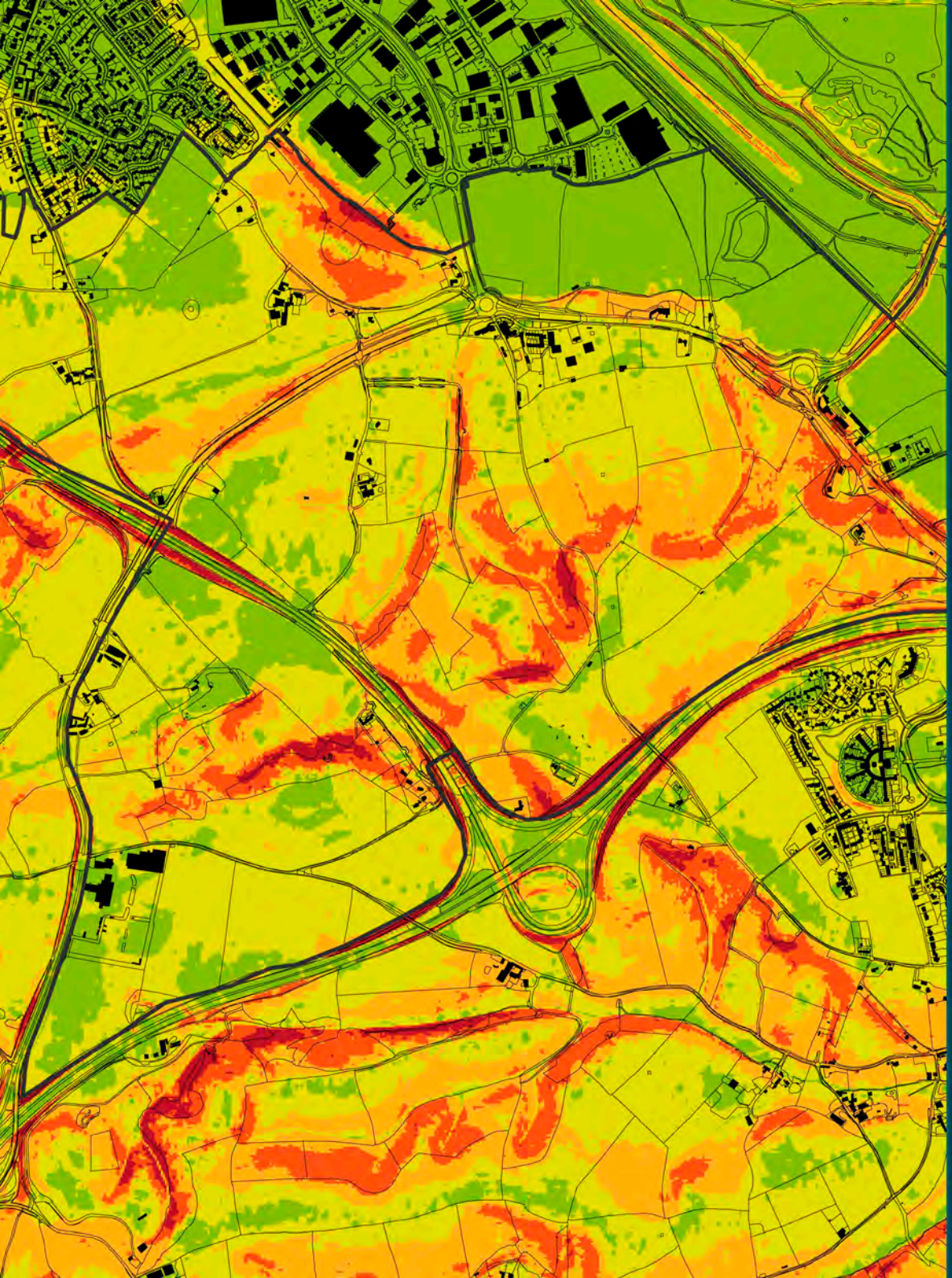

LDĀDESIGN

SOUTHWEST EXETER MASTERPLAN

JUNE 2012

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This document has been prepared and checked in accordance with ISO 9001:2008.

AERIAL PHOTOGRAPH OF SITE/STUDY AREA

1.0

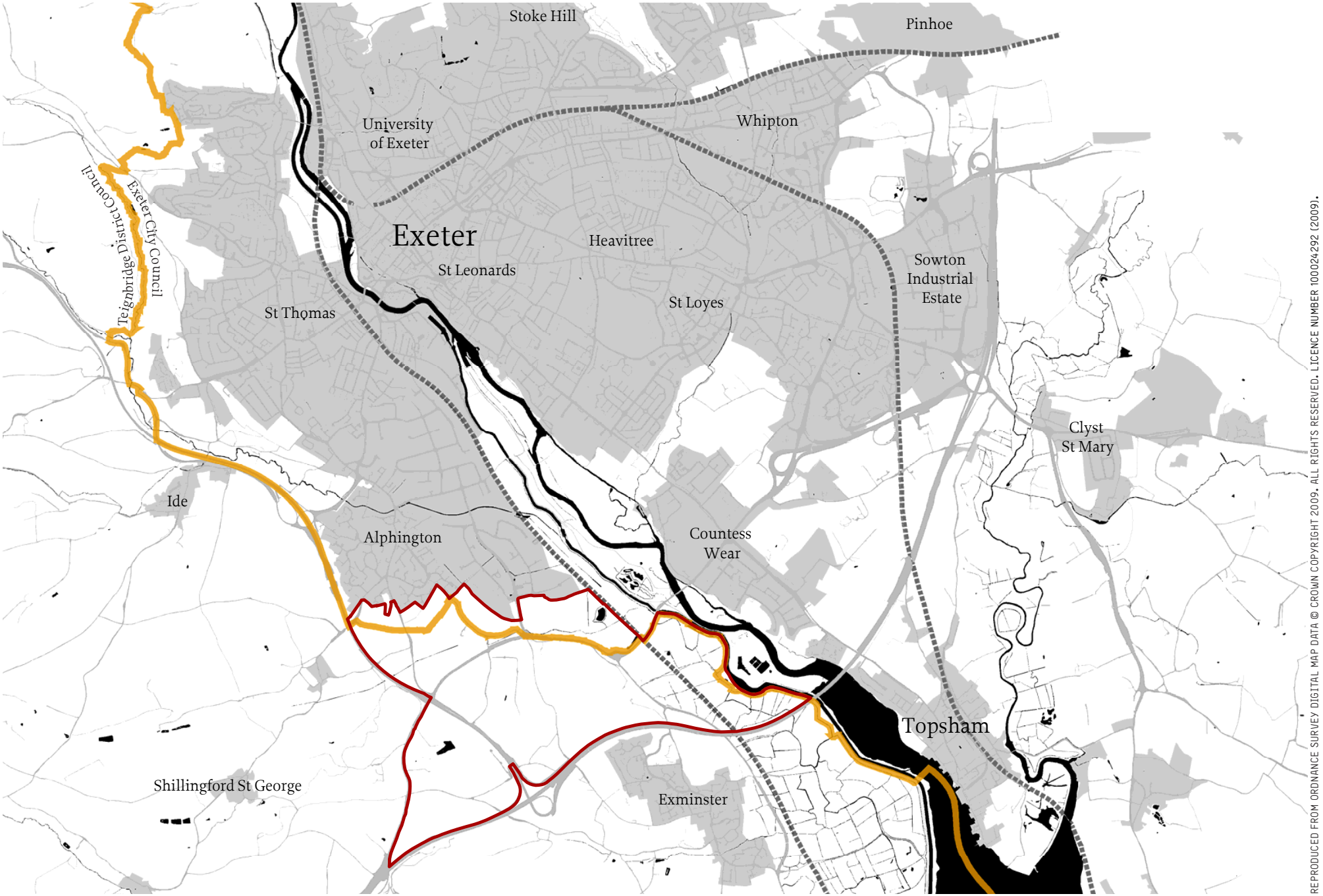
INTRODUCTION

Exeter like most urban settlements particularly in the south of England has a growing population and with this growth comes a need for housing and the requirement for suitable supporting infrastructure to promote sustainable growth.

The Regional Spatial Strategy for the South West (RSS) which is now intended to be revoked outlined a requirement for at least 2,500 new homes to be built within area of search 4C to the South West of Exeter. Around 500 of these new dwellings were to be accommodated within the administrative boundaries of Exeter, and at least 2,000 dwellings were to be built within the Teignbridge plan area. These parameters for the growth of Exeter were the catalyst for proposed growth in this area, and although the intention to revoke the RSS was announced during the masterplanning process, the potential for growth in this part of Exeter and Teignbridge still requires investigating and coordinating to establish a vision and framework for future development.

To help shape the policy that can deliver this need for growth LDA Design have been commissioned by Teignbridge District Council supported by Exeter City Council, Devon County Council and Exeter and East Devon Growth Point to prepare a masterplan for the South West of Exeter, focused on but not constrained to the study area indicated on the aerial photo opposite and location plan overleaf.

The purpose of the masterplan is to help promote and encourage sustainable growth and provide a flexible framework within which development can come forward. The proposals put forward in this document will inform a strategic allocation in the Core Strategy for Teignbridge and the Core Strategy strategic allocation for Exeter City Council, forming policy that will shape future growth and development in the South West of Exeter.



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SITE/STUDY AREA LOCATION PLAN

1.1 THE STUDY AREA

The masterplanning process focuses on a study area that lies to the south west of Exeter and forms part of an 'Area of Search' identified for Exeter within the Regional Spatial Strategy for the South West (RSS) of which there is an intention to revoke, bordered by the M5 to the south, Exe estuary to the east and by the A30 and A379 to the west. Although this area will be the focus of the study a successful approach will need to look beyond the site boundary to the surrounding context. However due to the nature of infrastructure and natural features that bound the study area it is unlikely that the current requirements will push growth beyond the study area.

Development in this area of Exeter and Teignbridge is not straightforward. There are many considerations and constraints for development including a complex topography, the fractured nature of the site caused by major road infrastructure, a rich heritage, flood plains and a varied land ownership. These issues will constrain but also help shape the nature of development proposed.

South West Exeter is one of a number of growth areas in and around Exeter suggested for potential development as urban extensions. As the city grows the site constraints and opportunities will need to be responded to carefully to ensure the citys growth into this area is successful.

1.2 THE MASTERPLAN PROCESS

The purpose of the masterplan is to help promote and encourage sustainable growth and provide a flexible framework within which development can come forward. This flexible framework is developed through a masterplanning process set out in this document which covers several key aspects:

- The Context for Growth
- Site Capacity and the Potential for Growth
- A Vision for Growth
- A Framework for Growth
- Delivering the Masterplan

The context for growth is an analysis of the study area and its wider context, this informs the calculation of capacity for development and the potential for the study area to support growth.

Once the potential for growth has been established it is then vital that an aspirational but achievable vision is developed that sets out how the objectives of sustainable growth can be achieved.

Once the vision is established it is then necessary to construct a series of strategic frameworks within which development can come forward to achieve the vision, this will not be too prescriptive but will ensure that development will deliver sustainable growth in line with the objectives. An illustrative masterplan demonstrates one way in which these frameworks could shape development but the flexible nature of the frameworks will allow development to be realised in a way that suits current or future demand.

The final vital element of the process which is considered at all stages is the demonstration that growth in this area is financially viable setting out how development can be delivered to ensure its viability now and in the future but also ensuring that growth is sustainable at all stages of delivery.

