8-10)

» 77 residential units (plot 11)

***Netting off***

» Existing use on plot 11 not assumed to generate substantial existing trips

***Accesses***

» Access to all plots from Two Waters Road using existing restaurant access

» No additional walk/cycle connections to the south to site 3 or to the north to site 4abc

# Development Testing - All sites combined

### Net additional PERSON trip generation

| | AM In | AM Out | PM In | PM Out | Daily In | Daily Out | |
|---|---|---|---|---|---|---|---|
| **Resi.** | 100 | 450 | 500 | 225 | 3000 | 3000 | 50% |
| **Emp.** | 150 | 30 | 40 | 225 | 1300 | 1300 | 23% |
| **Sch.** | 500 | 175 | 30 | 30 | 1000 | 1000 | 17% |
| **MSCP** | 125 | 10 | 30 | 100 | 600 | 600 | 10% |
| **TOTAL** | **875** | **665** | **600** | **580** | **5900** | **5900** | |

### Trip distribution

| | Local | Dacorum | Herts | Other | London |
|---|---|---|---|---|---|
| **TOTAL** | 53% | 16% | 14% | 7% | 10% |

### Net additional trips based on EXISTING mode shares

| | AM In | AM Out | PM In | PM Out | Daily In | Daily Out | % |
|---|---|---|---|---|---|---|---|
| **Walk** | 250 | 150 | 70 | 70 | 950 | 950 | 16% |
| **Cycle** | <10 | <10 | <10 | <10 | 60 | 60 | 1% |
| **Bus** | <10 | 10 | 20 | 10 | 125 | 125 | 2% |
| **Train** | 20 | 60 | 70 | 40 | 450 | 450 | 8% |
| **Car** | 575 | 450 | 425 | 450 | 4250 | 4250 | 72% |
| **TOTAL** | **875** | **665** | **600** | **580** | **5950** | **5900** | |

| Site | % |
|---|---|
| 1 | 37% |
| 2 | 25% |
| 3 | 5% |
| 4 | 33% |

This initial transport analysis contained no assumptions on future shifts towards sustainable travel modes nor did it reflect any lowering of parking standards – as such it represents a worst case 'business as usual' approach.

The scale of travel demand is spread reasonably equally across sites 1, 2 and 4 with site 3 generating a small component of the overall demand. By land use, residential development accounts for half of generated trips with the school and MSCP generating a smaller, but still substantial, number of trips.

In terms of trip distributions, approximately a quarter of all trips are local – primarily due to the primary school. Nearly half of trips remain within the borough.

Trip totals by mode show the prevailing dominance of car use that leads to approximately 8,000 vehicle movements per day. This corresponds to approximately 800 vehicles movements in a peak hour (AM or PM).

# Development Testing - All sites combined (with Site 4d Residential-only option)

### Net additional PERSON trip generation

| | AM In | AM Out | PM In | PM Out | Daily In | Daily Out | |
|---|---|---|---|---|---|---|---|
| Resi. | 110 | 480 | 530 | 250 | 3150 | 3150 | 62% |
| Emp. | 150 | 30 | 40 | 225 | 1350 | 1300 | 25% |
| Sch. | 125 | 10 | 30 | 100 | 600 | 600 | 12% |
| MSCP | 380 | 520 | 600 | 570 | 5100 | 5050 | |
| TOTAL | 110 | 480 | 530 | 250 | 3150 | 3150 | 62% |

### Trip distribution

| | Local | Dacorum | Herts | Other | London |
|---|---|---|---|---|---|
| TOTAL | 43% | 19% | 18% | 8% | 13% |

### Net additional trips based on EXISTING mode shares

| | AM In | AM Out | PM In | PM Out | Daily In | Daily Out | % |
|---|---|---|---|---|---|---|---|
| Walk | 30 | 50 | 60 | 50 | 500 | 475 | 10% |
| Cycle | <10 | <10 | <10 | <10 | 50 | 50 | 1% |
| Bus | <10 | 10 | 15 | 10 | 125 | 125 | 2% |
| Train | 20 | 70 | 75 | 40 | 475 | 475 | 9% |
| Car | 320 | 370 | 440 | 450 | 3950 | 3900 | 77% |
| TOTAL | 380 | 520 | 600 | 570 | 5100 | 5050 | |

| Site | % | |
|---|---|---|
| 1 | 2170 | 51% |
| 2 | 1454 | 34% |
| 3 | 314 | 7% |
| 4 | 277 | 7% |

The switch from education to solely residential use in Site 4d sees the scale of travel demand drop substantially for site 4; sites 1 and 2 now account for the majority of development demand with sites 3 and 4 generating a much smaller component. By land use, residential development accounts for nearly two-thirds of generated trips, employment a quarter and the MSCP the remainder.

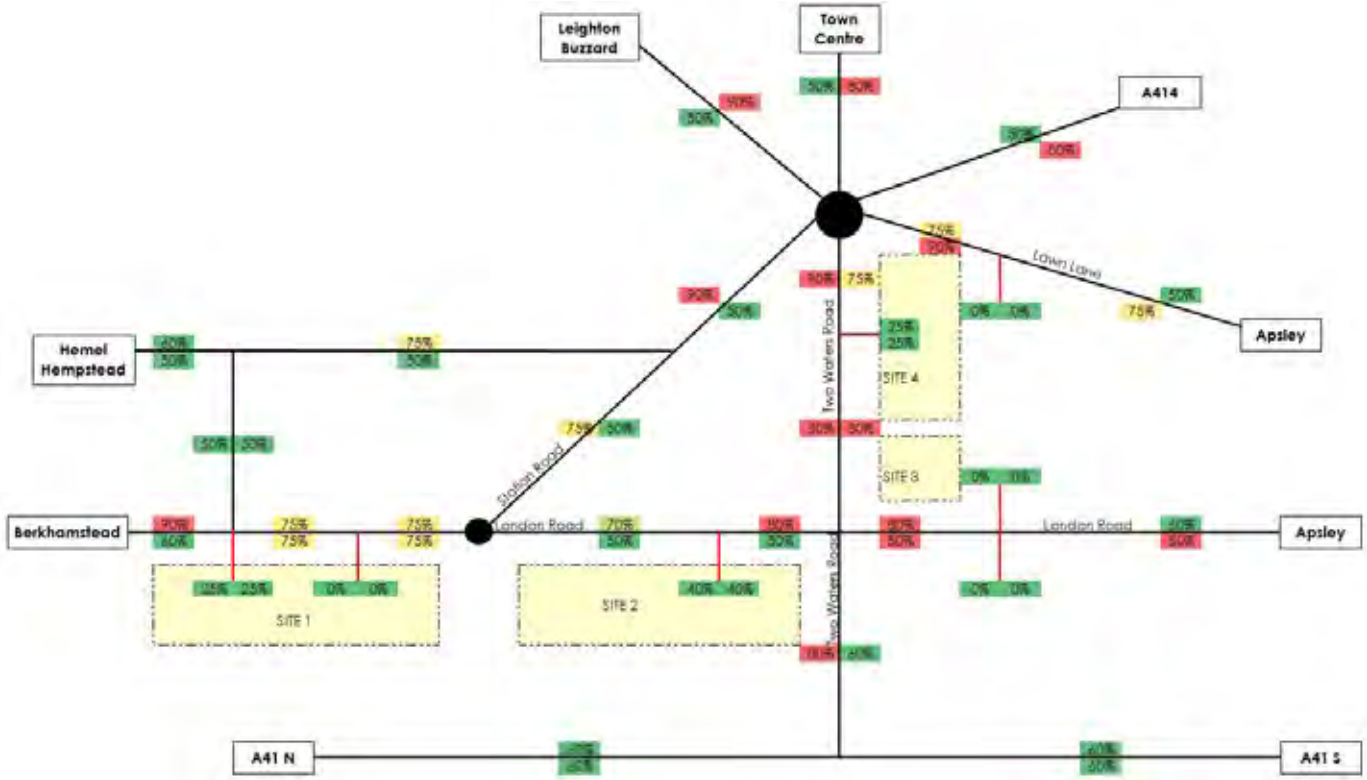
In terms of trip distributions, approximately two-thirds of trips remain within the borough although the number of 'local' trips is reduced due to the removal of the school.

Trip totals by mode show the prevailing dominance of car use that leads to approximately 8,000 vehicle movements per day. This corresponds to approximately 800 vehicles movements in a peak hour (AM or PM). This quantum of vehicle movement represents a very modest change compared to the original Site 4d option with education and residential uses. The key difference with the revised Site 4d option is the loss of the pronounced AM peak in car trips due to school drop-off activity.

# Transport and Movement - Indicative existing traffic volume/capacity (V/C) ratio (AM, 8-9am)

These are indicative volume/capacity (V/C) plots that express approximately how busy each link is. A link with a V/c ratio of >90% will be congested with queuing starting to become a problem. These V/C ratios are based on professional judgement and provide an indication of the operation of links and junctions rather than a comprehensive technical assessment.

They suggest that in the AM peak the Plough roundabout and Two Waters Road junction are operating at capacity particularly routes towards the Town Centre and London Road. However, the counter peak routes are less busy.

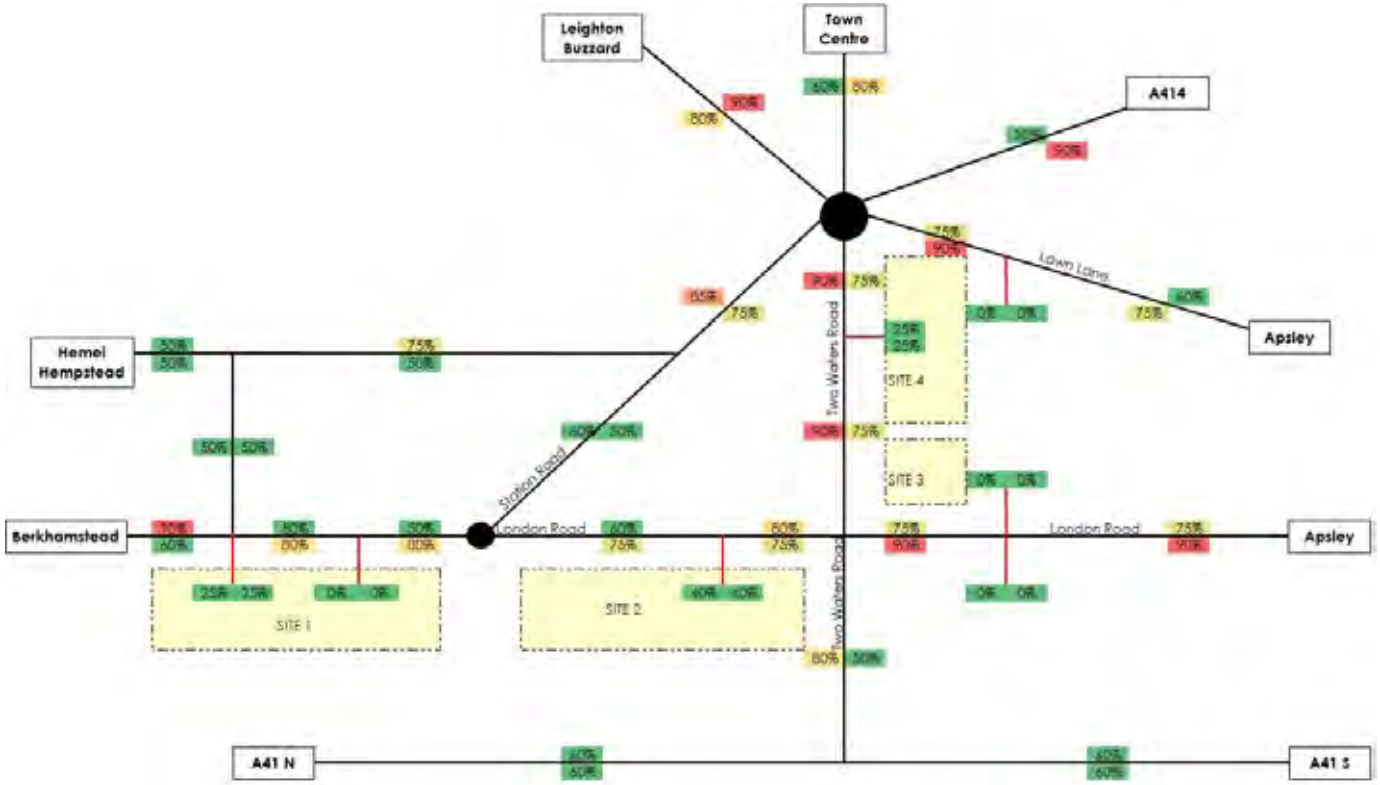


# Transport and Movement - Indicative existing traffic volume/capacity (V/C) ratio (PM, 5-6pm)

As with the AM peak these are the indicative volume/capacity plots for the PM peak hour.

They show a similar pattern to the AM peak in terms of the Plough Roundabout and Two Waters Road junction with junctions operating at capacity. However, there are fewer tidal patterns than those observed in the AM peak.

Overall the network is assessed to be operating close to operational capacity across most of the Masterplan Area.