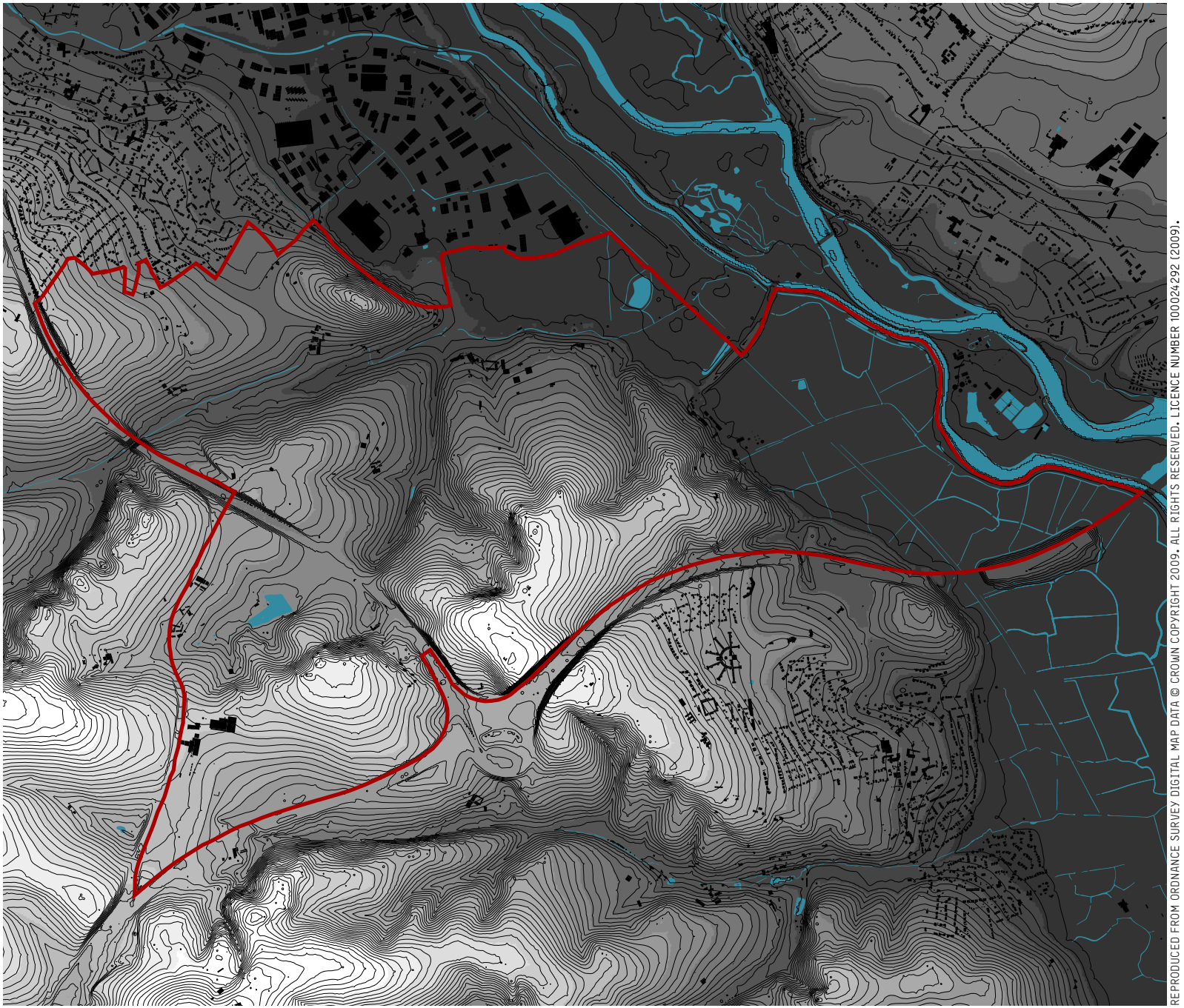
2.0

THE CONTEXT FOR GROWTH

In order to establish the potential for growth and the proposals for realising growth it is first important to understand the physical context for development. The constraints and opportunities that the site and its context will place on potential development will determine both the quantity and shape of development.

The following section sets out a range of mapping for the study area and its context analysing the physical, social and environmental aspects of the study area and discussing how these should shape the proposals to follow. The areas of analysis include:

- 2.1 Topography
- 2.2 Slope Analysis
- 2.3 Existing Landscape Character
- 2.4 Landscape Designations & Significant Vegetation cover
- 2.5 Views and Visual Sensitity
- 2.6 Ecological Designations
- 2.7 Flooding and Surface Water
- 2.8 Heritage
- 2.9 Access and Movement
- 2.10 Noise and Air Quality
- 2.11 Existing Green Infrastructure
- 2.12 Built Environment and Community Facilities
- 2.13 Land Ownership



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LEGEND:

STUDY AREA BOUNDARY

WATER

HIGHER GROUND — LOWER GROUND

0 250 500 METRES

N

TOPOGRAPHY

2.1 TOPOGRAPHY

The site lies on the western side of the Exe Valley, on land which rises up from the flat floor of the river floodplain to a series of low rounded hills, ridges and valleys, modified significantly in places by major road cuttings. This complex topography has a strong influence upon the potential for development in different areas:

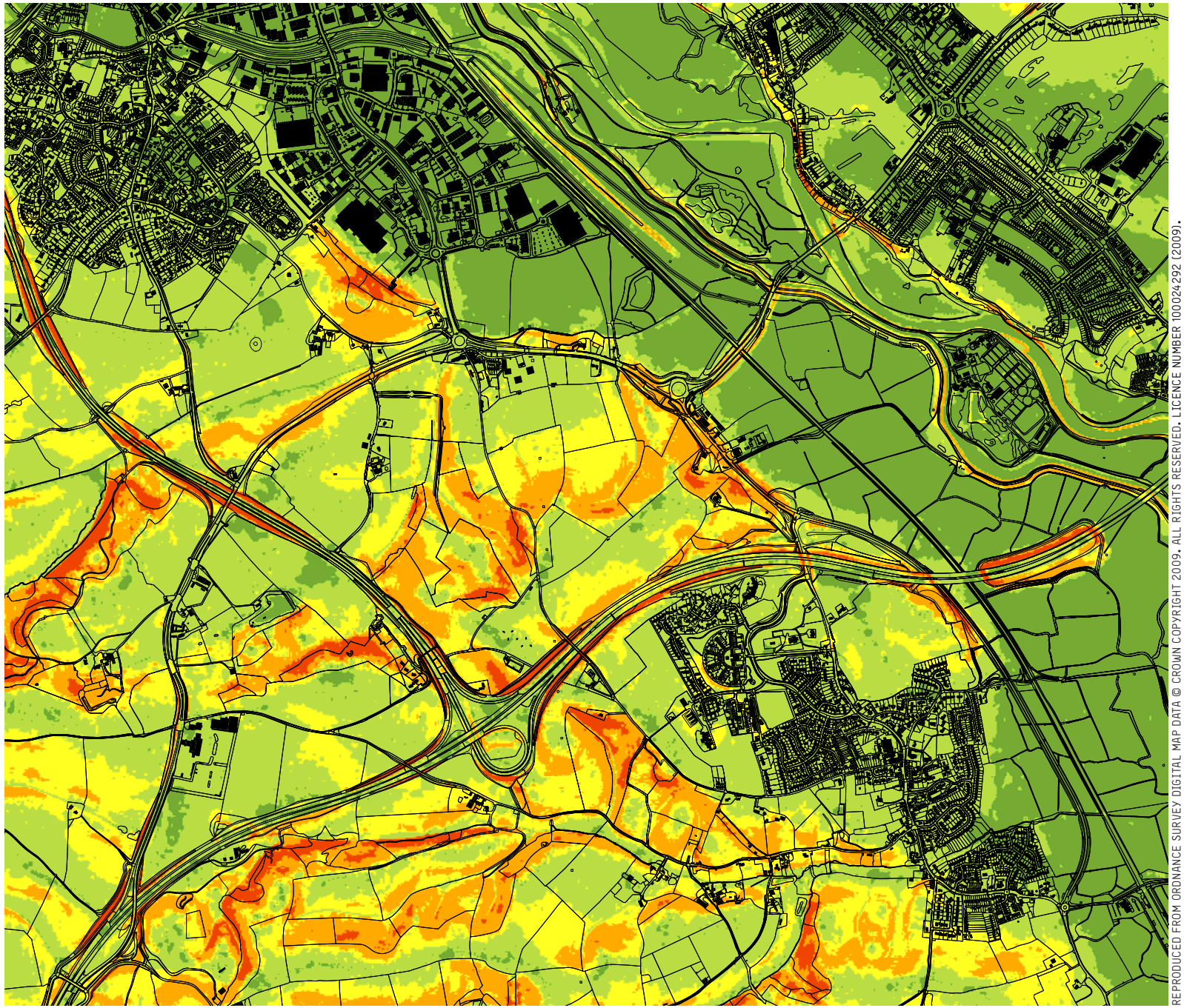
- The northern part of the site occupies the flat floodplain of the River Exe lying below 5m AOD. This low-lying land is prone to waterlogging and flooding, which places some constraints upon its development potential.

- The Matford Brook, a minor tributary of the River Exe, runs from east to west across the site within a broad, shallow valley. The valley rises gently to a high point of around 55m AOD to the north on the edge of Alphington village and around 40m AOD to the south along the A379. The gentle topography is potentially suitable for development but the valley floor itself is less conducive.

- At the north-eastern end of this valley, a prominent rounded knoll known as Knowle Hill rises steeply from around 25m AOD to around 40m AOD and forms a distinctive landform feature and local landmark. The steepness of the slopes and physical prominence limit development potential.

- To the south of the A379, land within the site rises steeply up to Pearce's Hill which, at 82m AOD, forms the highest point of a ridge of landform running roughly SW-NE. The ridge itself forms an area of relatively level ground but the southern and eastern slopes of Pearce's Hill have been cut through by the deep road cuttings of the A30 and M5 motorway corridors, to create dramatic exposed rock faces. The northern and eastern slopes of the ridge fall less dramatically but still quite steeply, and are incised by minor valleys, creating a complex undulating landform that places some constraints on development potential.

- The high ground continues to the west of the A30, reaching a high point of 73m AOD, before falling to the west and south in smooth, gentle slopes. The ground falls sharply on the northern side of the ridge before levelling out into a relatively gentle area of landform at around 40m AOD between the A379 and A30 road corridors.



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LEGEND:

- 1:100 - 1:40 SLOPE
- 1:40 - 1:10 SLOPE
- 1:10 - 1:6 SLOPE
- 1:6 - 1:3 SLOPE
- 1:3 - 1:1 SLOPE

0 250 500 METRES

N

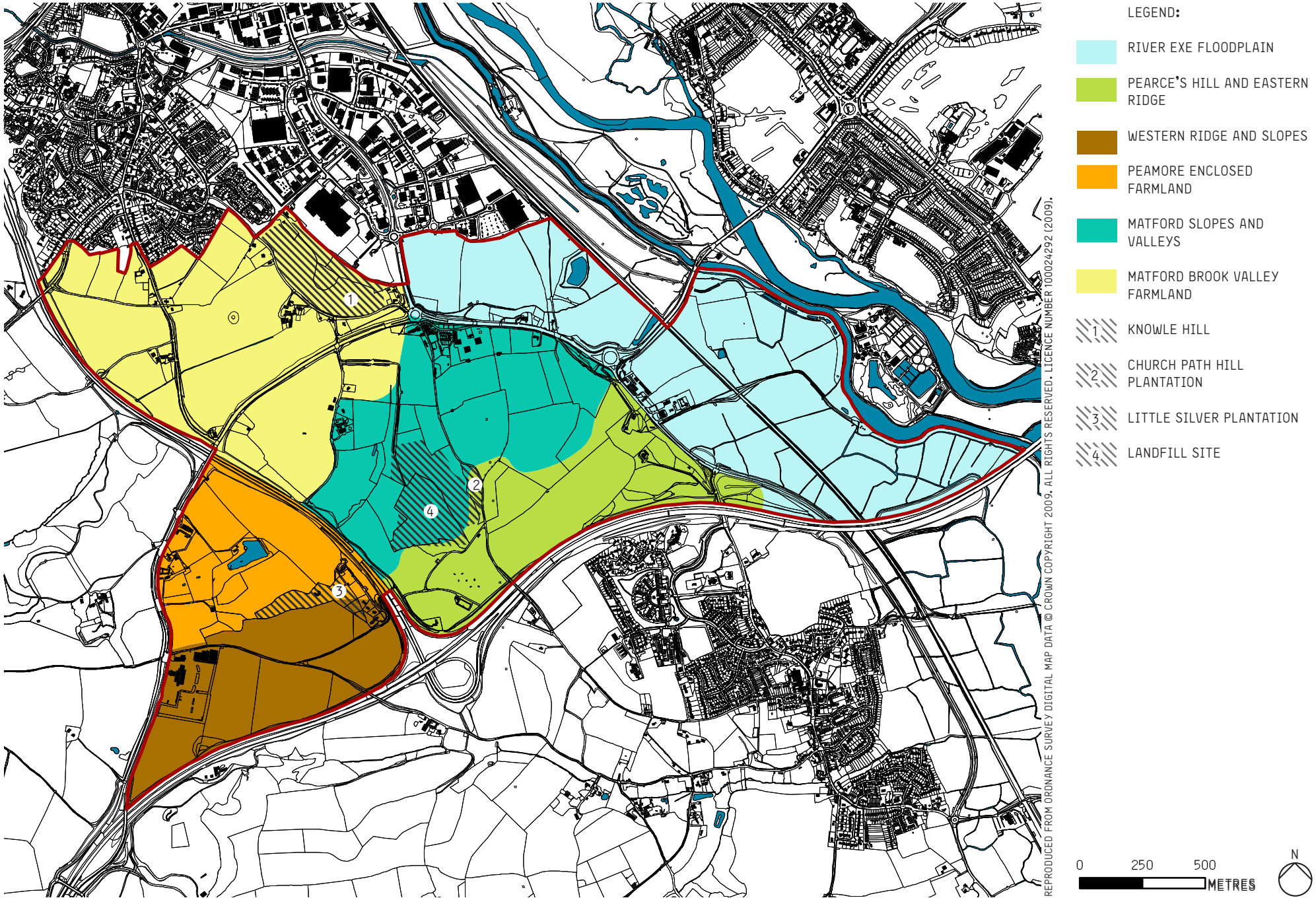
SLOPE ANALYSIS

2.2 SLOPE ANALYSIS

The slope analysis plan opposite shows how landform varies in steepness across the site, from gradients of 1:100 to steeper than 1:3. The steepness of the slope has a significant bearing upon the practicality and cost of development, with slopes of steeper than 1:6 deemed too steep to develop, and slopes of 1:10-1:6 also being expensive to develop. Those slopes of between 1:100 to 1:10 are considered to have the greatest development potential.

The site capacity of the masterplan study area will be greatly affected by the constraints of slope mentioned above, resulting in large areas being unavailable for development and other large areas requiring development that can generate a value sufficient to warrant the additional cost of construction of infrastructure and buildings.

Development on slopes of this nature can also create issues around accessible and inclusive design and therefore impact on the sustainability of neighbourhoods in these areas. However it is the ability of the topography to add to the identity of a place creating interesting urban form and layout with views of the landscape setting, that should encourage us to establish methods of design that can overcome any potential problems. The positives of living on sloping topography can outweigh any potential difficulties or viability issues.



LANDSCAPE CHARACTER AREAS

2.3 EXISTING LANDSCAPE CHARACTER

LANDSCAPE CHARACTER CONTEXT

The landscape character context of the study area is defined at a number of levels. **The National Character Areas** map of England, produced by the Countryside Agency in 2005, shows the study area lying within NCA 148: Devon Redlands, an area which stretches from the Teign Valley to the west and the Otter Valley to the east (www.naturalengland.org.uk/Images/jca148_tcm6-5475.pdf). The key characteristics of this large area are defined as follows:

- Soils derived from red Permo-Triassic sandstone and red-tinged cob buildings give the name to this character area.
- Hilly landscape of villages, hamlets, farmsteads, hedgebanks and winding lanes, cut through by steep-sided valleys with wide floodplains.
- Large woodlands confined mainly to steep valley sides with small, irregular broad leafed woods.
- Cob and thatch rural buildings.
- Extensive urban development, roads and railways on the lower valleys and coast.
- Open flood meadows with little tree cover in the lower valleys, extending to open saltmarsh on the coast.
- Distinctive area of Pebble Bed heaths in the east.
- Large parks and manor houses near the towns.

At a more local level, the **Teignbridge Landscape Character Assessment** (2009) identifies 18 Landscape Character Areas within the District and a more detailed breakdown of landscape character into Landscape Character Types. The study area lies within the 'Exe Estuary and Farmlands' LCA and within Landscape Character Types '3B: Lower Rolling Farmed and Settled Slopes' and '4B: Unsettled Marine Levels'. The distinctive characteristics of these landscape character areas and types are described fully in the landscape character assessment report (http://www.teignbridge.gov.uk/index.aspx?articleid=12588).

LOCAL LANDSCAPE CHARACTER

These area-based character assessments provide a broad context for understanding landscape character within the study area, but a more detailed assessment of local landscape character has been undertaken to inform the development of the master plan. This is summarized below.

In broad terms, the landscape of the study area can be divided into two main areas (as defined by the Teignbridge Assessment): the flat floodplain land along the west side of the River Exe; and the gently rolling landscape of minor valleys, rounded slopes and ridges of higher ground rising up above the floodplain to the south west. These two broad areas have been further sub-divided into 6 local landscape character areas, as follows and indicated in the plan opposite.

1. RIVER EXE FLOODPLAIN FARMLAND

This area is characterized by flat, low-lying farmland on the western side of the River Exe floodplain, with medium scale regular fields mostly under pasture, bounded by trimmed hedges or fences. Generally open character but some lines of trees along field boundaries interrupt views and create localized enclosure. Permanent and seasonal open water in ditches, streams and pools. Proximity of main roads, Matford Trading Estate and Exeter introduces urban influence and reduces tranquillity.

2. PEARCE'S HILL AND EASTERN RIDGE

This area is formed by the high point of Pearce's Hill and the flattish farmland that runs eastwards along the top of the ridge before falling steeply towards the Exe floodplain. The southern and eastern edges of this area are formed by the sheer cliffs of the M5 motorway and A30 trunk road cuttings, exposing the red-coloured sandstone which underlies this area. The steep slopes on the western side of Pearce's Hill are under pasture but the flatter land is typically large, regular arable fields bounded by trimmed hedges and a generally open, exposed character. The telecommunication masts and large blocks of woodland (including Church Path Hill Plantation) are prominent features of the ridge-top.

LANDSCAPE CHARACTER AREA 2, PEARCE'S HILL AND EASTERN RIDGE WITH M5 CUTTING

LANDSCAPE CHARACTER AREA 3, WESTERN RIDGE AND SLOPES (FOREGROUND)

LANDSCAPE CHARACTER AREA 4, PEAMORE ENCLOSED FARMLAND

LANDSCAPE CHARACTER AREA 5, MATFORD SLOPES AND VALLEYS (BACKGROUND) AND LANDSCAPE CHARACTER AREA 6, MATFORD BROOK VALLEY FARMLAND (MIDDLEGROUND)

LANDSCAPE CHARACTER AREA 6, MATFORD BROOK VALLEY FARMLAND

3. WESTERN RIDGE AND SLOPING FARMLAND

This area is the western extension of Pearce's Hill and ridgeline, physically severed from it by the A30 road cutting. Slightly lower in elevation and sloping gently south and westwards, this land is characterized by large arable fields with a very open character. The southern and western edges are defined by the A38 and A379 road corridors, which intrude upon its rural character, while the northern edge is contained by a ridge along which the Little Silver Plantation forms a distinctive landscape feature and encloses this area from land to the north.

4. PEAMORE ENCLOSED FARMLAND

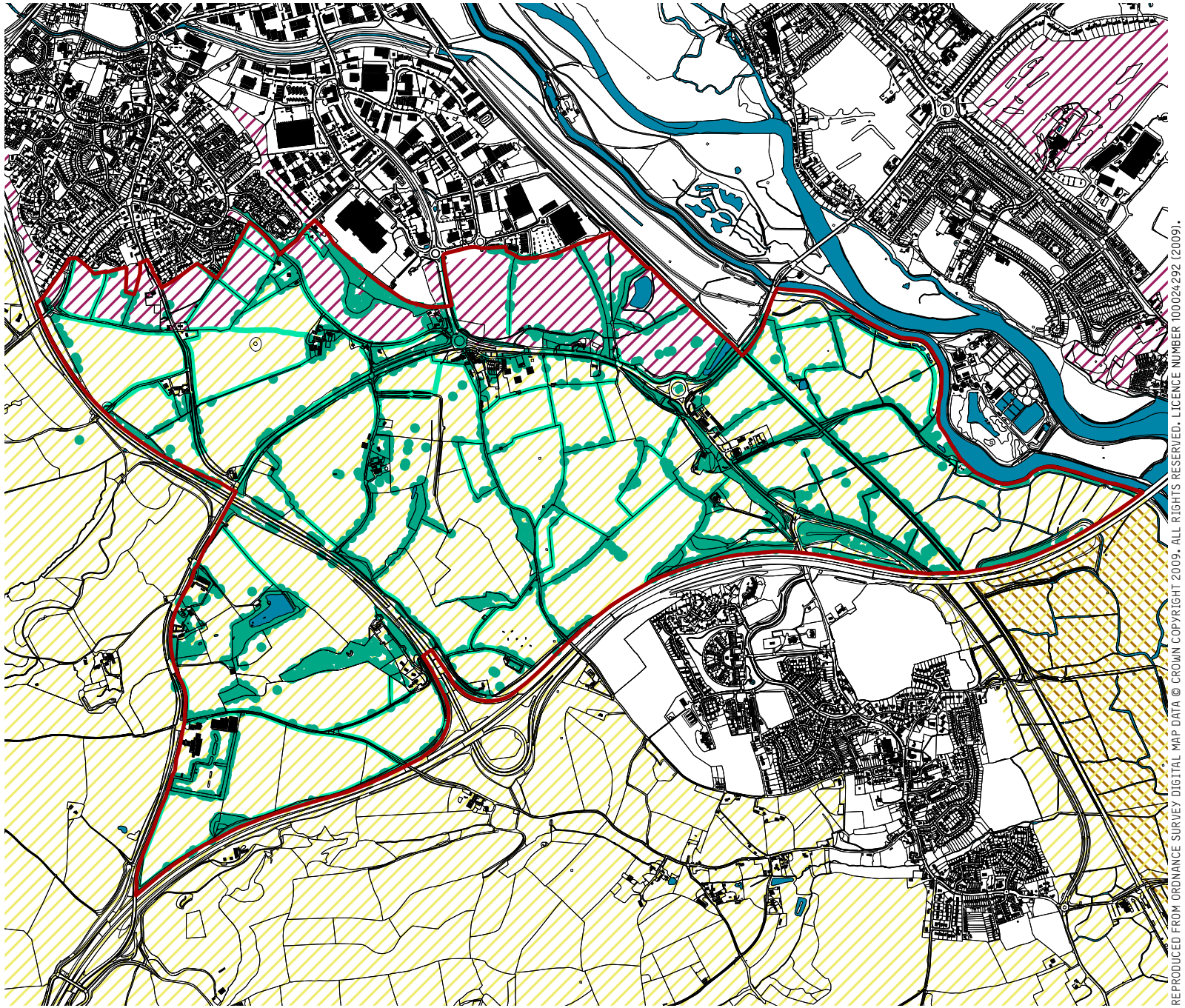
This land forms the northern side of the ridge from area 3 and has a very different and distinct character. It is characterized by a strong sense of enclosure and intimacy, created by large blocks of woodland and mature tree cover that evidently formed part of the estate of Peamore House to the west of the A379. The area retains a parkland character, with a large lake, ornamental planting and blocks of trees, providing strong contrast with the open sparsely-treed landscape to the south of the ridge. Despite proximity to main roads (it is bounded on two sides by the A30 and the A379) it retains a remarkably quiet, rural and unspoilt character. The area also contains the site of an ancient settlement.