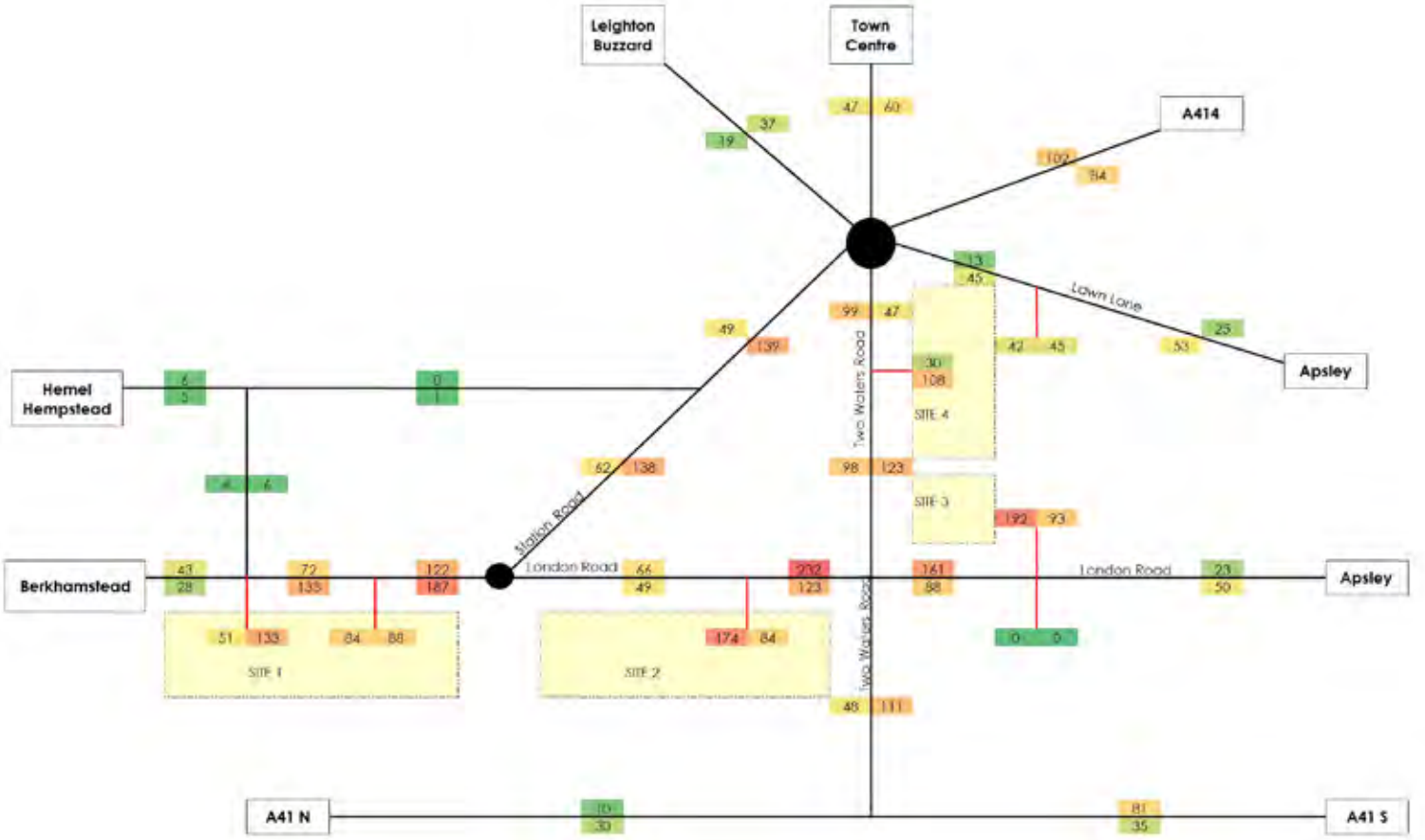


# Development Testing - Net additional development traffic flows (AM, 8-9am)

Additional AM peak hour vehicle flows in the masterplan area due to development sites 1-4 is shown below (where red is the largest increase; green the smallest).

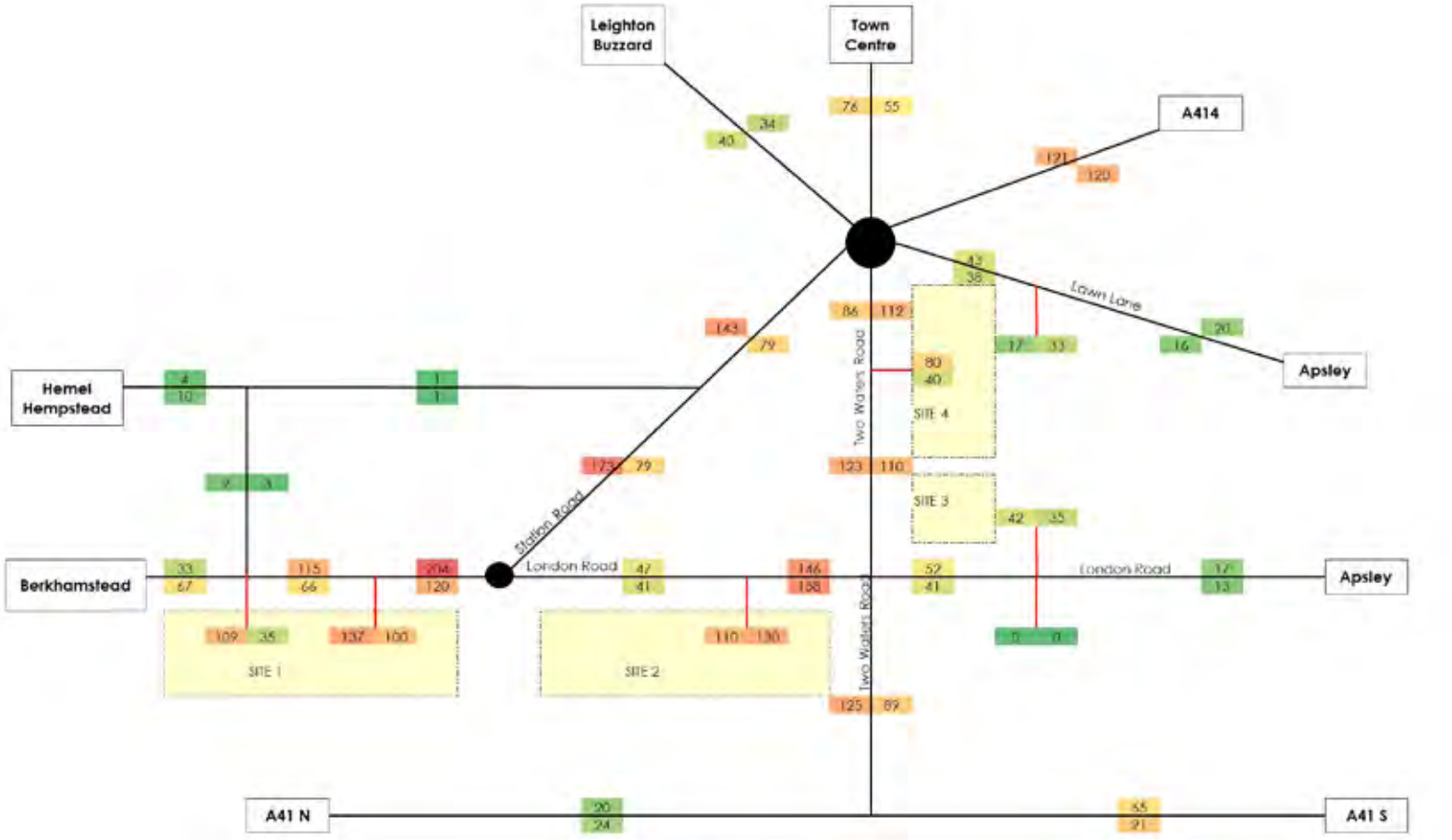
The station car park access in site 1 sees an increase of approximately 175 vehicles/hour with the Whiteleaf road junction in site 2 seeing a similar increase. These two site accesses feed onto London Road and then Two Waters Road which see maximum flow increases of approximately 200 vehicles/hour.

Further away from the Masterplan Area additional flow dissipate although there is a noticeable increase of approximately 150 vehicles/hour on the A414 towards the M1.



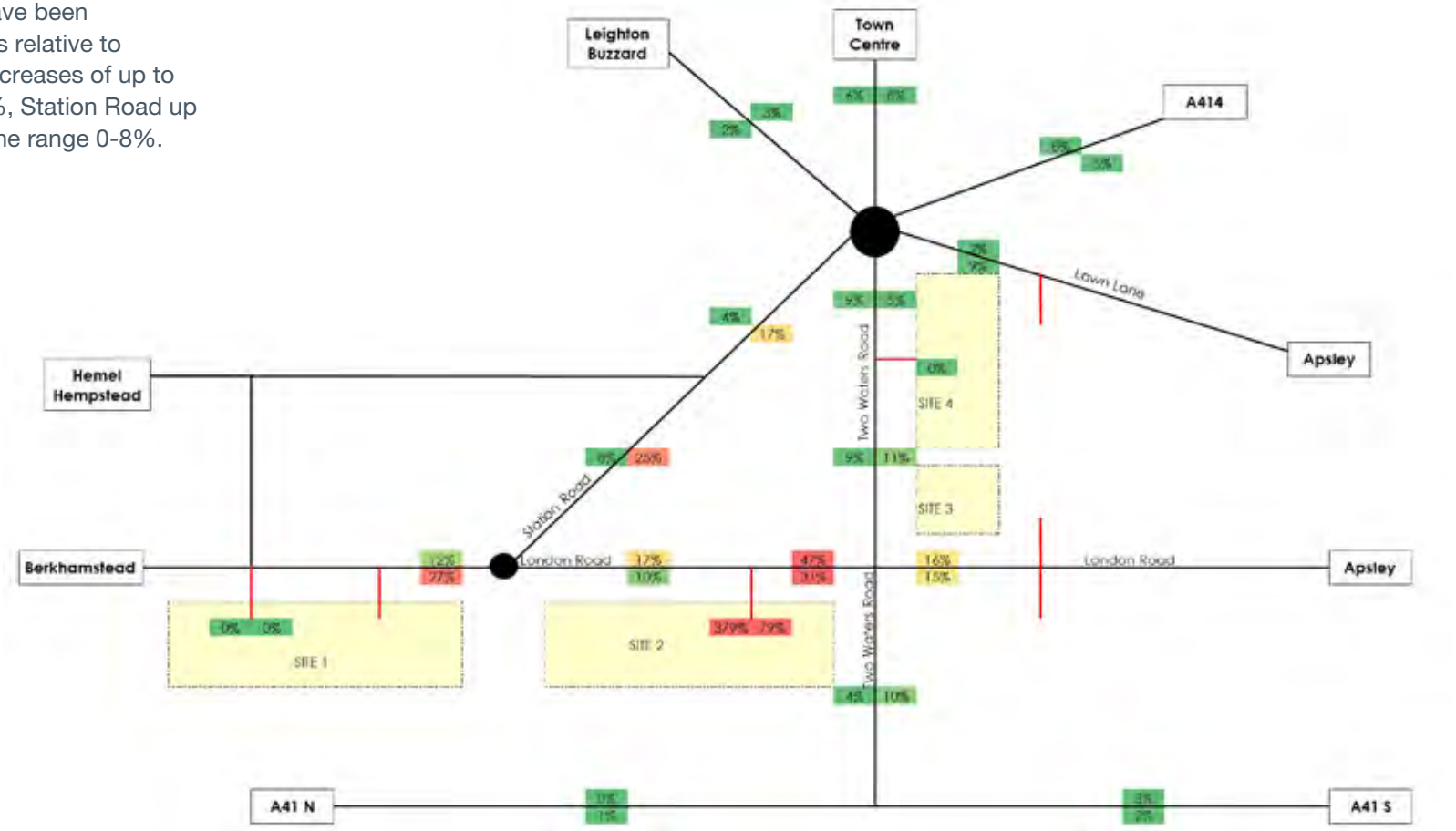
# Development Testing - Net additional development traffic flows (PM, 5-6pm)

Additional vehicle flows for the PM peak are typically greater than for the AM. The main accesses to sites 1 and 2 see increases of approximately 225 vehicles/hour whilst London Road and Two Waters Road have increases typically in the range of 200 to 300 vehicles/hour. Substantial additional vehicle flows are likely to be experienced at the Plough roundabout.



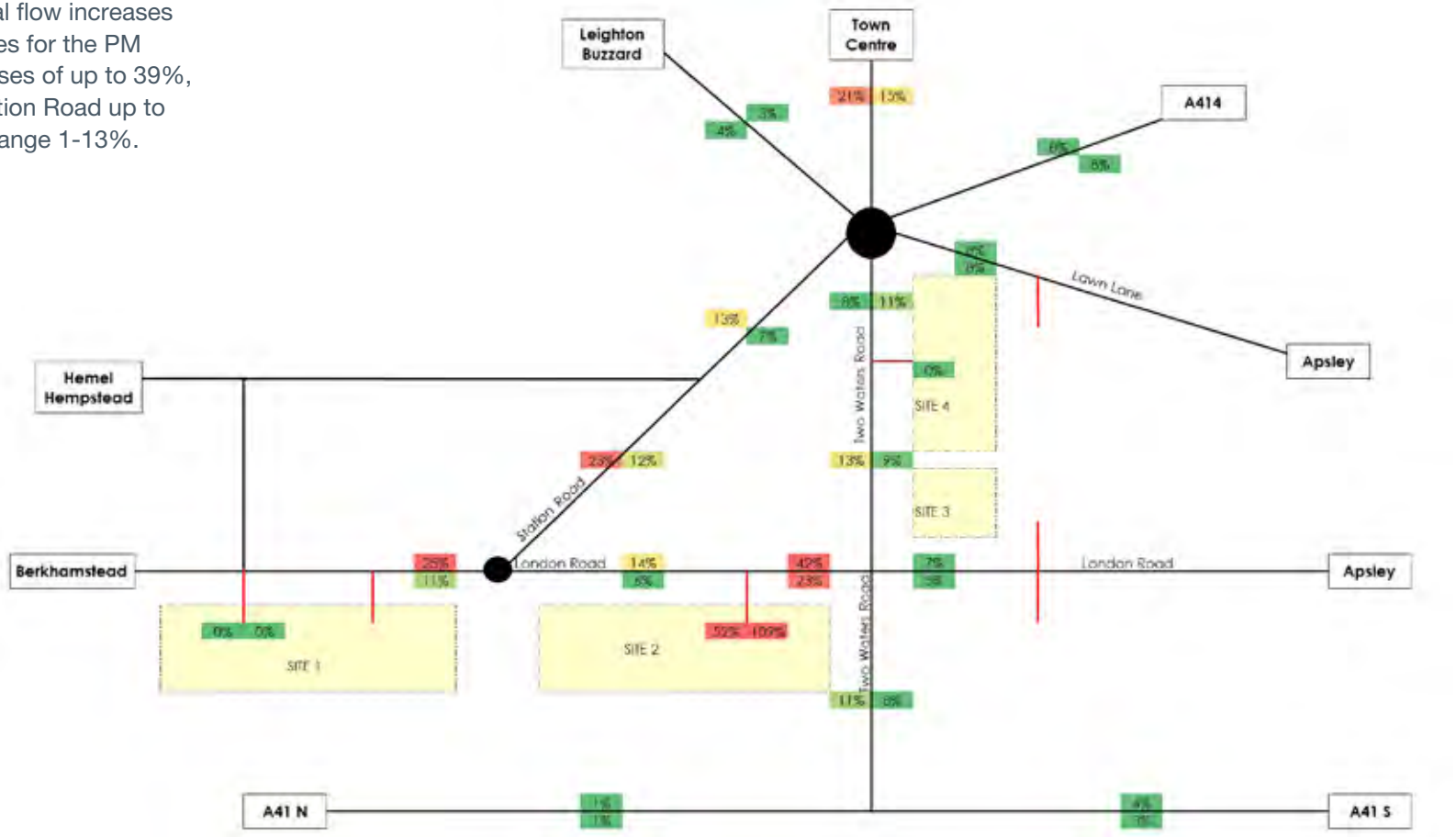
# Development Testing - % increase net additional development traffic flows (AM, 8-9am)

The net additional flow increases have been converted into percentage increases relative to existing flows. London Road has increases of up to 26%, Two Waters Road of up to 9%, Station Road up to 10% and other links typically in the range 0-8%.



# Development Testing - % increase net additional development traffic flows (PM, 5-6pm)

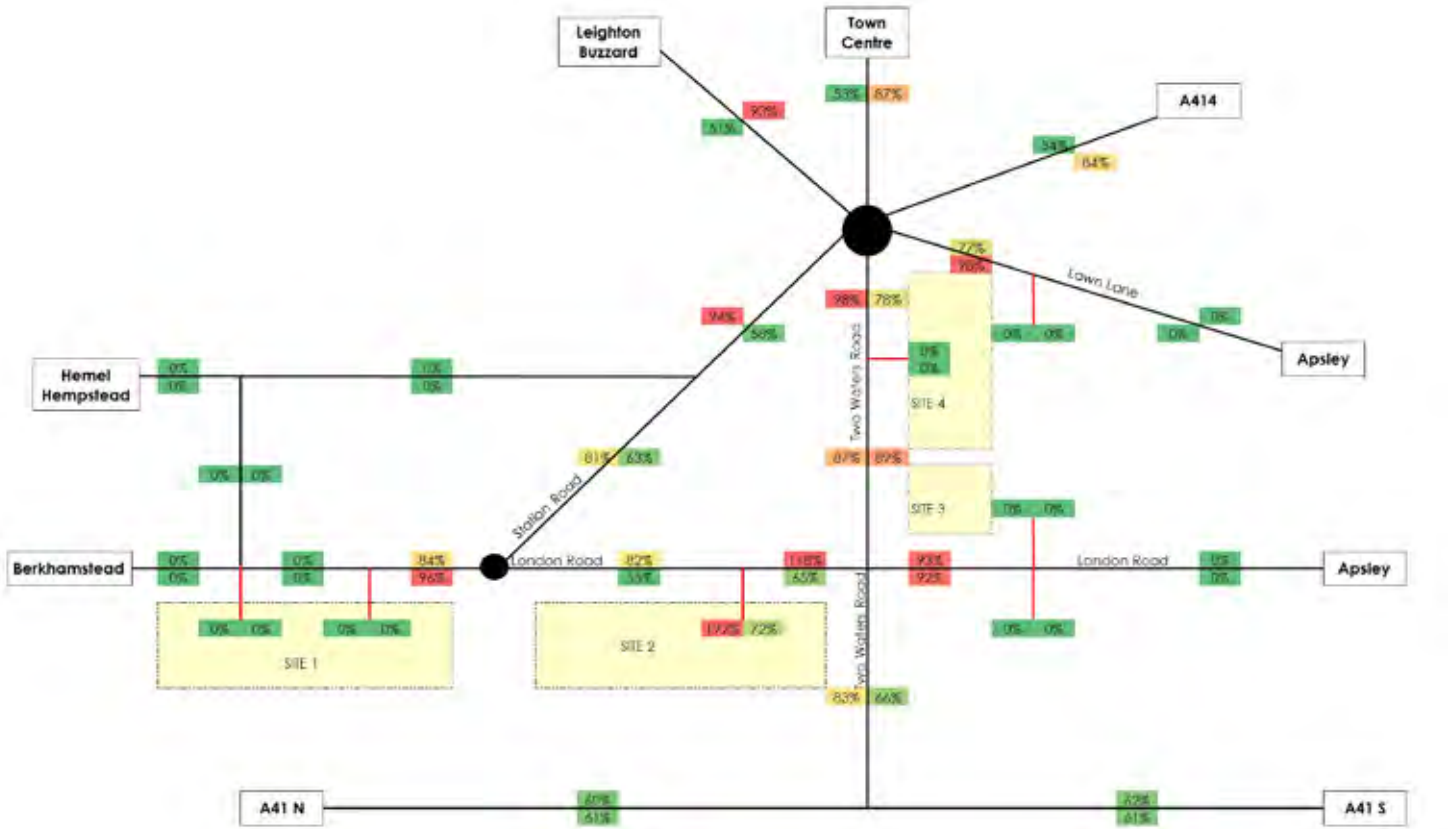
Similar to the AM peak, net additional flow increases have been converted into percentages for the PM peak hour. London Road has increases of up to 39%, Two Waters Road of up to 13%, Station Road up to 13% and other links typically in the range 1-13%.



# Development Testing - Indicative future traffic volume/capacity (V/C) ratio (AM, 8-9am)

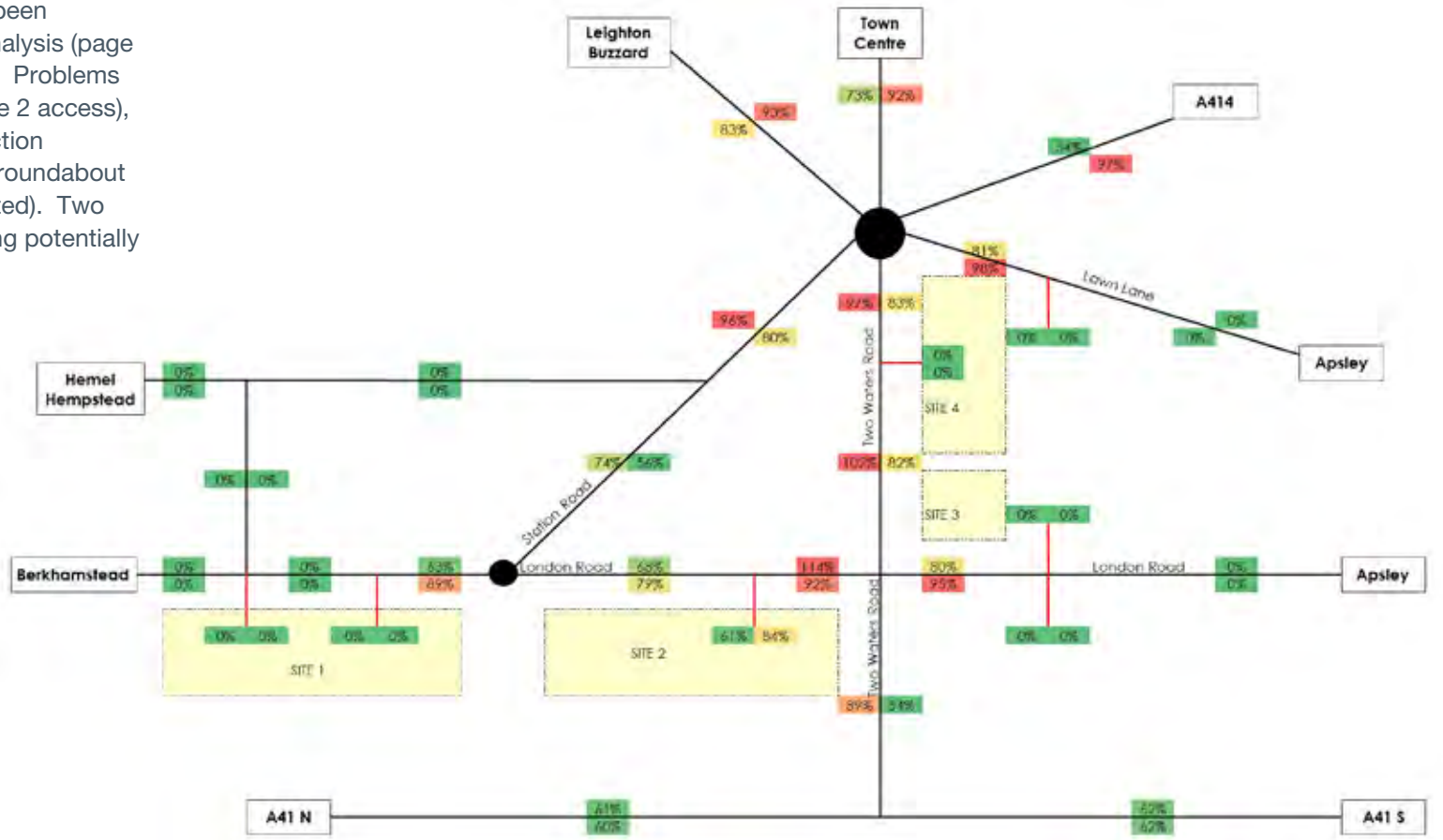
The net additional vehicle flows have been combined with the existing AM V/C analysis (page 9) to give indicative future V/C ratios. These V/C ratios are based on professional judgement and provide an indication of the operation of links and junctions rather than a comprehensive technical assessment.

A link with a V/c ratio of >90% will be congested with queuing starting to become a problem. Problems areas are: Whiteleaf Road junction (site 2 access), Two Waters Road / London Road junction (existing issues exacerbated), Plough roundabout approaches (existing issues exacerbated). Two Waters Road itself is potentially approaching capacity – in part due to local trip patterns due to the new school.



# Development Testing - Indicative future traffic volume/capacity (V/C) ratio (PM, 5-6pm)

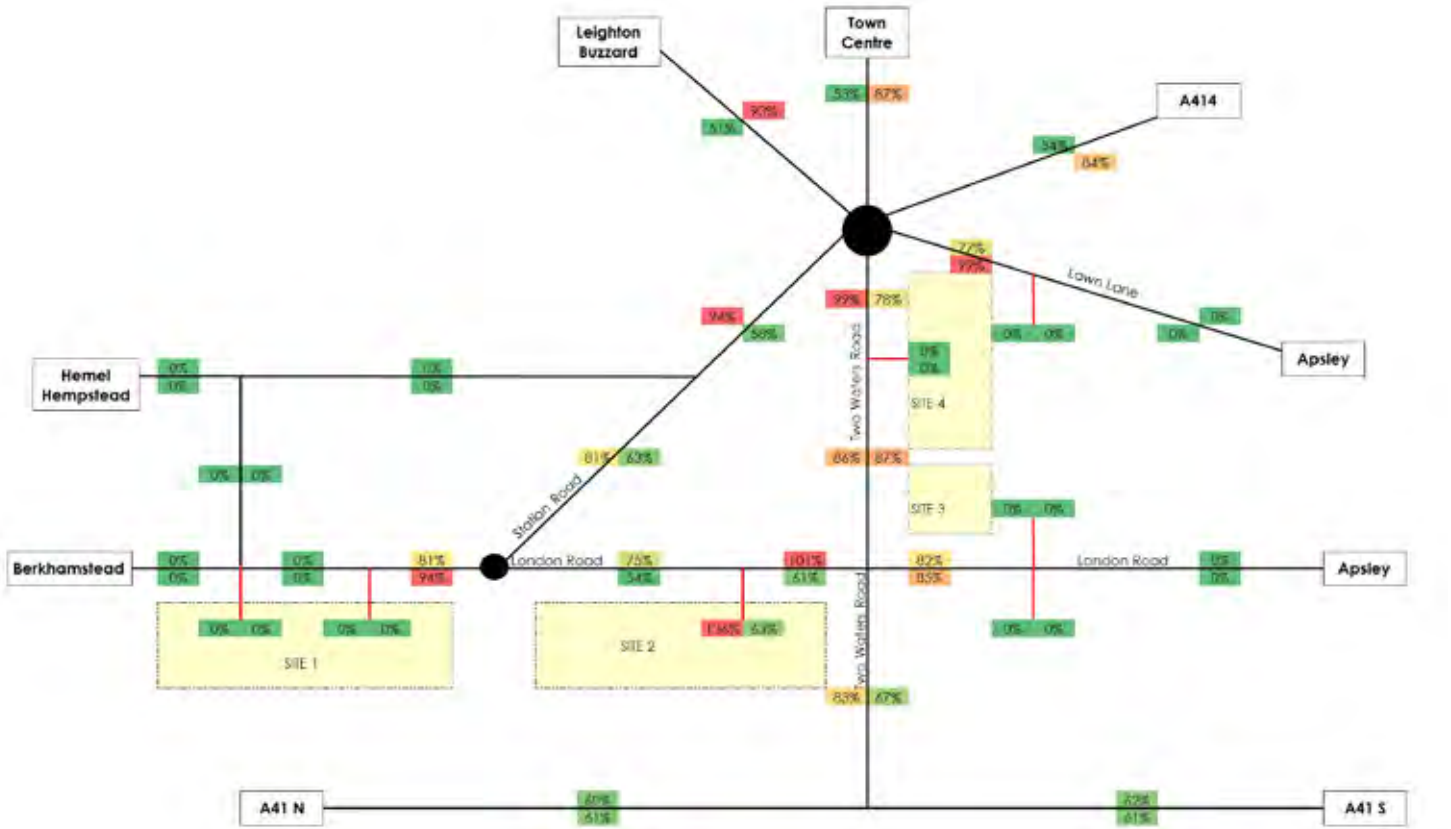
The net additional vehicle flows have been combined with the existing PM V/C analysis (page 10) to give indicative future V/C ratios. Problems areas are: Whiteleaf Road junction (site 2 access), Two Waters Road / London Road junction (existing issues exacerbated), Plough roundabout approaches (existing issues exacerbated). Two Waters Road itself is showing as having potentially reached capacity.