5. MATFORD SLOPES AND VALLEYS

This area comprises an undulating complex of slopes and valleys that form the middle ground between the Exe floodplain to the north-east and the lower-lying valley landscape to the south of Alphington (LCA 6). The area is characterized by a patchwork of smaller scale pasture and larger-scale arable fields bounded by hedgerows. Some large blocks of woodland and strong lines of mature trees (such as the distinctive pines running north-east from Church Lane Hill Plantation) are prominent landscape features and create localized enclosure. The rural qualities of the landscape are affected by the far reaching views across Exeter, which are dramatic but have an urbanizing influence. The landfill site and access road, along with localized fly-tipping and the proximity of the A379, also intrude on the area's rural qualities.

6. MATFORD BROOK VALLEY FARMLAND

This area forms a shallow, gently sloping valley landscape on either side of the Matford Brook and is characterized by large, open arable fields, bounded by trimmed hedgerows. The brook itself is a relatively minor feature but there are other more distinct features within this area, including the prominent, tree-covered Knowle Hill in the north-east corner of this area, and strong lines of mature trees along the minor road linking the A379 with Alphington, along Markham Lane, and along field boundaries further to the west. The A379 bisects the valley and causes localised intrusion. Land to the north of the ridge is visually and physically separated from the main valley landscape and its character is influenced by its proximity to the built edge of Alphington.



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LEGEND:

- LANDSCAPE SETTING OF EXETER
- AREA OF GREAT LANDSCAPE VALUE
- COASTAL PRESERVATION AREA (CPA)
- EXISTING TREES/AREAS OF WOODLAND WITHIN THE SITE
- EXISTING HEDGEROWS WITHIN THE SITE

0 250 500 METRES

N

LANDSCAPE DESIGNATIONS AND SIGNIFICANT AREAS OF VEGETATION COVER

2.4 LANDSCAPE DESIGNATIONS

The study area lies outside land identified as nationally important, i.e. National Park or Area of Outstanding Natural Beauty. However, the Development Plans for Exeter City and Teignbridge District contain policies which recognize the importance of certain areas of landscapes at a local level, by virtue of their intrinsic quality or their role in defining the setting of settlements and maintaining the separation between them. Local landscape designations are currently being reviewed in Teignbridge through the preparation of the Teignbridge District Council Core Strategy. There are three such designations applying to the study area, as shown on the plan opposite and described below.

AREA OF GREAT LANDSCAPE VALUE (AGLV)

The majority of the study area lies within an Area of Great Landscape Value, a local designation applied to areas which have a discernible local character and whose landscape character and quality has a countywide significance. The AGLV designation covers a large proportion of Teignbridge District and within the designated area there is a general presumption against permitting development unless there are special circumstances and where this would not adversely affect the character of the locality. The adopted Teignbridge Local Plan (1996) contains 'saved' policies for Areas of Great Landscape Value, which are defined on the Proposals Map for that plan. These saved policies remain in force and are material for determining planning applications. However, Areas of Great Landscape Value are currently being reviewed through the emerging Teignbridge Core Strategy, which is programmed to be adopted in early 2013.

COASTAL PRESERVATION AREAS

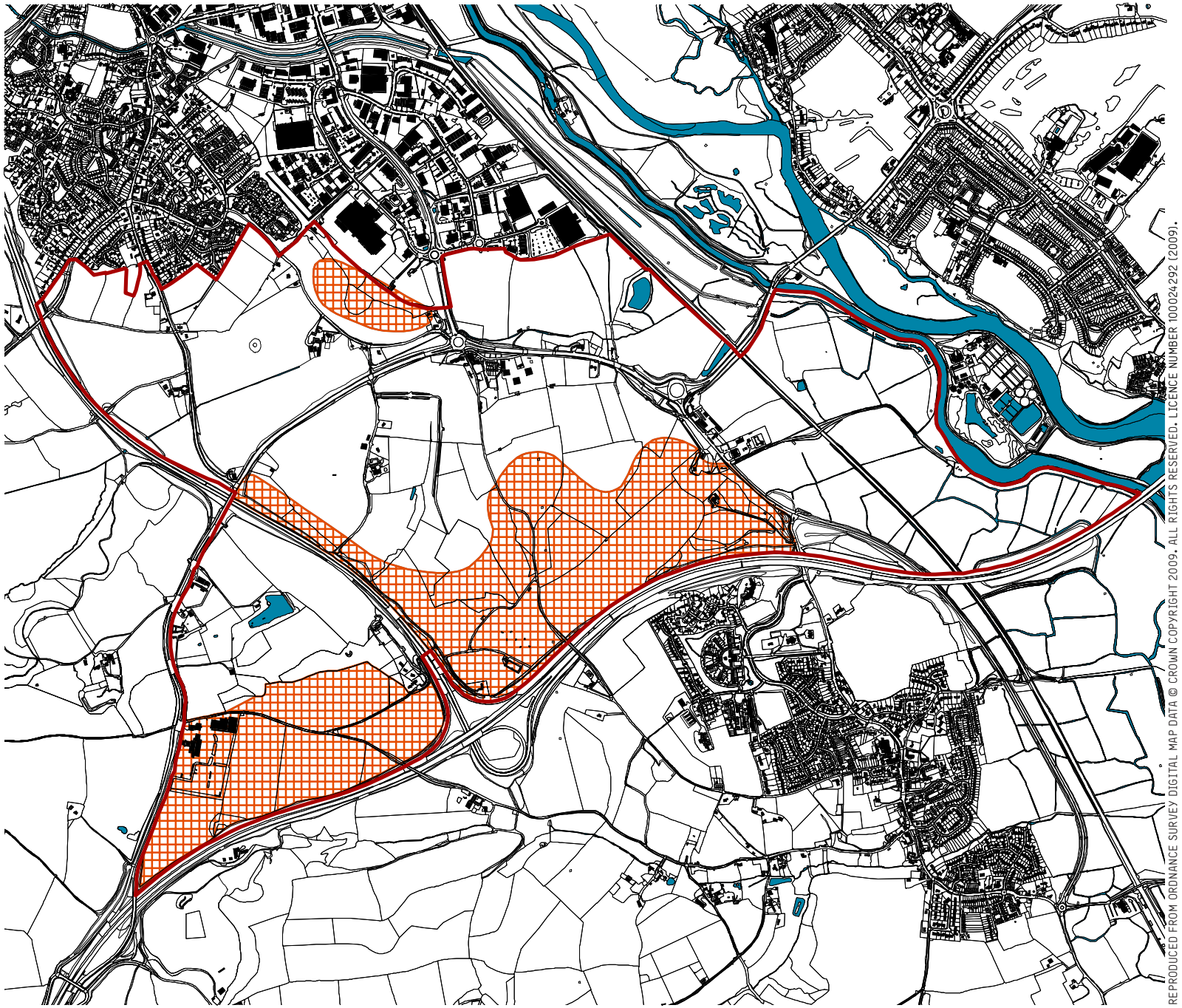
The adopted Teignbridge Local Plan (1996) includes specific policies for the long term protection of the Coastal Preservation Area, which is likely to be redefined as Undeveloped Coast through the emerging Teignbridge Core Strategy, which is programmed to be adopted in early 2013.

LANDSCAPE SETTING OF EXETER

To inform the Exeter City Local Plan 2004, the Council carried out a landscape appraisal of all open countryside in and around the City. Based on this appraisal, open land is identified which is to be protected from development because of its intrinsic merit and its contribution to the distinctive landscape setting of the City. Open land to the south and south-east of Alphington and the southern part of Matford Marshes comprise three inter-related areas of distinct character. The flat, open, low-lying, arable and pasture land of Matford Marshes provides a visual link between the wider flood plain to the south-east and the Matford Brook Valley. By contrast, the adjoining Knowle Hill, with its steeply wooded and arable slopes, is a major landscape feature marking the southern approach to the City. Just beyond Knowle Hill, the land that defines the southern boundary of Alphington is modern arable farmland which rises up to the Markham Lane ridge, enhancing the setting of Alphington and of the City. Local Plan Policy LS1 (currently saved) states that any development in these areas must maintain local distinctiveness and character. To inform the emerging Local Development Framework this issue was thoroughly reviewed in the 2007 Landscape Sensitivity and Capacity Study. The study assesses robustly the qualities of the landscape and identifies the extent to which each area has the capacity to accommodate development. This provides the detailed evidence that supports the continued protection of areas of landscape sensitivity, such as Knowle Hill, that provide the strategic landscape setting for the City. The character and local distinctiveness of Knowle Hill is protected in Policy CP16 of the adopted Exeter Core Strategy.

SIGNIFICANT TREES, WOODLAND AND HEDGEROWS

Established trees, areas of woodland and hedgerows present within the study area have been identified and are shown on the plan opposite. These are not landscape designations but valuable landscape features that should be subject to arboricultural assessment and retained where possible within the masterplan framework.



LEGEND:

AREAS OF HIGHER VISUAL SENSITIVITY

0 250 500 METRES

N

VISUAL SENSITIVITY

2.5 VIEWS AND VISUAL SENSITIVITY

A visual appraisal was undertaken to examine the visibility of the study area from surrounding areas, especially from the main road network and approaches to Exeter, and to identify key viewpoints and areas of high visual sensitivity. This appraisal has influenced the development of the masterplan, which aims to locate development principally within areas of lower visual sensitivity and to ensure that the important landscape setting of Exeter is protected.

GENERAL VISIBILITY

Topography plays a significant role in determining the visibility of different parts of the study area from surrounding areas. The most visually prominent parts of the study area are indicated on the plan opposite and comprise the upper slopes and top of the ridge of higher ground which visually separates the Exe floodplain from areas to the south-west:

- The top and north-eastern flanks of the ridge (Landscape Character Area 2) are visible from areas to the east, particularly from the elevated section of the M5 motorway as it crosses the Exe floodplain and from the A379 (e.g. at Countess Wear Bridge) and parts of the floodplain itself.
- The top of the ridge and its western slopes (LCAs 2 and 3) are also highly visible in approaches from the west along the M5 corridor.
- The upper parts of the northern flanks are also visible from the A30 corridor and some viewpoints on the edge of Alphington village and Marsh Barton to the north.