# Development testing (with Site 4d Residential-only option) - Indicative future traffic volume/capacity (V/C) ratio (AM, 8-9am)

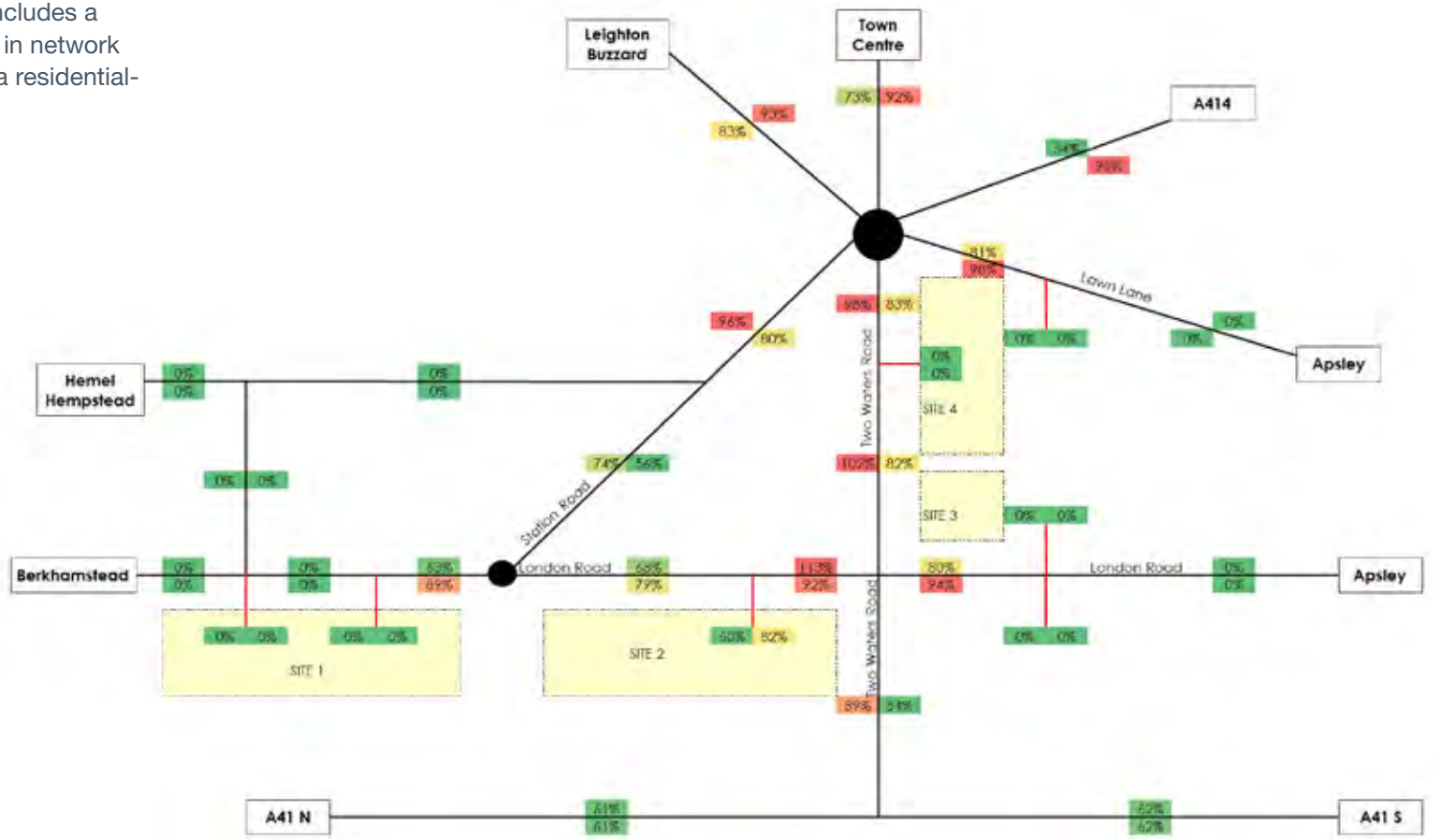
Based on a residential-only Site 4d, net additional vehicle flows have been combined with the existing AM V/C analysis (see baseline section) to give indicative future V/C ratios.

Compared to the Site 4d option that includes a school, there is slightly less network stress predicted in the AM peak on Two Waters Road, at the junction of Two Waters Road / London Road and on London Road. However, these and other locations (eg Plough Roundabout) are still operating close to, or at, capacity leading to congestion and delays.



# Development testing (with Site 4d Residential-only option) - Indicative future traffic volume/capacity (V/C) ratio (PM, 5-6pm)

Compared to the Site 4d option that includes a school, there is no substantial change in network stress predicted in the PM peak from a residential-only option.



# Development Testing - Other modes

## Walk

» The new primary school is the main generator of walking trips and it has been conservatively assumed that 50% of children arrive on foot

» Increased school arrivals by foot are potentially possible subject to high-quality routes being provided – particularly along or parallel to Two Waters Road and across the canal from the north

» Access to the station by foot is also important, especially from sites 1 and 2 which are both within easy walking distance. Providing a dedicated route through these developments to the station will help to minimise walking times

» Connections to the town centre are, in principle, direct but suffer from instances of poor/no lighting, poor surfacing, vehicle domination and poor quality public realm – there is clear potential for the masterplan to greatly improve conditions for walking

## Cycle

» Cycling levels are currently low which reflects the nature of connectivity between the Masterplan Area and the town centre, vehicle dominance discouraging cycling and key highway infrastructure (eg London Road / Two Waters Road) creating barriers to movements

» As with walking, improvement of existing non-highway routes as well as reducing the dominance of vehicles and public realm improvements would assist in creating conditions that encourage and accommodate increased levels of cycling

## Bus

» Using existing census data, low levels of demand are predicted

» Prevailing service frequencies would suggest that these worst case assumptions for low bus use can be accommodated

» Improved service frequencies combined with new bus stops on London Road (notably towards Site 2) and potentially new routes should be considered to provide the preconditions for encouraging and promoting increased bus use in the Masterplan Area

» In addition to more and improved services, bus priority measures could be explored to provide improved journey times and journey time reliability

## Rail

» As with bus, based on existing census data, low levels of demand are predicted

» Prevailing service frequencies would suggest that these worst case assumptions for low rail use can be accommodated, albeit with increases pressure on peak hour services to/from London

» Any future increases in rail use will be shaped by the residential and employment mix created in sites 1-4 and whether new residents/workers will be attracted to/from key destinations served by the rail line

# Development Testing - Mode shift summary

A sensitivity test has been undertaken to test the impact of a substantial shift in mode away from people using a private vehicle. To achieve this mode shift the table below outlines the areas where travel mode changes could be targeted based on trip destinations, likely travel behaviours and accessibility

It is important to recognise that there are certain modal shift target areas based on where people are travelling to, which is outlined in the table below. For example a benefit would be to minimise those people travelling to the rail station by car, reducing short distance car trips and increasing walk/cycle trips by improving the connections to the rail station.

| Site | AM car trips | PM car trips | All day car trips |
|---|---|---|---|
| 1 | 320 > 275 | 400 > 340 | 3500 > 3000 |
| 2 | 180 > 150 | 240 > 200 | 2100 > 1800 |
| 3 | 40 > 30 | 50 > 40 | 450 > 400 |
| 4 | 120 > 100 | 170 > 150 | 1400 > 1200 |
| 4 School | 140 > 120 | 10 > 10 | 400 > 340 |

***Impact of vehicle trips with mode shift***

The table to the left shows the impact of implementing an achievable 10% shift away from private vehicles on the number of car trips produced by the proposed development.

This shows that even with this very substantial shift the number of vehicle trips is still high and would still result in detrimental impacts on the local highway network if unmitigated.

Therefore while it is important to focus on travel mode shift in order to help lessen the impacts on the local highway network, these effects cannot be ignored and need to be very actively mitigated as part of Masterplan action.

| Area | % distribution | Promoted Mode | Notes |
|---|---|---|---|
| Local | 23% | Walk, cycle | Reduction in short distance car use<br>Strong walk/cycle connections<br>*Large number of school trips – strong school TP* |
| Dacorum | 45% | Cycle, PT | Encourage non-car use through cycle connectivity improvements and public transport enhancements |
| Herts | 14% | *[PT]* | *Targeted mode shift for key destinations (eg Watford)* |
| Other | 8% | *[PT]* | |
| London | 10% | *[Train]* | *Strong walk/cycle connections to station*<br>*Enhanced bus services to station* |

***Potential mode shift target areas***

# Key Proposals - Transport proposals overview

These are the overarching transport proposals that underpin the vision and objectives in the Masterplan Area while seeking to address other wider strategic challenges.

## Sustainable Transport Network

Future developments should provide localised improvements to the highway network and reduce the use of single occupancy vehicles through encouraging car sharing and the use of public transport, cycling and walking.

## Public Transport

Improve public transport, including increased service frequencies between the station, the study area, the town centre and employment areas such as the Maylands.

## Pedestrian and Cycle Environment

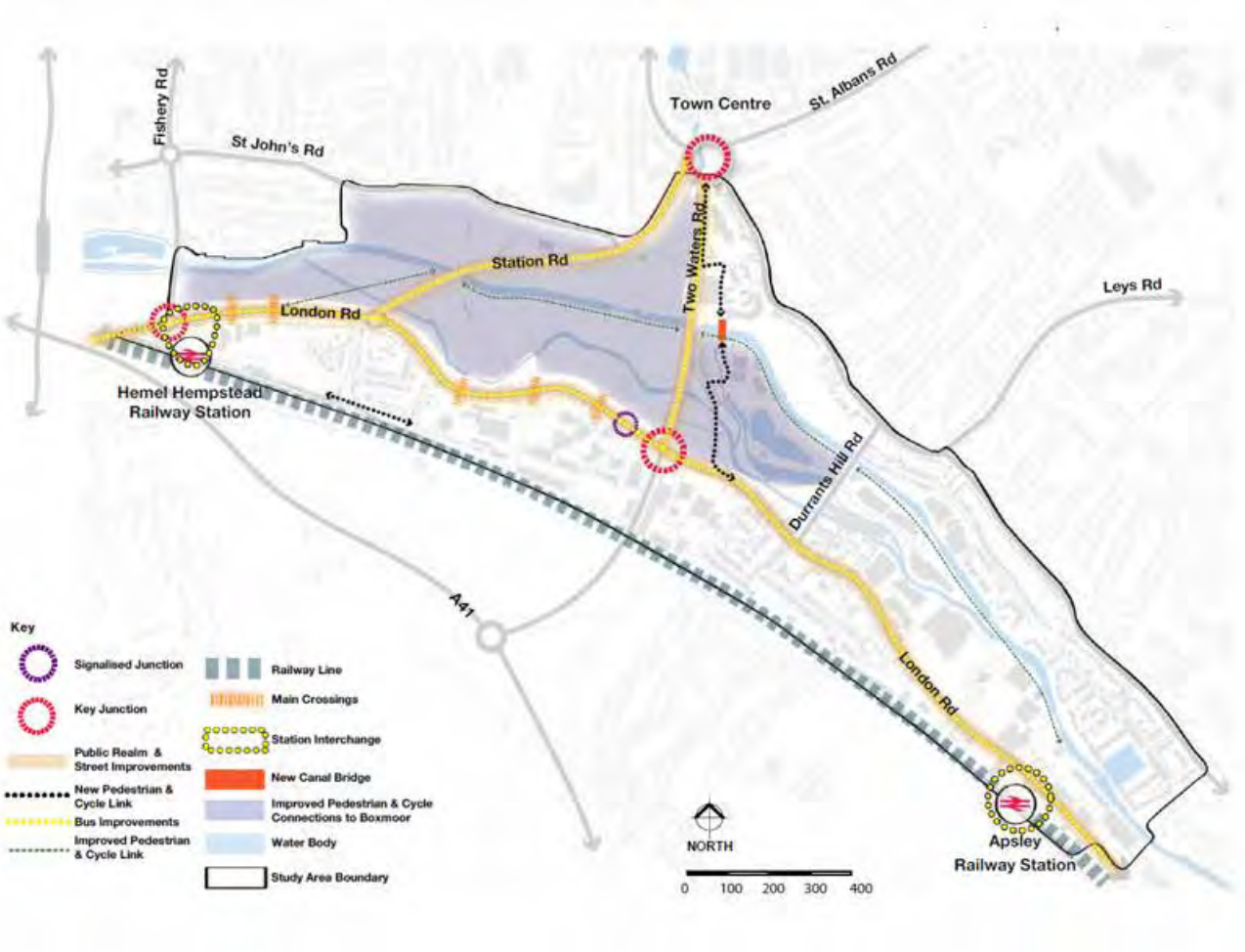
Improve pedestrian and cycle conditions across the Masterplan Area through dedicated route improvements including traffic calming measures, cycling infrastructure and street planting. This should include improvements to canal and river tow paths. Additionally, there may be an opportunity to create a new pedestrian/cycle link from Apsley to the Town Centre utilising developments opportunities in the Masterplan Area.

## Parking

Car parking demand should be minimised wherever possible with the sharing of spaces between different land uses at different times of the day and week and through reduced parking standards, particularly close to areas with good public transport accessibility.

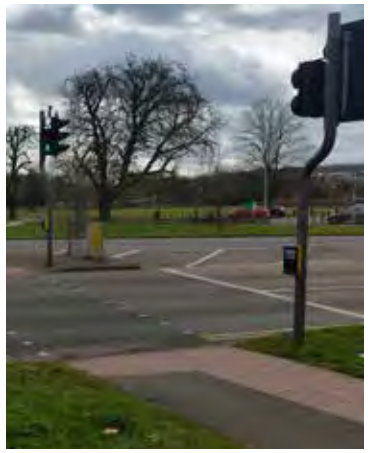
## Travel Plan

Individual developments will be supported by a travel plan to encourage sustainable travel such as public transport, cycling, walking and car sharing.




Watford


LOOK RIGHT

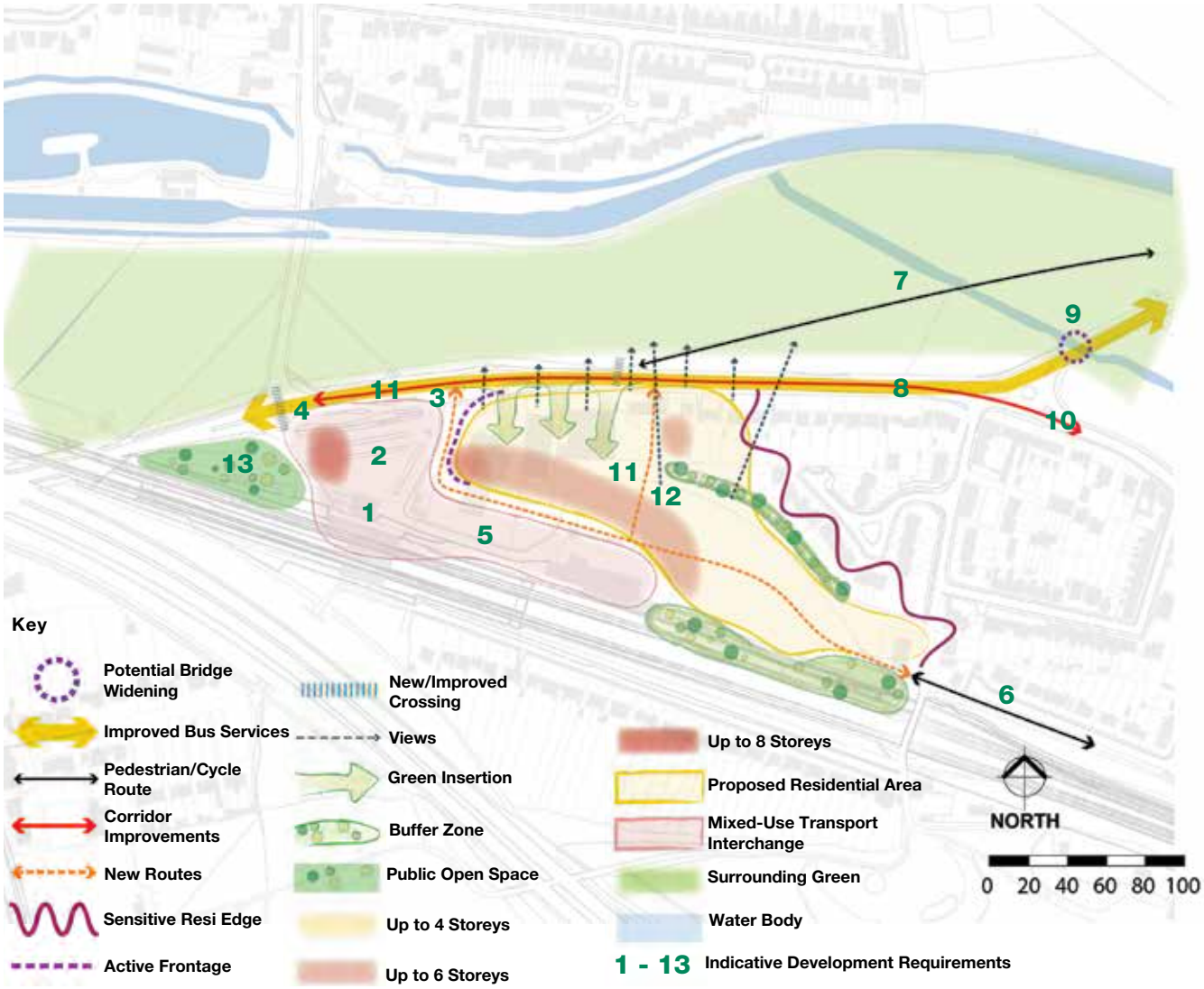



STEAM
FAIR
15-17 JULY

# Key Proposals - Site 1

## Development Requirements

1. Station Improvements.
2. Station forecourt and bus interchange.
3. New station access.
4. Reworked existing station access.
5. Consolidated multi-storey car park.
6. Walk/Cycle link to Site 2.
7. Town Centre walk/cycle route.
8. Improved bus services (to Town Centre/ other key destinations eg Maylands) and corridor future proofing.
9. Potential bfidge widening.
10. London Road corridor improvements (public realm and pedestsrian corssings).
11. Controlled parking zone.
12. Lower parking standards.
13. A public open space on the Roman archaelogy site.



# Key Proposals - Site 1

## 1 Station improvements

» Station building and facility improvements to be delivered in partnership with Network Rail and new franchisee

## 2 Station forecourt and bus interchange

» Comprehensive public realm improvement scheme

» Redesigning the station forecourt to include a formal bus interchange to provide connections to the centre of Hemel Hempstead and other key destinations

» Improve pick-up/drop-off facilities

» Improve way-finding and address conflicts between pedestrians, cyclists and vehicles

## 3 New station access

» Ensure the junction for accessing the station, multi-storey car park and site 1 is capable of accommodating future demand and provides for pedestrians and cyclists

» Ensure sufficient signage and road markings are in place to aide way-finding to the station, car park, bus interchange and also Site 1

## 4 Reworked existing station access

» Improve the existing station access, in order to improve safety, visibility and signage

## 5 Consolidated multi-storey car park

» Minimise the footprint required for the station car park by building a multi-storey car park within the development site

» Ensure that the car park is future-proofed to allow for any additional increases in rail patronage and Network Rail and/or franchise requirements

## 6 Walk/Cycle link to Site 2

» Provide a direct connection between Sites 1 and Site 2 for pedestrians and cyclists that avoids the need to travel via London Road

» Ensure the link is well surfaced, has good lighting and, where possible, overlooked by developments

## 7 Town Centre walk/cycle route

» Provide high-quality walking and cycling routes between the railway station and town centre - this could be via London Road and Station Road or utilising the open space between these two key destinations

## 8 Improved bus services (to Town Centre/ other key destinations eg Maylands) and corridor future proofing

» Improve the frequency of bus routes serving key destinations, particularly to/from the Town Centre and Maylands Business Park

» Utilise the new bus interchange facility on the Station forecourt to provide high quality bus waiting facilities and real time information improving transfer between bus and rail

» Ensure new development in Site 1 does not restrict any future changes to London Road to accommodate bus priority measures

» Investigate the possibility of implementing bus priority measures between key destinations , this is subject to further detailed benefits analysis

## 9 Potential Bridge widening

» If any highway widening is proposed, to implement bus priority measures (eg bus lanes) then the bridges crossing the River Bulbourne/ Grand Union Canal may need to be widened

## 10 London Road corridor improvements (public realm and pedestrian crossings)

» Improve the quality of the public realm along the London Road corridor to reduce vehicle dominance and maximise pedestrian crossing facilities

## 11 Controlled parking zone

» Implement a controlled parking zone across the site area, to prevent drivers parking on the surrounding streets to access the railway station

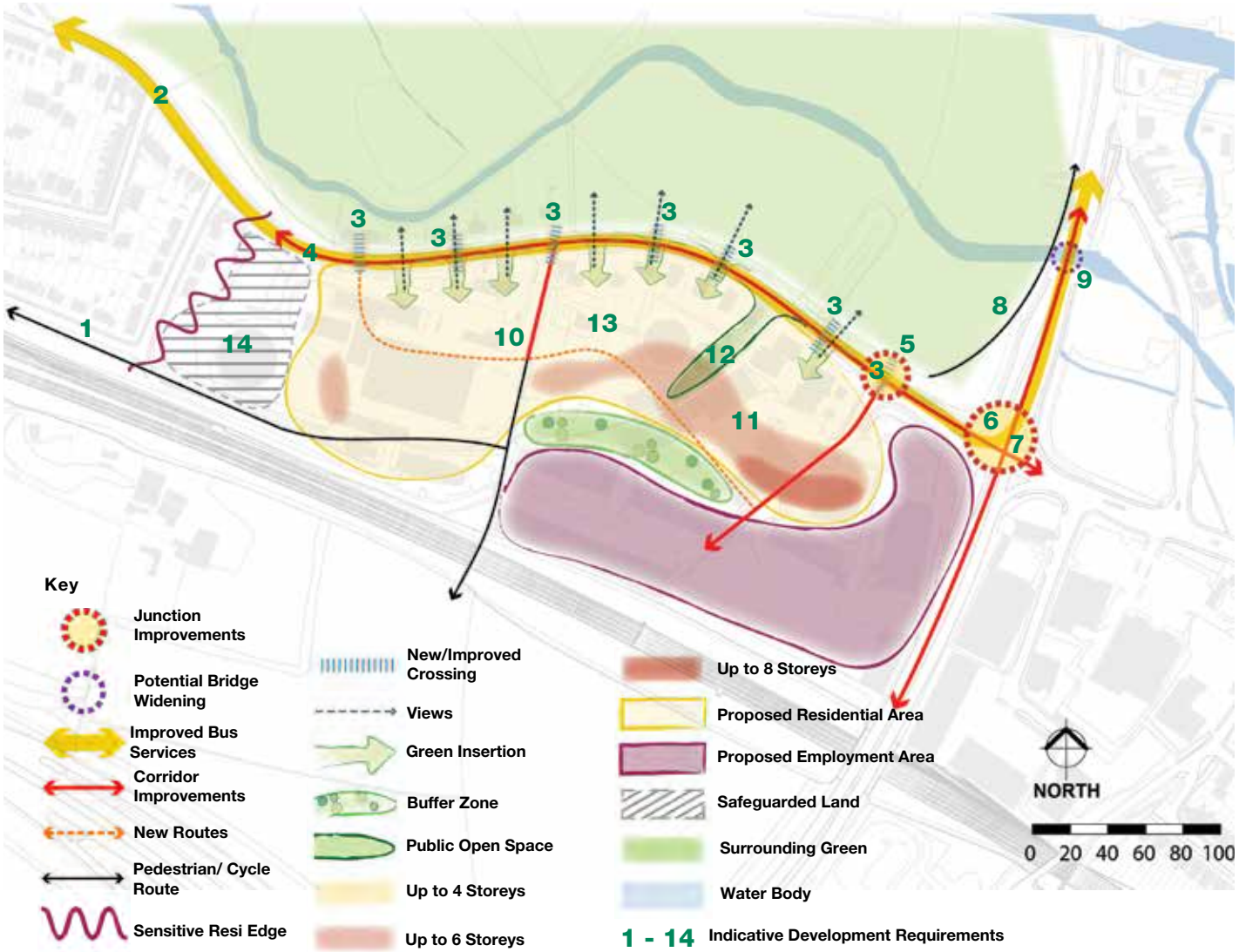
## 12 Lower parking standards

» The proximity of the railway station and access to public transport offers the prospect of reducing the parking provision provided in the new residential developments

# Key Proposals - Site 2

## Development Requirements

1. Walk/cycle link to site 1.
2. Improved bus services (to Town Centre / other key destinations eg Maylands) and corridor future proofing.
3. Formal/Informal Pedestrian crossings.
4. London Road Corridor improvements.
5. Whiteleaf junction signalisation.
6. Two Waters Road/London Road junction pedestrian improvements.
7. Two Waters Road/London Road junction highway improvements
8. Walk/Cycle route to town centre
9. Potential bridge widening
10. Controlled parking zone
11. Managed parking standards



# Key Proposals - Site 2

## 1 Walk/cycle link to site 1

» Provide a direct connection between Sites 2 and Site 1 for pedestrians and cyclists that avoids the need to travel via London Road.