As well as being highly visible, this prominent ridge forms an important part of the landscape setting of Exeter and development in this location would be undesirable. Knowle Hill, an important local landscape feature, is also quite prominent in views from within the immediate local area and is unsuited to development.

The remainder of the study area is less visually exposed and sensitive, largely because of the screening effects of rolling landform and blocks of vegetation which interrupt, or partially screen, views from the surrounding areas:

- The northern part of the triangle of land bounded by the A379, A30 and A38 (LCA 4) has a small-scale pattern of fields and is enclosed by mature vegetation with very limited visibility.
- The valley landscape to the south of Alphington (LCA 6) is largely hidden from views from the A30 and from Alphington itself by intervening landform, vegetation and built form, although there are some views across this area from parts of the A379 between the A30 overbridge and the roundabout at Matford.
- The lower northern flanks of the ridge, to the south of the A379 (LCA 5) are largely screened by landform and blocks of vegetation, with glimpsed, rather than open, views into these areas.

Development in these areas would have a much more limited impact on views from roads and settlements in the surrounding area.

KEY VIEWS

A number of key views have been chosen which represent the extent of visibility of the study area from different parts of the surrounding area. These are illustrated in the following pages with a brief analysis of the significance of these views in terms of the development of the masterplan for South West Exeter.

VIEW 1: FROM BEHIND A30

View looking south-east from minor road between Shillingford Abbot and Alphington to south of A30:

- Triangle of land within western part of study area (LCA 3 and 4) completely hidden from view behind wooded ridge to right of view;
- Western side of valley landscape (LCA 6) visible but majority of this area obscured behind vegetation;
- Parts of north-east facing slopes to the west of Church Path Hill plantation visible, but ridge top and eastern parts of LCA 5 and 2 obscured by vegetation;
- Predominantly rural, unspoilt view but some intrusion from A30 and associated structures;
- Relatively small number of viewers affected (view only available from gateway by users of minor road, not from properties, public rights of way etc).

Masterplan implications:
While development on north-facing slopes immediately to the north of the A30 would be visible, the majority of the study area is hidden from view and the number of viewers is very limited from this viewpoint. Any potential impact on the view would be reduced by avoiding development on ridge top and integration of new development within a strong landscape structure on lower slopes.

VIEW 1 LOCATION

VIEW 1

VIEW 2: FROM CANAL COUNTESS WEAR BRIDGE

View looking south-west from A379 at Countess Wear Bridge:

- Majority of study area obscured from view by landform and vegetation
- Part of the upper, north-east facing flanks (LCA 5) visible but broken up into small areas and partially obscured by intervening vegetation;
- Rural, green backdrop but quality of the view affected by road and other urban influences in foreground;
- Large number of viewers affected, including users of A379 and public rights of way along canal.

Masterplan implications
The majority of the study area is hidden from view or partially screened by vegetation so the potential visual impact of development is very limited, especially if it is restricted to the less visible lower slopes and avoided within the upper part of the field immediately below Church Path Hill Plantation.

VIEW 2 LOCATION

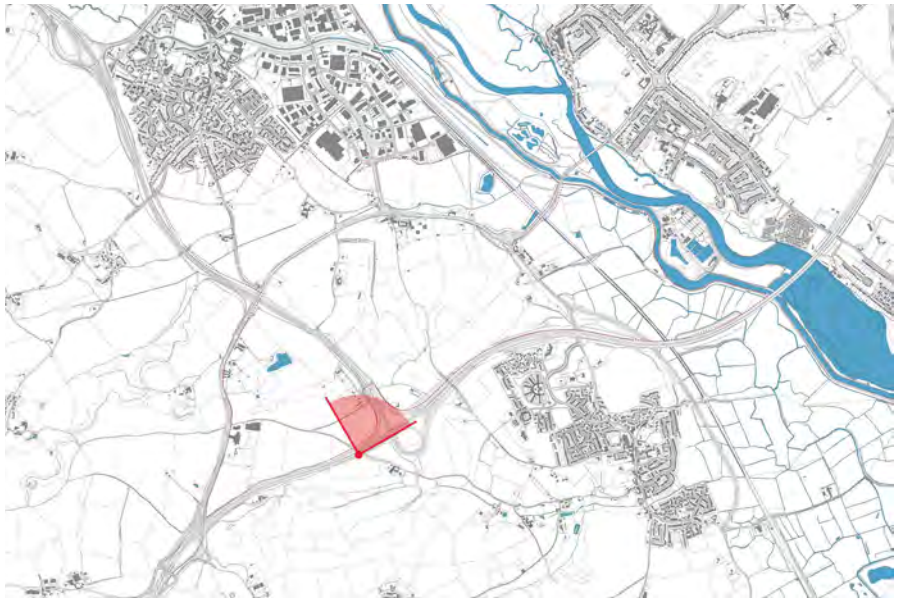
VIEW 2

VIEW 3: FROM DAYS POTTLES LANE, ON BRIDGE OVER A38

View looking north from minor road (Days Pottles Lane) on bridge over A38:

- Clear view of ridge top and slopes of Pearce's Hill (western extremity of LCA 2) but remainder of study area obscured from view by landform;
- View dominated by intrusive influence of A38 and associated lighting, signage, telecommunication masts etc;
- Relatively small numbers of viewers affected from this particular viewpoint but the view is similar (but at a higher elevation) to that experienced by large number of transient viewers travelling east at speed along the A38.

Masterplan implications:
Despite existing urban intrusion of roads, masts etc., development on the west-facing slopes of Pearce's Hill would be highly prominent and would significantly change the character of this view and the landscape setting of Exeter when approached from the west – development in this area should therefore be avoided. No other parts of the study area are visible from this viewpoint.



VIEW 3 LOCATION

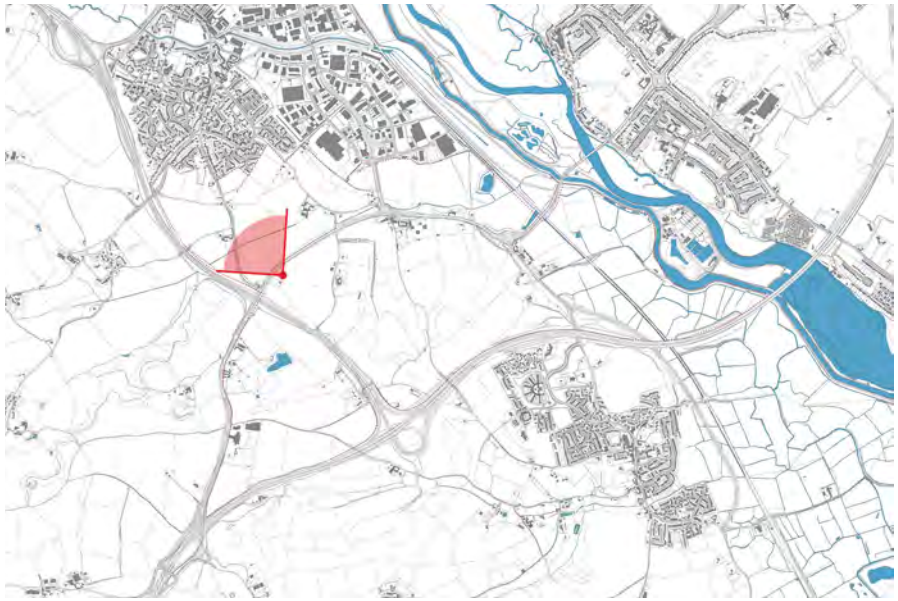
VIEW 3

VIEW 4: FROM A379 TOWARDS ALPHINGTON

View over hedge from A379 looking north:

- Open view across northern part of valley landscape (LCA 6) towards Alphington. The village itself and farmland immediately adjacent is hidden behind ridge and strong vegetation along Markham Lane;
- Essentially rural, unspoilt view although built form of Exeter evident in background, beyond ridge;
- Moderate numbers of viewers affected, but viewed intermittently between hedgerow vegetation by road users travelling at some speed.

Masterplan implications:
Potential visual impacts within this area could be reduced by concentrating development on land to the north of Markham Lane which is mostly screened from view, and developing at low densities elsewhere within a strong framework of greenspace along the valley floor and the more visible upper slopes to the south of Markham Lane.



VIEW 4 LOCATION

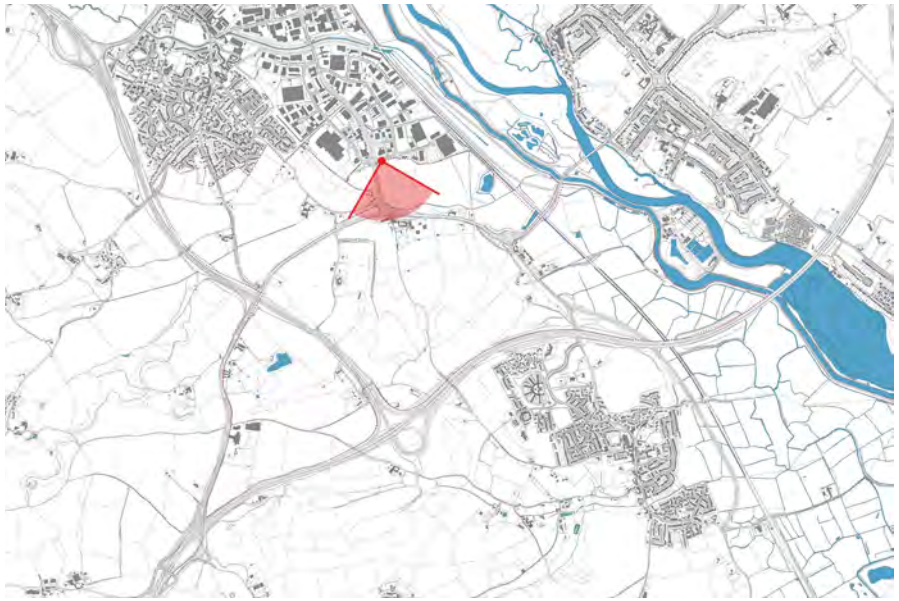
VIEW 4

VIEW 5: FROM MATFORD BUSINESS PARK

View from local access road on edge of Matford Business Park, looking south across the proposed extension to Matford Business Park:

- Open views across northern parts of floodplain (LCA 1), although areas of floodplain to the east obscured behind vegetation;
- Part of north-facing flanks of ridge (LCA 5), to the east of Matford Lane, prominent in view;
- Top of ridge and other parts of study area obscured by vegetation and landform;
- Predominantly rural view but some urbanising influence from pylons and local roads;
- Moderate number of viewers affected, primarily users of the B3123 and other local roads travelling south out of the trading estate towards the Matford roundabout.

Masterplan implications:
Commercial development (already permitted) within the floodplain will alter the character of this view, although viewer perceptions are heavily influenced by the context of the Matford Business Park immediately to the north. Further visual impact could be minimized by concentrating development on lower slopes and avoiding the most visually prominent upper slopes below Church Path Hill Plantation.