» Ensure the link is well surfaced, has good lighting and, where possible, overlooked by developments.

## 2 Improved bus services (to Town Centre / other key destinations eg Maylands) and corridor future proofing

» Improve the frequency of bus routes serving key destinations, particularly to/from the Town Centre and Maylands Business Park.

» Ensure new development in Site 2 does not restrict any future changes to London Road to accommodate bus priority measures.

» Investigate the possibility of implementing bus priority measures between key destinations , this is subject to further detailed benefits analysis.

## 3 Formal/Informal Pedestrian crossings

» Allow for formal and informal pedestrian crossings on London Road that links the site with Boxmoor.

» Should be undertaken in combination with proposal 5.

## 4 London Road Corridor improvements

» The public realm along London Road could be improved with an emphasis on sustainable travel modes, therefore reducing vehicle dominance and speeds allowing for proposal 4.

» Recognise that Two Waters Road is an important strategic highway corridor balancing the requirements for vehicle travel with promoting sustainable travel modes.

## 5 Whiteleaf junction signalisation

» The Whiteleaf/London Road junction will need to be signalised in order to operate effectively with the increases in vehicle flow expected from Site 2. Further detailed analysis is required as development proposals come forward.

## 6 Two Waters Road/London Road junction pedestrian improvements

» There is the need to improve the junction for use by pedestrians and cyclists and to reduce severance, particularly given the residential development within Site 2.

» This could be delivered by reducing railings, adjusting signal timings to allow pedestrians to cross an entire carriageway in one movement, etc. Subject to further detailed analysis potential schemes will have to be developed in collaboration with proposal 8.

## 7 Two Waters Road/London Road junction highway improvements

» Subject to more detailed junction analysis it is anticipated that this junction will be operating in excess of capacity and require mitigation.

» This could include signal timing adjustments, additional left lane filters and carriageway widening. However, any plans need to consider proposal 7 and the importance of providing for pedestrians and cyclists and ensure car use does not dominate.

## 8 Walk/Cycle route to town centre

» Consider implementing a formal dedicated walk/cycle route between the site and the Town Centre, this could be via Boxmoor or the local highway network.

## 9 Potential bridge widening

» If any highway widening is proposed to implement bus priority measures (eg bus lanes), then the bridges crossing the River Bulbourne/Grand Union Canal may need to be widened.

## 10 Controlled parking zone

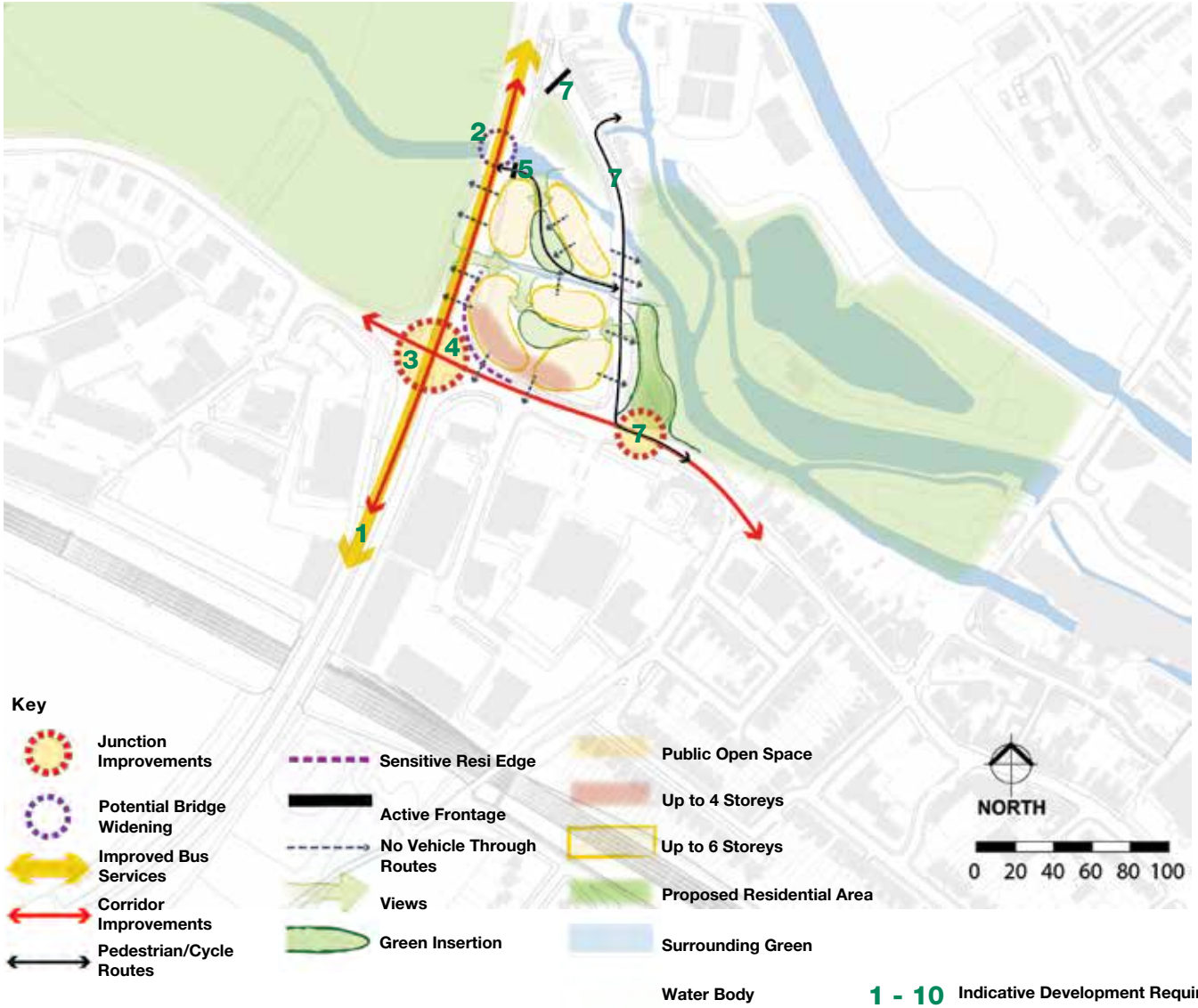
» Implement a controlled parking zone across the site area, to prevent drivers parking on the surrounding streets to access the railway station.

## 11 Managed parking standards

» Due to the proximity of the Town Centre, rail station, consideration should be given to reduce the parking provision provided in the new residential developments.

# Key Proposals - Site 3

1. Improved bus services (to Town Centre / other key destinations eg Maylands) and corridor future proofing
2. Potential bridge widening
3. Two Waters Road/London Road junction pedestrian improvements
4. Two Waters Road/London Road junction highway improvements
5. No vehicle through routes
6. Review of junction operation
7. Walk/Cycle route towards Town Centre



# Key Proposals - Site 3

## 1 Improved bus services (to Town Centre / other key destinations eg Maylands) and corridor future proofing

» Improve the frequency of bus routes serving key destinations, particularly to/from the Town Centre and Maylands Business Park.

» Ensure new development in Site 3 does not restrict any future changes to London Road to accommodate bus priority measures.

» Investigate the possibility of implementing bus priority measures between key destinations , this is subject to further detailed benefits analysis.

## 2 Potential bridge widening

» If any highway widening is proposed to implement bus priority measures (eg bus lanes), then the bridges crossing the River Bulbourne/Grand Union Canal may need to be widened.

## 3 Two Waters Road/London Road junction pedestrian improvements

» There is the need to improve the junction for use by pedestrians and cyclists and to reduce severance, particularly given the residential development within Site 2.

» This could be delivered by reducing railings, adjusting signal timings to allow pedestrians to cross an entire carriageway in one movement, etc. Subject to further detailed analysis potential schemes will have to be developed in collaboration with proposal 8.

»

## 4 Two Waters Road/London Road junction highway improvements

» Subject to more detailed junction analysis it is anticipated that this junction will be operating in excess of capacity and require mitigation.

» Appropriate improvements may include signal timing adjustments, additional left lane filters and carriageway widening. However, any plans need to consider proposal 7 and the importance of providing for pedestrians and cyclists and ensure car use does not dominate.

## 5 No vehicle through routes

» It is suggested that these roads remain as no through routes in order to avoid potential re-routing and “rat-running” traffic that is unrelated to the development itself.

» This will mean that the development site is accessed by vehicles via London Road only.

## 6 Review of junction operation

» Due to the proximity of the development site access junction to the Two Waters Road/London Road crossroads and the access to the retail area opposite the operation, the design of this junction will have to be carefully considered.

» It is suggested that this junction be considered as a whole with the two other junctions, including London Road/Whiteleaf Road to establish their combined most efficient operation.

»

## 7 Walk/Cycle route towards Town Centre

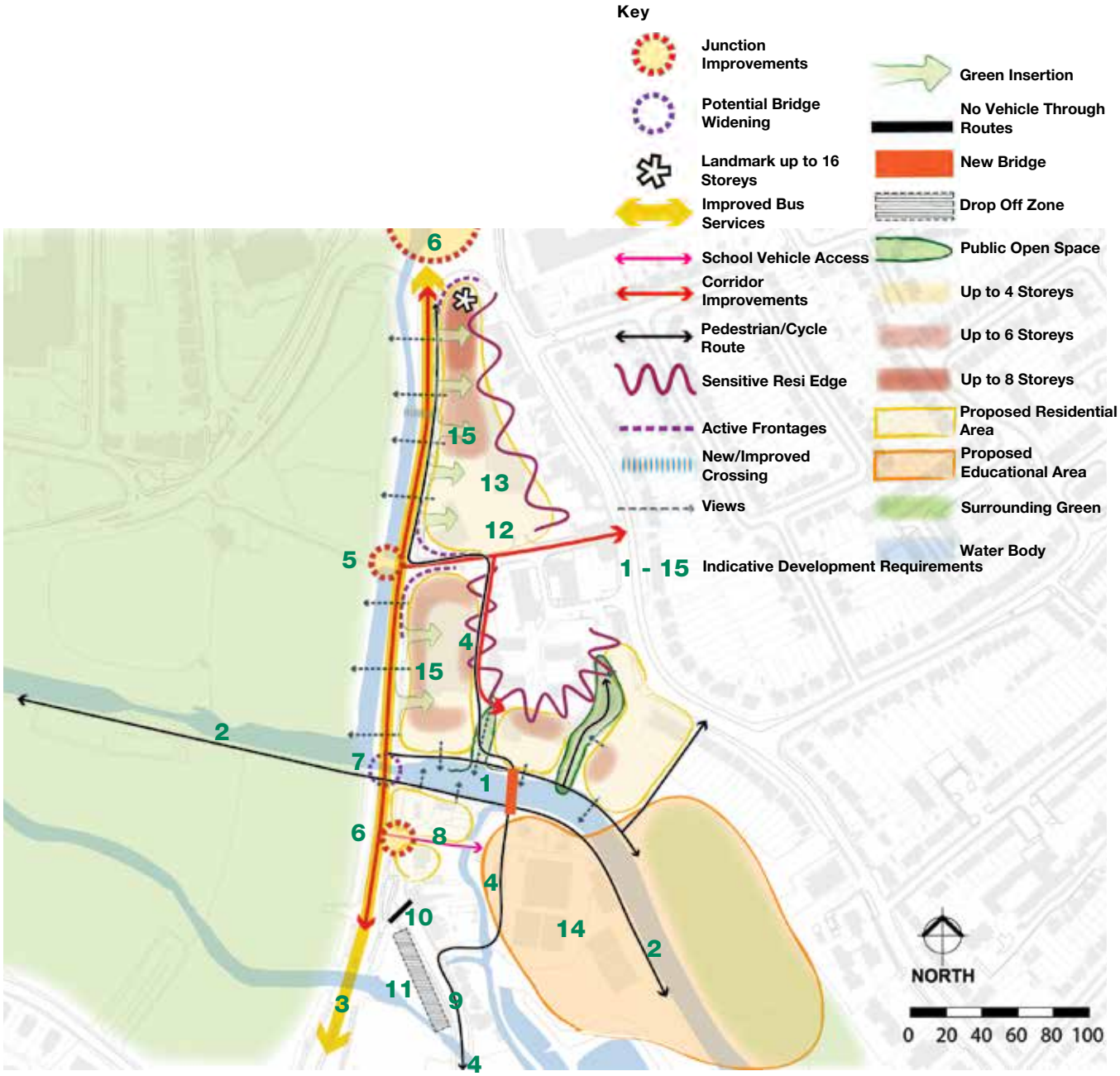
» The Masterplan and related sites present the opportunity to develop a pedestrian and cycle route between Apsley and the Town Centre without the need to use Two Waters Road.

» Therefore Two Waters Road can remain a strategic highway corridor and safer, more effective provision can be provided on a parallel route through the development sites as identified on the plan.