VIEW 5 LOCATION

VIEW 5

VIEW 6: FROM M5 MOTORWAY

View from the hard shoulder of the east-bound carriageway of the M5 motorway as it crosses the Exe floodplain on an elevated section:

- View approximates to that experienced by users of M5 motorway travelling west;
- Only small part of study area visible but far eastern end of ridge (LCA 2) prominent in views from this direction;
- Predominantly rural, unspoilt view although some urbanizing influence from M5 itself, important landscape backdrop to Exe Valley;
- Large numbers of viewers affected although views are transient and experienced at high speed.

Masterplan implications:
The great majority of the study area is hidden from view behind the ridge and vegetation. If development on the eastern end of the ridge is avoided, there would be no impacts on views from this direction.

VIEW 6 LOCATION

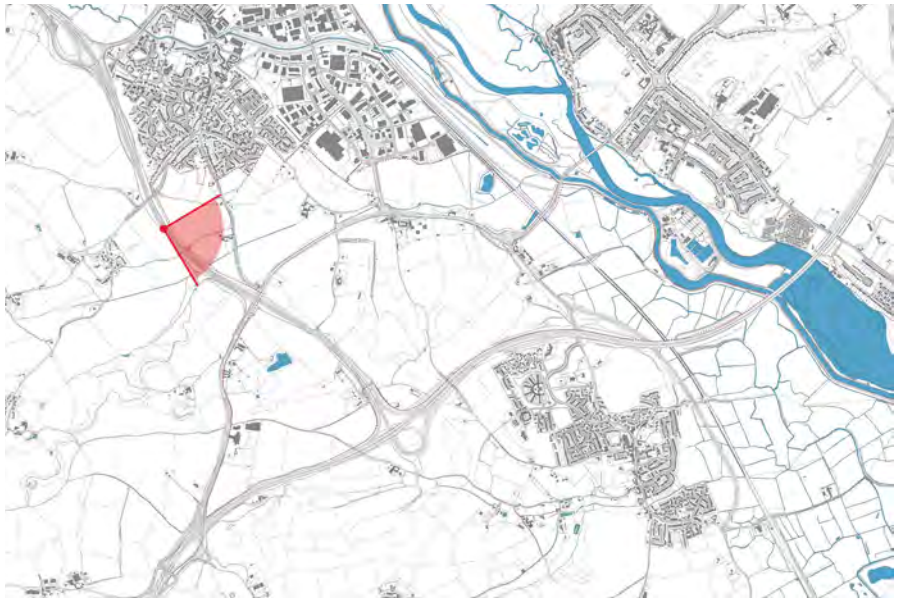
VIEW 6

VIEW 7: FROM A30

View from A30, travelling and looking south-east:

- Views of study area fragmented and partially obscured by vegetation;
- Most visible parts of study area are north-facing slopes to the west of Matford Lane (LCA 5), viewed at some distance, and part of the north-west facing slopes (LCA 5 and 6) in the middle ground;
- Predominantly rural, unspoilt view although some urbanizing influence from A30 itself;
- Relatively large numbers of viewers affected although views are transient and experienced at high speed by users of the A30 travelling south.

Masterplan implications:
Existing vegetation and landform effectively break up views of the study area from this viewpoint and visual impacts could be further reduced by integrating new development within a strong new landscape infrastructure, particularly in areas closest to the A30, and avoiding development on the skyline.



VIEW 7 LOCATION

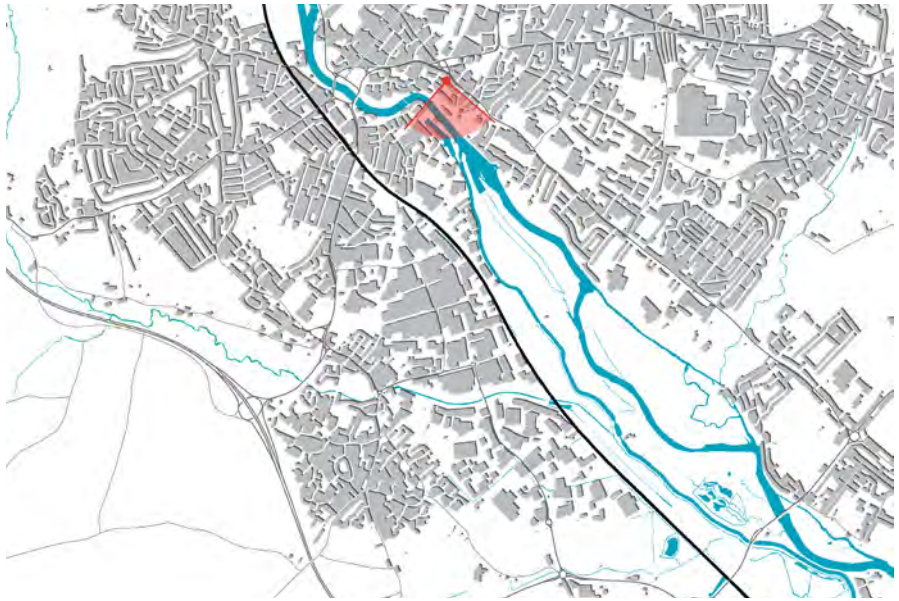
VIEW 7

VIEW 8: FROM COLLETON CRESCENT

View from the road and public green space at Colleton Crescent, looking south approximately 4 kilometres distant:

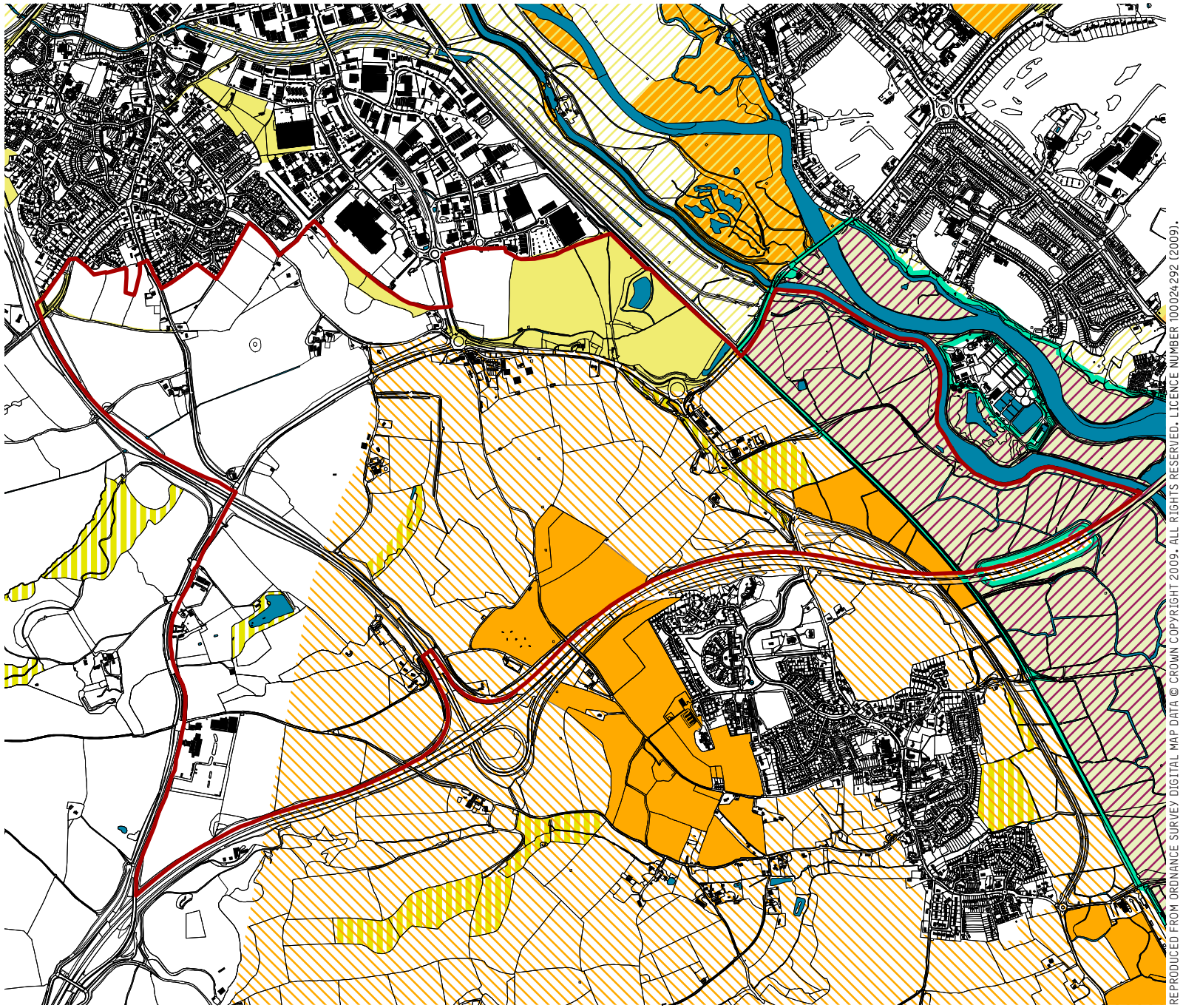
- Upper north-facing flanks of ridge (LCA 5) visible in this long distance view,
- Other parts of study area obscured by intervening vegetation and buildings;
- Quality of view influenced by development in foreground and pylons, but study area forms part of the undeveloped green backdrop to the city;
- Relatively limited numbers of viewers affected from this residential street although includes occupants of properties along Colleton Crescent with expansive views from windows on upper floors. Views not available from public areas along Quayside some distance below.

Masterplan implications:
The study area is mostly hidden from view but the upper slopes are prominent, albeit distant, elements in the green backdrop to Exeter. Any potential impact could be avoided by locating development on the lower slopes, avoiding the most prominent open land below Church Path Hill Plantation.



VIEW 8 LOCATION

VIEW 8



LEGEND:

- SSSI
- RAMSAR
- SPECIAL PROTECTION AREA (SPA)
- BIODIVERSITY ENHANCEMENT AREA (SUBJECT TO REVIEW)
- COUNTY WILDLIFE SITES (CWS)
- SITES OF NATURE CONSERVATION IMPORTANCE (SNCI)
- SITES OF LOCAL IMPORTANCE FOR NATURE CONSERVATION (SLINC)
- OTHER SITES OF WILDLIFE INTEREST
- STUDY SITE BOUNDARY

0 250 500 Meters

N

ECOLOGICAL DESIGNATIONS

2.6 ECOLOGICAL DESIGNATIONS

There are a number of ecological designations within the vicinity of the study area, as shown on the plan opposite. These include both statutory designations of national/international importance for nature conservation, and non-statutory sites of county or local wildlife value.

STATUTORY DESIGNATIONS

The exceptional wildlife significance of the Exe Estuary is recognised by a number of international and national designations, including: designation as a wetland of international importance under the Ramsar Convention; designation as a Special Protection Area (SPA), a site of European importance for bird conservation under the EC Birds Directive; and Site of Special Scientific Interest SSSIs, designated under the Wildlife and Countryside Act 1981. These designations extend across the floodplain of the Exe up as far as the A379, including that part of the study area which lies to the west of the railway line. The study area also lies close to the Dawlish Warren Special Area of Conservation (SAC), a site of European conservation importance containing listed habitats or species, designated under the terms of the EC Habitats Directive.