# Key Proposals - Site 4

## Development Requirements

1. New bridge (pedestrian/cycle only).
2. Tow path Improvements.
3. Improved bus services (to Town Centre / other key destinations eg Maylands) and corridor future proofing.
4. Walk/Cycle route towards Town Centre.
5. Junction improvements/ pedestrian crossings.
6. Wider Plough Roundabout improvements.
7. Potential bridge widening.
8. School vehicle access.
9. School pedestrian access.
10. No vehicle through route.
11. School drop off zone.
12. Controlled parking zone.
13. Managed parking standards.



# Key Proposals - Site 4

### 1 New bridge (pedestrian/cycle only)

» Given the potential position of the new primary school a new bridge connecting the primary school to the northern area of the Masterplan and Hemel Hempstead town centre should be considered. This would enable pedestrians and cyclists to access the school area without using Two Waters Road.

» This bridge would also enable the creation of a pedestrian and cyclist route connecting Apsley, development sites 3 and 4 and the Town Centre that runs parallel but separately from Two Waters Road.

### 2 Tow path Improvements

» New links between the potential new bridge over the canal and/or the development site itself, means that a sustainable travel route can be established east-west.

» Wider tow path improvements such as re-surfacing and lighting would enable these routes to be used in all weather conditions and provide additional security to those using them. These would provide a car-free walking and cycling route east-west across the entire Masterplan area which with careful consideration can be linked to routes serving key destinations in the Town and surrounding area.

### 3 Improved bus services (to Town Centre / other key destinations eg Maylands) and corridor future proofing

» Improve the frequency of bus routes serving key destinations, particularly to/from the Town Centre and Maylands Business Park.

» Ensure new development in Site 4 does not restrict any future changes to London Road to accommodate bus priority measures.

» Investigate the possibility of implementing bus priority measures between key destinations , this is subject to further detailed benefits analysis.

### 4 Walk/Cycle route towards Town Centre

» The Masterplan and related sites present the opportunity to develop a pedestrian and cycle route between Apsley and the Town Centre without the need to use Two Waters Road.

» Therefore Two Waters Road can remain a strategic highway corridor and safer, more effective provision can be provided on a parallel route through the development sites as identified on the plan.

### 5 Junction improvements/ pedestrian crossings

» Subject to a more detailed assessment the site access junctions may need to be altered in order to provide sufficient access to/from the site and to avoid having a detrimental impact on the surrounding highway network.

» Pedestrian crossings should be enhanced across Two Waters Road to promote pedestrian movements to/from Boxmoor.

### 6 Wider Plough Roundabout improvements

» If the scale of estimated masterplan vehicle demand is realised, existing congestion on the highway network at/near Plough Roundabout will be exacerbated. As development proposals come forward (for sites across the whole of Hemel Hempstead) a more detailed assessment of cumulative impacts should be undertaken and improvements to the junction explored.

### 7 Potential bridge widening

» If any highway widening is proposed, to implement bus priority measures (eg bus lanes) then the bridges crossing the River Bulbourne/ Grand Union Canal may need to be widened.

# Key Proposals - Site 4

## 8 School vehicle access

» Vehicle access will need to be provided for the school including for staff, visitors and servicing vehicles. This route is suggested via Two Waters Road and the existing vehicle access to the nursery area. It should be noted that this access should be restricted to prevent use by parents.

## 9 School pedestrian access

» In creating a pedestrian and cyclist access via the side road (Two Waters Road) and via a potential new pedestrian/cycle only bridge, the school can be accessed on foot from several directions thus encouraging and supporting sustainable travel.

» In addition restricting vehicle flows onto the site will create a safer, more pleasant environment for walking and cycling (see proposal 5).

## 10 No vehicle through route

» It is suggested that these roads remain no through routes in order to avoid potential re-routing and “rat-running” traffic that is unrelated to the development itself.

» This will mean that the development site is accessed by vehicle via London Road only.

## 11 School drop off zone

» In order to promote sustainable travel to/from the primary school and to minimise congestion on Two Waters Road it is suggested that the school drop-off area could be located on the side road also known as Two Waters Road.

» This would also allow children to end their journey to the school on foot. Whilst accepting that car use will be popular with parents, particularly linking to onward journeys for work.

## 12 Controlled parking zone

» Implement a controlled parking zone across the site area, to prevent drivers parking on the surrounding streets to access the railway station.

## 13 Managed parking standards

» Due to the proximity of the Town Centre, railway station consideration should be given to reduce the parking provision provided in the new residential developments.

# Key Proposals - Costings

Indicative cost ranges for the identified proposals are shown below. These costs should be critically reviewed, particularly those identified as being source from S106 and/or CIL contributions, as more detail development proposals come forward.

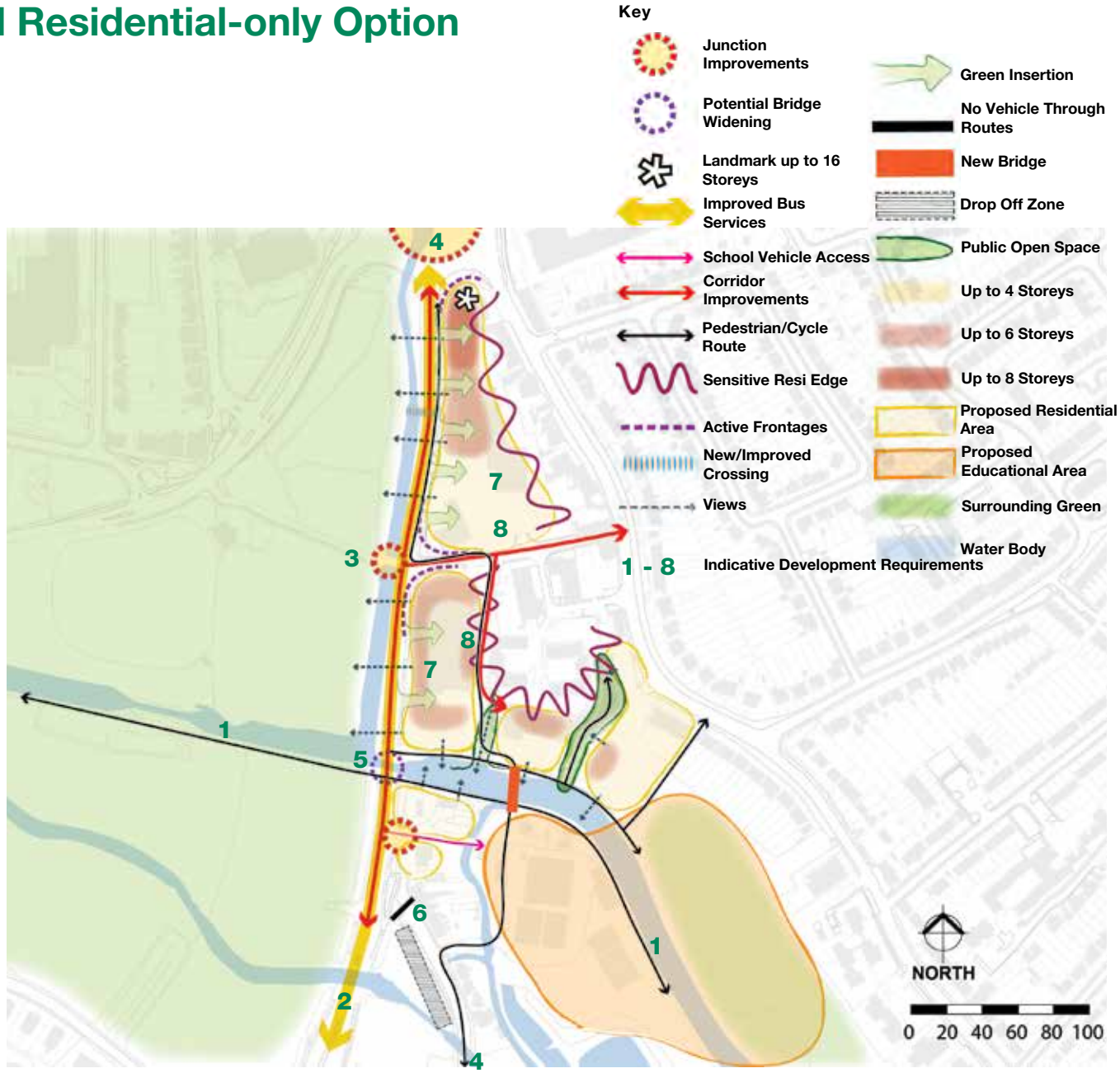
Some of the larger proposals will need further consideration as part of town centre cumulative development impact testing. Modelling and analysis work by HCC (underpinning their Growth and Transport Plan) could be an appropriate strategic tool to understand overall pressures which can then be addressed through more specific proposals.

| Site | Proposal | Description | Notes | Low £ | Mid £ | High £ | Indicative contributi | Weighted Low £ | Weighted Mid £ | Weighted High £ |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Station improvements | Dependent on Network Rail | £500,000 | £1,000,000 | £5,000,000 | 25% | £125,000 | £250,000 | £1,250,000 |
| 1 | 2 | Station forecourt | Ditto; High level estimate including bus interchange | £200,000 | £500,000 | £1,000,000 | 25% | £50,000 | £125,000 | £250,000 |
| 1 | 3 | New station access | Serving forecourt, MSCP, site 1 | £100,000 | £200,000 | £300,000 | 100% | £100,000 | £200,000 | £300,000 |
| 1 | 4 | Existing station access | Re-working of existing access | £25,000 | £62,500 | £125,000 | 100% | £25,000 | £62,500 | £125,000 |
| 1 | 5 | MSCP | Already included in viability assessment | £0 | £0 | £0 | 100% | £0 | £0 | £0 |
| 1 | 6 | Walk/cycle link to site 2 | Paved and well lit; assume no land take; cost split with site 2 | £25,000 | £50,000 | £100,000 | 50% | £12,500 | £25,000 | £50,000 |
| 1 | 7 | Town centre walk/route | Across Boxmoor towards Station Road canal bridge | £25,000 | £50,000 | £100,000 | 100% | £25,000 | £50,000 | £100,000 |
| 1 | 8 | Improved bus services | Increased service frequencies, improved operating stock, improved RTI etc | £500,000 | £1,000,000 | £2,000,000 | 15% | £75,000 | £150,000 | £300,000 |
| 1 | 8b | Future proofing - bus infrastructure | Land safeguarded (all); localised widening (mid); more extensive priority (high) | £0 | £125,000 | £625,000 | 100% | £0 | £125,000 | £625,000 |
| 1 | 9 | Bridge widening | Indicative estimate | £1,250,000 | £2,500,000 | £3,750,000 | 15% | £187,500 | £375,000 | £562,500 |
| 1 | 10 | London Road corridor improvements | Footway improvements, declutttering, public realm improvements | £125,000 | £250,000 | £500,000 | 66% | £82,500 | £165,000 | £330,000 |
| 1 | 11 | CPZ | | £12,500 | £25,000 | £37,500 | 100% | £12,500 | £25,000 | £37,500 |
| 1 | 12 | Lower parking standards | | £0 | £0 | £0 | 100% | £0 | £0 | £0 |
| 2 | 1 | Walk/cycle link to site 1 | Paved and well lit; assume no land take; cost split with site 1 | £25,000 | £50,000 | £100,000 | 50% | £12,500 | £25,000 | £50,000 |
| 2 | 2 | Improved bus services | Increased service frequencies, improved operating stock, improved RTI etc | £500,000 | £1,000,000 | £2,000,000 | 15% | £75,000 | £150,000 | £300,000 |
| 2 | 2b | Future proofing - bus infrastructure | Land safeguarded (all); localised widening (mid); more extensive priority (high) | £0 | £125,000 | £625,000 | 100% | £0 | £125,000 | £625,000 |
| 2 | 3 | Pedestrian crossings | Assume 3 | £180,000 | £250,000 | £300,000 | 100% | £180,000 | £250,000 | £300,000 |
| 2 | 4 | London Road corridor improvements | Footway improvements, declutttering, public realm improvements | £125,000 | £250,000 | £500,000 | 66% | £82,500 | £165,000 | £330,000 |
| 2 | 5 | Whiteleaf junction signals | Signalisation | £125,000 | £250,000 | £375,000 | 100% | £125,000 | £250,000 | £375,000 |
| 2 | 6 | Crossroads public realm / ped imps | Indicative estimate | £62,500 | £125,000 | £312,500 | 25% | £15,625 | £31,250 | £78,125 |
| 2 | 7 | Crossroads highway improvement | Indicative estimate | £250,000 | £625,000 | £1,250,000 | 33% | £82,500 | £206,250 | £412,500 |
| 2 | 8 | Walk / cycle route to town centre | Across Boxmoor towards Two Waters Road river bridge(?) | £31,250 | £62,500 | £125,000 | 100% | £31,250 | £62,500 | £125,000 |
| 2 | 9 | Bridge widening | Assume both river and canal | £2,500,000 | £5,000,000 | £7,500,000 | 25% | £625,000 | £1,250,000 | £1,875,000 |
| 2 | 10 | CPZ | | £12,500 | £25,000 | £37,500 | 100% | £12,500 | £25,000 | £37,500 |
| 2 | 11 | Managed parking standards | | £0 | £0 | £0 | 100% | £0 | £0 | £0 |
| 3 | 1 | Future proofing - bus infrastructure | Land safeguarded (all); localised widening (mid); more extensive priority (high) | £0 | £62,500 | £187,500 | 100% | £0 | £62,500 | £187,500 |
| 3 | 2 | Bridge widening | Assume both river and canal | £2,500,000 | £5,000,000 | £7,500,000 | 5% | £125,000 | £250,000 | £375,000 |
| 3 | 3 | Crossroads public realm / ped imps | Indicative estimate | £62,500 | £125,000 | £312,500 | 5% | £3,125 | £6,250 | £15,625 |
| 3 | 4 | Crossroads highway improvement | Indicative estimate | £250,000 | £625,000 | £1,250,000 | 5% | £12,500 | £31,250 | £62,500 |
| 3 | 5 | No through route | No specific costs incurred | £0 | £0 | £0 | 100% | £0 | £0 | £0 |
| 3 | 6 | Review of junction operation | No action required (low); modest change (mid); wider signalisation (high) | £0 | £31,250 | £125,000 | 100% | £0 | £31,250 | £125,000 |
| 3 | 7 | Ped/cycle route to TC (site 4d) | Along old Two Waters Road alignment | £125,000 | £250,000 | £375,000 | 50% | £62,500 | £125,000 | £187,500 |
| 4 | 1 | New bridge (ped/cycle) | Single span over canal - required for school access | £1,250,000 | £2,500,000 | £3,750,000 | 100% | £1,250,000 | £2,500,000 | £3,750,000 |
| 4 | 2 | Tow path improvements | | £1,000,000 | £2,000,000 | £4,000,000 | 15% | £150,000 | £300,000 | £600,000 |
| 4 | 3 | Improved bus services | Increased service frequencies, improved operating stock, improved RTI etc | £500,000 | £1,000,000 | £2,000,000 | 15% | £75,000 | £150,000 | £300,000 |
| 4 | 3b | Future proofing - bus infrastructure | Land safeguarded (all); localised widening (mid); more extensive priority (high) | £0 | £125,000 | £312,500 | 100% | £0 | £125,000 | £312,500 |
| 4 | 4 | Ped/cycle route to town centre (site 4abc) | | £125,000 | £250,000 | £375,000 | 50% | £62,500 | £125,000 | £187,500 |
| 4 | 5 | Junction improvements | | £31,250 | £62,500 | £125,000 | 100% | £31,250 | £62,500 | £125,000 |
| 4 | 6 | Plough roundabout improvements | | £1,000,000 | £3,000,000 | £10,000,000 | 20% | £200,000 | £600,000 | £2,000,000 |
| 4 | 7 | Bridge widening | Assume both river and canal | £2,500,000 | £5,000,000 | £7,500,000 | 5% | £125,000 | £250,000 | £375,000 |
| 4 | 8 | School vehicle access | Assume within site construction costs | £0 | £0 | £0 | 100% | £0 | £0 | £0 |
| 4 | 9 | School ped access | Assume within site construction costs | £0 | £0 | £0 | 100% | £0 | £0 | £0 |
| 4 | 10 | No through route | Assume within site construction costs | £0 | £0 | £0 | 100% | £0 | £0 | £0 |
| 4 | 11 | school drop-off zone | | £10,000 | £50,000 | £150,000 | 100% | £10,000 | £50,000 | £150,000 |
| 4 | 12 | CPZ | | £12,500 | £25,000 | £37,500 | 100% | £12,500 | £25,000 | £37,500 |
| 4 | 13 | Managed parking standards | | £0 | £0 | £0 | 100% | £0 | £0 | £0 |