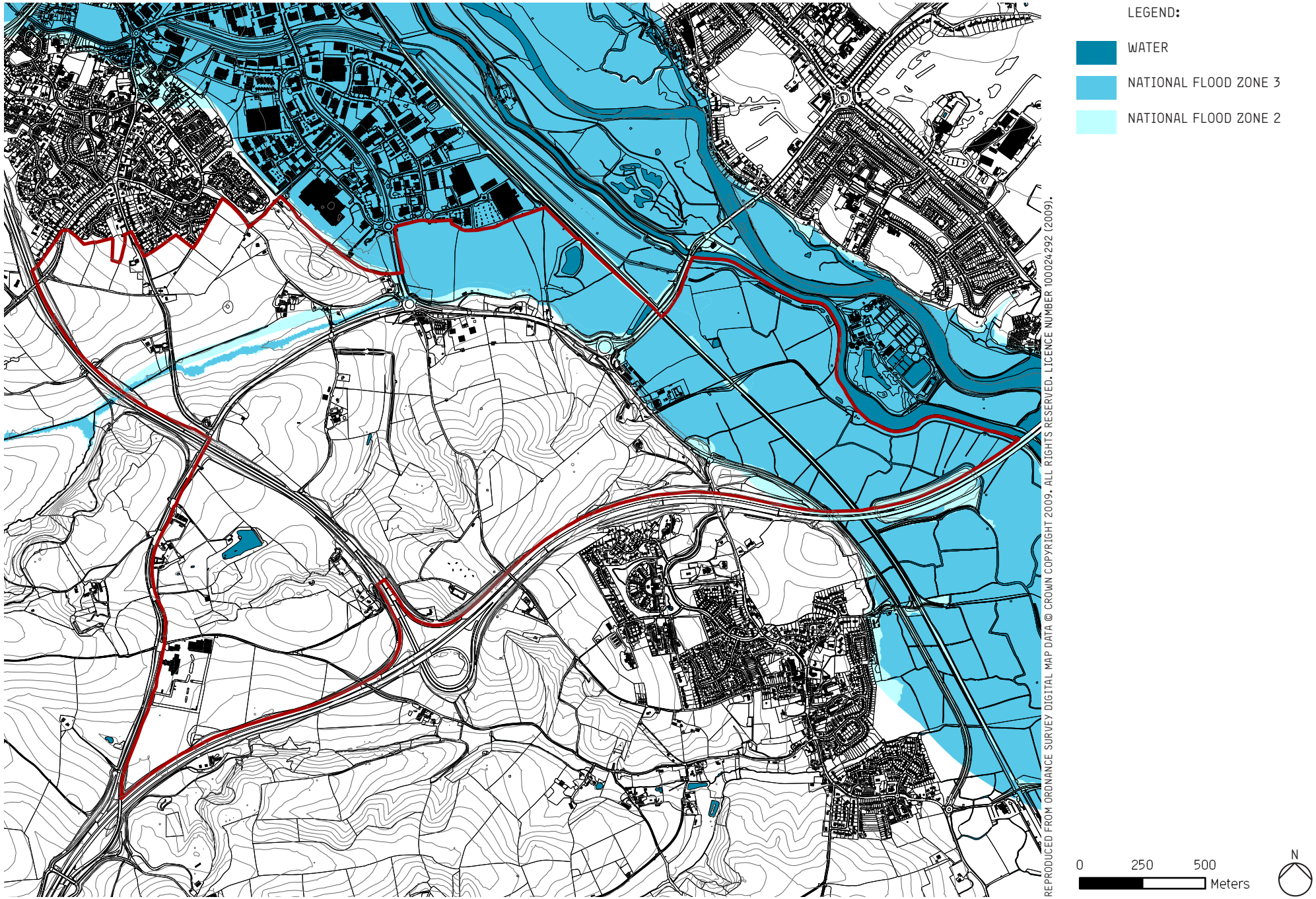
The nature conservation interest of these areas receives the highest level of protection under international, European and UK legislation. Development in these areas would not be permitted and any potential indirect impacts of development in neighbouring areas needs to be carefully assessed, such as sewage and surface water disposal, noise and light pollution and increased recreational use of the SPA/SAC. All effects must be fully mitigated or compensated for.

NON-STATUTORY DESIGNATIONS

These include other sites of nature conservation value that are recognized at a county or district level, known variously as County Wildlife Sites (CWS), Sites of Nature Conservation Importance (SNCI), Other Sites of Wildlife Interest (OSWI) and Sites of Local Interest for Nature Conservation (SLINC). Development, including Public Open Space uses, is generally inappropriate in these areas and they should be retained and protected within the masterplan.

The study area includes part of a larger existing County Wildlife Site comprising open farmland along the ridge at Beacon Hill which extends southwards around the western edge of Exminster. This area supports Britain's northernmost breeding population of Cirl Buntings, a protected species that has suffered a massive decline in numbers and range within GB in recent decades. The Cirls at Exminster have special interest and potential and it is hoped that, if this population can be safeguarded and encouraged to expand, birds could gradually spread north and east from here. Opportunities for biodiversity enhancement, particularly to encourage the expansion of the Cirl bunting population as part of a national recovery programme, are therefore promoted within this general area.

The proposed masterplan capacity and framework plans are shaped by the current designations and the need to protect and enhance biodiversity in the study area and beyond. This comes in the form of limiting development to less sensitive areas and through the retention of existing habitat and creation of new habitat within the development. As applications for development come forward they will need to address the current designations and provide further ecological investigation and studies to support their proposals and meet the expectations and requirements of the masterplan frameworks.



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NATIONAL FLOOD ZONES AFFECTING THE SITE/STUDY AREA

2.7 FLOODING AND SURFACE WATER

FLOODING

The South West Exeter study area lies north and south of the A379 and west of the B3123 (Bad Homburg Way), with the A30 forming the western boundary. The development could potentially accommodate approximately 45 hectares of new impermeable surfaces. It is predominantly a "greenfield" site and largely straddles the Matford Brook.

The Strategic Flood Risk Assessment (SFRA) for Exeter (2008) states that the Matford Brook is a minor watercourse that flows into the River Exe to the south of the Alphin Brook. Its lower reaches are connected to a series of open drains and ditches that drain the low lying industrial/commercial area. The Matford Brook is not considered to pose any significant flood risk to most of the lower catchment although a large proportion of the catchment is shown to be within the indicative floodplain, (see flood zone plan opposite and figures 2,3 & 4). This floodplain has been derived assuming that the defences along the Alphin Brook and the River Exe do not exist. The lower reaches of the Alphin Brook are contained within a flood channel that offers a standard of protection over and above a return period of 1 in 200 years. This is not to say that the catchment is not at risk from flooding. The Flood Zone 3b (functional floodplain) maps illustrate that the southeast corner of the catchment remains at significant risk from flooding and should only be considered for limited types of development.

FIGURE 2 - MATFORD BROOK CATCHMENT AND FLOOD ZONES (SOURCE: EXETER SFRA)

KEY:
- LEGISLATIVE BOUNDARY
- MATFORD BROOK CATCHMENT
- FLOOD ZONE 2
- FLOOD ZONE 3

Notes:
- Flood Zone 1 = Little or no risk
- Flood Zone 2 = Low to medium risk. Probability of fluvial flooding is 0.1 – 1% (1:100-1:1000) and probability of tidal flooding is 0.1 – 0.5% (1:200-1:1000)
- Flood Zone 3 = High risk of flooding. Probability of fluvial flooding is 1% (1:100) or greater and probability of tidal flooding is 0.5% (1:200) or greater. EA Flood Zone 3a = Developed areas of Flood Zone 3. EA Flood Zone 3b = Functional Floodplain

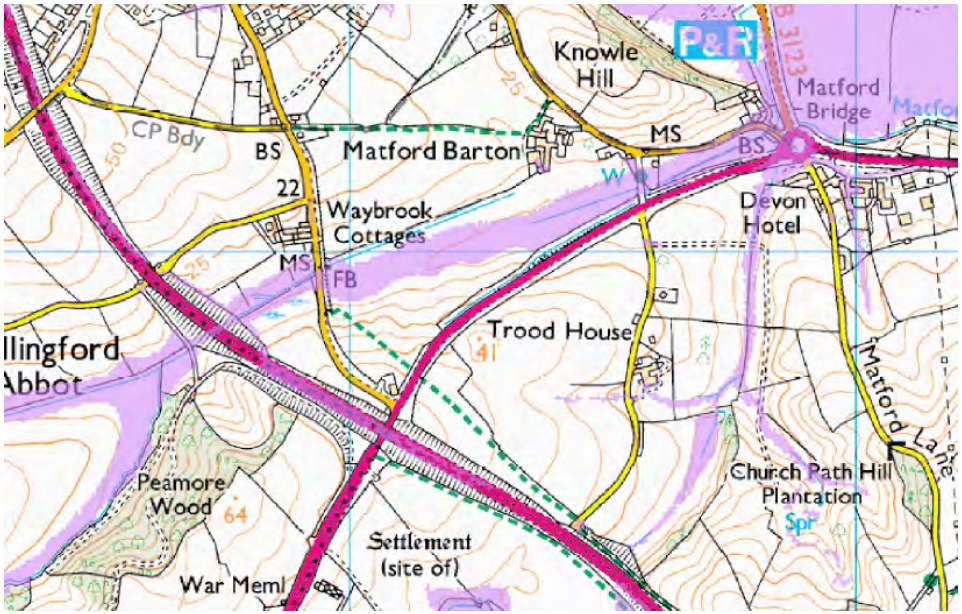


FIGURE 3 – MATFORD BROOK CATCHMENT, AREAS SUSCEPTIBLE TO FLOODING

KEY:
AREAS SUSCEPTIBLE TO FLOODING

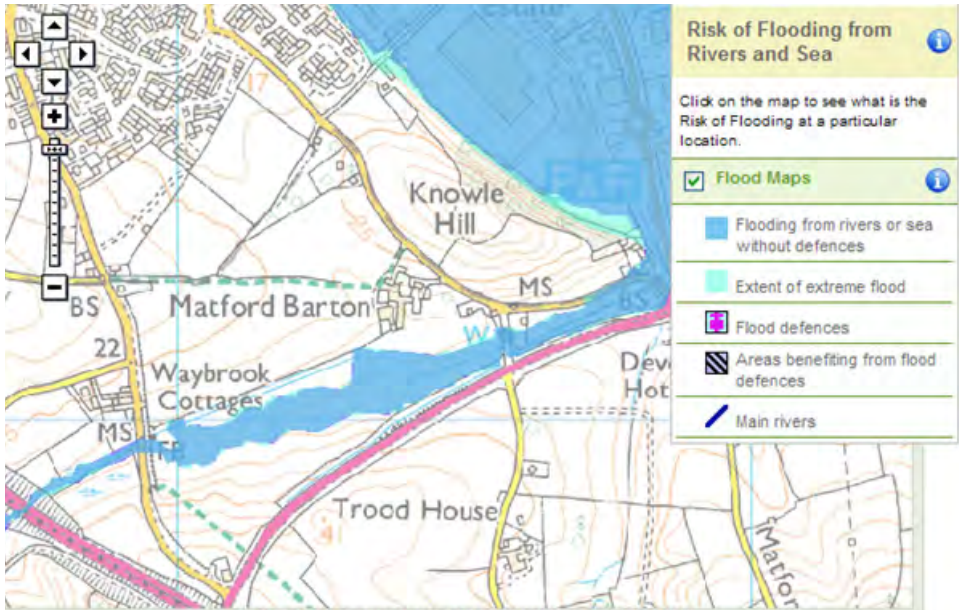


FIGURE 4 – MATFORD BROOK FLOOD RISK MAP (SOURCE: ENVIRONMENT AGENCY WEB SITE)

Notes:

- Dark blue shows the area that could be affected by flooding, either from rivers or the sea, if there were no flood defences. This area could be flooded:
  - from the sea by a flood that has a 0.5 per cent (1 in 200) or greater chance of happening each year.
  - or from a river by a flood that has a 1 per cent (1 in 100) or greater chance of happening each year.
- Light blue shows the additional extent of an extreme flood from rivers or the sea. These outlying areas are likely to be affected by a major flood, with up to a 0.1 per cent (1 in 1000) chance of occurring each year.
- The two colours show the extent of the natural floodplain if there were no flood defences or certain other manmade structures and channel improvements.