# Key Proposals - Site 4 with 4d Residential-only Option

## Development Requirements

1. Tow path Improvements.
2. Improved bus services (to Town Centre / other key destinations eg Maylands) and corridor future proofing.
3. Junction improvements/ pedestrian crossings.
4. Wider Plough Roundabout improvements.
5. Potential bridge widening.
6. No vehicle through route.
7. Controlled parking zone.
8. Managed parking standards.



# Key Proposals - Site 4 with 4d Residential-only Option

## 1 New bridge (pedestrian/cycle only)

» A new bridge across the canal provides a direct walk/cycle connection to nearby residential areas that would form the catchment of a new primary school. The residential-only Site 4d option leads a much reduced need for this connection therefore.

» However a new bridge connection should still be considered as it would enable the creation of a pedestrian and cyclist route connecting Apsley, development sites 3 and 4 and the Town Centre that runs parallel but separately from Two Waters Road (see proposal 4).

## 2 Tow path Improvements

» New links between the potential new bridge over the canal and/or the development site itself, means that a sustainable travel route can be established east-west.

» Wider tow path improvements such as re-surfacing and lighting would enable these routes to be used in all weather conditions and provide additional security to those using them. These would provide a car-free walking and cycling route east-west across the entire Masterplan area which with careful consideration can be linked to routes serving key destinations in the Town and surrounding area.

## 3 Improved bus services (to Town Centre / other key destinations eg Maylands) and corridor future proofing

» Improve the frequency of bus routes serving key destinations, particularly to/from the Town Centre and Maylands Business Park.

» Ensure new development in Site 4 does not restrict any future changes to London Road to accommodate bus priority measures.

» Investigate the possibility of implementing bus priority measures between key destinations , this is subject to further detailed benefits analysis.

## 4 Walk/Cycle route towards Town Centre

» The Masterplan and related sites present the opportunity to develop a pedestrian and cycle route between Apsley and the Town Centre without the need to use Two Waters Road.

» Therefore Two Waters Road can remain a strategic highway corridor and safer, more effective provision can be provided on a parallel route through the development sites as identified on the plan.

» The delivery of a new canal bridge is important to delivering this parallel route; however it should be noted that a residential-only option for Site 4d reduces the need for the bridge as there is no need to connect a new school with its local catchment.

## 5 Junction improvements/ pedestrian crossings

» Subject to a more detailed assessment the site access junctions may need to be altered in order to provide sufficient access to/from the site and to avoid having a detrimental impact on the surrounding highway network.

» Pedestrian crossings should be enhanced across Two Waters Road to promote pedestrian movements to/from Boxmoor.

## 6 Wider Plough Roundabout improvements

» If the scale of estimated masterplan vehicle demand is realised, existing congestion on the highway network at/near Plough Roundabout will be exacerbated. As development proposals come forward (for sites across the whole of Hemel Hempstead) a more detailed assessment of cumulative impacts should be undertaken and improvements to the junction explored.

## 7 Potential bridge widening

» If any highway widening is proposed, to implement bus priority measures (eg bus lanes) then the bridges crossing the River Bulbourne/ Grand Union Canal may need to be widened.

# Key Proposals - Site 4 with 4d Residential-only Option

### 8 School vehicle access

» A dedicated school vehicle access is not required with a residential-only Site 4d option. Re-use and improvement of the existing access adjacent to the restaurant should be investigated as the primary means of access to plot 11.

### 9 School pedestrian access

» A dedicated school pedestrian access is not required with a residential-only Site 4d option. Provision of an secondary access should still be considered in order to provide wider connectivity to Site 3 and the south.

### 10 No vehicle through route

» It is suggested that these roads remain no through routes in order to avoid potential re-routing and “rat-running” traffic that is unrelated to the development itself.

» This will mean that the development site is accessed by vehicle via London Road only.

### 11 School drop off zone

» A dedicated school drop-off / pick-up area is not required with a residential-only Site 4d option.

### 12 Controlled parking zone

» Implement a controlled parking zone across the site area, to prevent drivers parking on the surrounding streets to access the railway station.

### 13 Managed parking standards

» Due to the proximity of the Town Centre, railway station consideration should be given to reduce the parking provision provided in the new residential developments.

# Summary & Further Considerations

## Wider Area Considerations

While this Masterplan aims to encourage sustainable travel and mitigate potential development impacts in the study area it should be noted that it will not necessarily be able to solve all of the existing problems, particularly the highway network operating at, or close to, capacity. The masterplan provides transport related guidelines and objectives for any new developments brought forward in the Masterplan Area to:

- Ensure they are as sustainable as possible whilst accepting car use will be prevailing norm in the short term;
- Prioritise local improvements to highway capacity where essential; and
- Actively promote a wider shift in the borough towards sustainable travel and peak spreading to alleviate highway pressures.

Ultimately the scale of investment required to fully address all of the highway issues in the masterplan may not be possible, especially in the short term, and that as a consequence car journey times may worsen due to the scale of growth likely to take place.

Additionally, many of the identified transport pressures in the area are related to wider strategic issues that cannot be resolved within just the Masterplan area. Therefore, Dacorum Borough Council (DBC) and BDP in conjunction with Hertfordshire County Council (HCC) have looked at opportunities for a more holistic approach to travel, including reducing the need to travel and promoting credible alternatives to car use. The masterplan should have a role in delivering elements of these wider proposals as well as delivering localised improvements to address specific problems and congestion 'hotspots'.

DBC are working with HCC to assess the potential for a more holistic approach to transport – this will be embedded within HCC's forthcoming Growth and Transport Plan for South West Hertfordshire.

Potential measures such as intermodal interchanges on the M1 and M25, additional bus routes serving Hemel Hempstead, increased frequencies of existing bus services and an improved cycle network are being considered that are intended to reduce car use and promote alternatives. DBC are working with HCC to explore the improvement of public transport services connecting Hemel Hempstead Station with the surrounding area.

Whilst it will not be possible for this masterplan to fully resolve the area's transport issues it could have a role in delivering elements of these proposals and it should make a positive contribution overall to existing conditions for all modes of travel. Safeguarding of land that may be required for future improvements has been considered within this Masterplan.

The next slide considers future changed to movement and mobility which are also pertinent to managing networks in the future.

Cultural change

National Policy has moved towards securing more sustainable outcomes with emphasis on minimising the need to travel, reducing car use and encouraging more sustainable modes of transport. This is reflected in HCC's Local Transport Plan 3 and is a clear theme in the emerging 2050 Hertfordshire Transport Vision. In the medium to long term there are likely to be environmental and social imperatives to improving transport opportunities for all and achieving behavioural change in mode choice. Therefore alternative and aspirational transport solutions have been considered linking to HCC's Growth and Transport plan proposals.

# Summary & Further Considerations

## Further Considerations

While this transport report has looked at the existing travel patterns and behaviours of people within the Masterplan Area, longer term changes in transport, access and movement should also be considered. This section presents an initial and conceptual assessment of three potential changes and how they could influence the Masterplan Area.

### Sharing of Vehicles Without Ownership

- Potential for a reduction in privately owned vehicles with taxis, Uber and car clubs providing car-based mobility needs
- The sharing of vehicles and journeys could become normal with an on-demand service by either manned taxis, autonomous vehicles or self-drive clubs

### Potential Impact on Masterplan Area

- Release kerb side space as less on-street parking is required, although drop-off/pick-up areas will need to be retained as demand will increase.
- Unclear implications on traffic flow as it is not known where autonomous vehicles will go when not is use i.e. moving or parking

### Electric Vehicles

- The use and ownership of electric cars, motorcycles and bicycles will substantially increase
- Electric goods vehicles will be required to tackle air quality (noting the existing London Road AQMA)

### Potential Impact on Masterplan Area

- Need to provide a high density of charging points on-street
- Future proof streets with passive electric feeds
- Include charging points on cycle racks
- There is a potential for smaller electric cars meaning smaller parking bays or perpendicular parking bays could be considered

### Travel Demand

- Long-term potentially significant reduction in ownership and use
- Substantial/total reduction in petrol/diesel vehicles
- Substantial growth in sustainable travel/ behaviours including; walking, cycling, rail, buses and shared vehicles

### Potential Impact on Masterplan Area

- Streets must be able to cater for the existing situation while future proofing for substantial shifts in travel behaviours
- Potential to significantly lower vehicle flows and reallocate road space for sustainable modes of travel such as cycle lanes, bus priority measures etc.

# Summary & Further Considerations

The Masterplan Area is well connected to the local and strategic highway network, including the M25 and M1 and is served by two trains stations which provide direct services to London in under 30 minutes.

However, the Masterplan Area suffers from a congested highway network and more generally a vehicle dominated environment. This vehicle domination is due to the strategic links passing through the area, the relatively limited public transport offer and the distance between the town centre that limits the attractiveness of non-car modes of travel.

A high-level assessment of the impacts of the potential development has been carried out as part of the masterplan. This provided a basis for an assessment of a future scenario to understand the potential pressures on the transport network.

Based on this assessment, a series of proposals to improve the transport network in the Masterplan Area have been identified. These include proposals that will be required to bring specific development forward and broader changes that should be introduced to maximise sustainable travel across a wider area.

Site-specific proposals include reducing vehicle dominance and severance along London Road, new or improved access junctions, a high quality station interchange and new improved walk/cycle links. Broader plans include increased bus frequencies, future proofing for bus priority measures and capacity improvements at key junctions (eg Plough Roundabout).

The creation of a new school within Site 4 presents an opportunity for a new pedestrian/cyclist crossing to be built over the canal.  In a residential-only option for Site 4d there is much reduced need for this connection; however it should still be considered as it would enable the creation of a pedestrian and cyclist route connecting Apsley, development sites 3 and 4 and the town centre that runs parallel but separately from Two Waters Road.

The proposals outlined are part of a high-level masterplan and any identified changes will need to be analysed, explored and designed in more detail, particularly in terms of wider Borough cumulative impacts before being brought forward.

It is also important to note that delivering wider scale changes will not be achieved by this Masterplan alone and that DBC will need to work in collaboration with HCC to achieve and deliver these. Additionally, this masterplan does not necessarily aim to solve all the existing identified problems, especially in the short-term.


BDP.

GL Hearn

urban flow