Planning policy statement 25 (PPS 25), development and flood risk (March 2010),

states that the effect of development will generally reduce permeability of at least part of the site. This changes the site's response to rainfall. Without specific measures, the volume of water that runs off the site and the peak run-off flow rate is likely to increase. Inadequate surface water drainage arrangements in new development can threaten the development itself and increase the risk of flooding to others. To manage flood risk in new developments, appropriate surface water drainage arrangements are required, to manage surface water and the impact of the natural water cycle on people and property.

The effective disposal of surface water from development is a material planning consideration in determining proposals for the development and use of land.
Surface water arising from a developed site should, as far as is practicable, be managed in a sustainable manner to mimic the surface water flows arising from the site prior to the proposed development, while reducing the flood risk to the site itself and elsewhere, taking climate change into account. This should be demonstrated as part of a flood risk assessment.

Discussions with the Environment Agency in April 2011 identify that there should be no development in the valley floor of the Matford Brook and that flood levels and extents will need to be defined by modelling and agreed with the Environment Agency. There are currently significant flood storage areas in the valley of the Matford Brook, part of which is currently piped. There are also other areas susceptible to flooding to the east of Trood House (see fig 3), which will need consideration. Alternatively, the EA may take a pragmatic approach and waive hydrological modelling, provided a sufficient and clearly defined flood channel can be established and maintained free from development.

The Environment Agency will require a Flood Risk Assessment (FRA) and drainage strategy to be prepared prior to and as part of the formal planning process to show that there is no increase in flood risk to receiving waters up to the 100 year return storm event, including for 30% climate change. The developed situation will be required to mimic the existing greenfield runoff adopting SuDS. It will also be required to show that there is no risk from fluvial or tidal events. Design for exceedance will also require consideration, whereby flooding in excess of design storms has free discharge to receiving waters without causing hazard.

A comprehensive approach to development should ensure that there is no increase in flood risk, even in the short term. Ideally the drainage strategy should be put in place in advance of any development coming forward. However, if the development phasing does not achieve this, temporary or interim measures may need to be devised to ensure that downstream property is not put at risk.

SURFACE WATER DRAINAGE

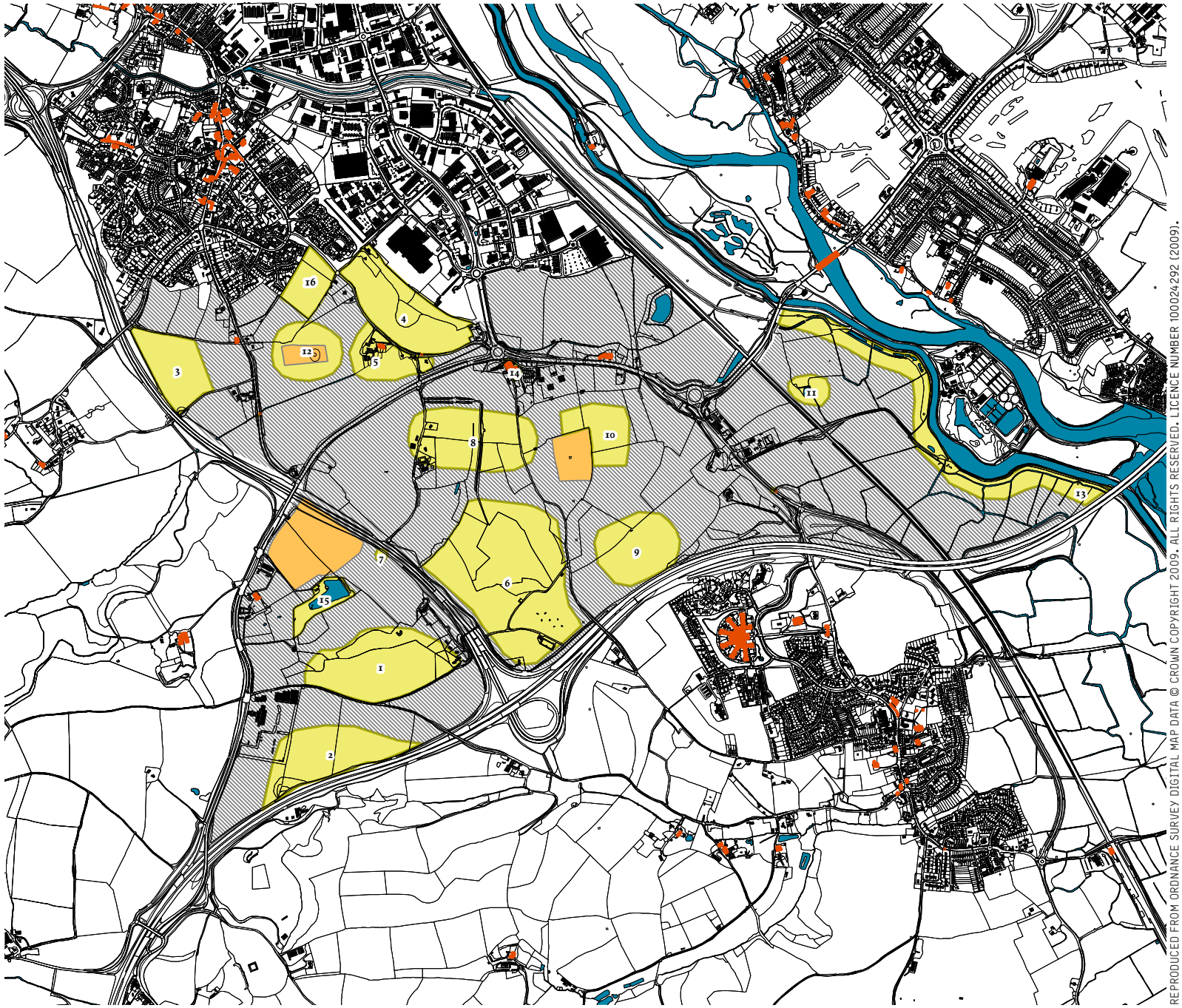
Sustainable Drainage Systems (SuDS) will be required to manage flooding and surface water drainage to mimic existing runoff conditions prior to entering receiving waters and options should include:

- source control measures including green roofs, rainwater recycling;
- infiltration devices to allow water to soak into the ground, that can include individual soakaways and communal facilities;
- filter strips and swales, which are vegetated features that hold and drain water downhill mimicking natural drainage patterns;
- filter drains and porous pavements to allow rainwater and run-off to infiltrate into permeable material below ground and provide storage if needed; and
- basins and ponds or underground storage devices, to hold excess water after rain and allow controlled discharge that avoids flooding.

Adequate space for SuDS needs to be made available at the master-planning stage, but many of these features can be incorporated throughout the site as green-space features and facilities, typically with the larger features such as ponds at the downstream end of the site. Public open spaces such as sports areas can also be used as flood overflow and storage facilities in more extreme events. Although above-ground features can require more space, they are considerably cheaper to construct and easier to maintain.

Opportunities for infiltration drainage will need to be investigated at this site, which will require on-site testing as part of a flood risk assessment.

The issue of adoption of stormwater drainage features will need consideration. South West Water will normally adopt systems of road and roof storm drainage, but not normally ground water or overland run-off. A site management plan may be required for the maintenance of any un-adoptable systems.



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LEGEND:

LISTED BUILDINGS

SCHEDULED MONUMENTS

AREA OF HIGH ARCHAEOLOGICAL POTENTIAL. THE FIELDSYSTEM AT THE EASTERN PART OF THE SITE HAS BEEN CHARACTERISED AS BEING OF PROBABLE MEDIEVAL DATE BY THE HISTORIC LANDSCAPE CHARACTERISATION PROJECT

1 AREA WHERE PREHISTORIC ACTIVITY IS KNOWN BY THE PRESENCE OF CROPMARKS IDENTIFIED THROUGH AERIAL PHOTOGRAPHY

2 SITE OF WWII GUN BATTERY AND PREHISTORIC FUNERARY MONUMENT IDENTIFIED BY AERIAL PHOTOGRAPHY

3 AREA OF CONCENTRATED PREHISTORIC ACTIVITY DEMONSTRATED BY CROPMARKS IDENTIFIED BY AERIAL PHOTOGRAPHY

4 THIS AREA CONTAINS EVIDENCE OF PREHISTORIC SETTLEMENT IDENTIFIED BY AERIAL PHOTOGRAPHY

5 AREA WHERE ARCHAEOLOGICAL EVIDENCE ASSOCIATED WITH THE POST-MEDIEVAL SETTLEMENT AT MATFORD BARTON, MATFORD MILL AND KNOWN PREHISTORIC ACTIVITY WILL SURVIVE

0 250 500 METRES

N

ARCHAEOLOGICAL FEATURES

LEGEND:

6 AREA WHERE ARCHAEOLOGICAL INVESTIGATIONS IN ADVANCE OF THE EXPANSION OF THE LANDFILL SITE HAVE DEMONSTRATED THE PRESENCE OF PREHISTORIC SETTLEMENT AND FUNERARY ACTIVITIES

7 AREA WHERE A PREHISTORIC FUNERARY MONUMENT HAS BEEN IDENTIFIED THROUGH AERIAL PHOTOGRAPHY

8 THIS AREA CONTAINS TWO PREHISTORIC ENCLOSURES IDENTIFIED THROUGH AERIAL PHOTOGRAPHY

9 AREA WHERE CROPMARKS HAVE INDICATED THE PRESENCE OF PREHISTORIC SETTLEMENT

10 THIS AREA CONTAINS CROPMARK EVIDENCE OF PREHISTORIC ACTIVITY

11 SITE OF ONE OF BRUNEL'S ATMOSPHERIC RAILWAY ENGINE HOUSES

12 AREA CONTAINING A LINEAR CROPMARK AND OTHER FEATURES THAT MAY BE ASSOCIATED WITH THE SCHEDULED BARROW CEMETERY

13 THIS AREA LIES ADJACENT TO THE HISTORIC EXETER CANAL AND REMAINS ASSOCIATED WITH ITS USE SURVIVE IN THIS AREA

14 MATFORD HOUSE MAY BE THE SITE OF MATTEFOD, HELD IN THE TWELFTH CENTURY BY ROGER LE BOTER

15 FISH POND MARKED ON LATE 19TH CENTURY OS MAP

16 AREA CONTAINING POSSIBLE PREHISTORIC RING DITCHES AND FIELD SYSTEM

2.8 HERITAGE

The mapping opposite indicates that the whole study area has significant heritage potential which could come to light during further investigation before or during any development. It indicates areas where there is known heritage assets or areas of interest, listed buildings and the location of the three Scheduled Monuments (SMs) contained within the study area. The mapping is not however based on a comprehensive survey, and other areas of interest are likely to be present in addition to those shown.

LDA Design and the client team at TDC have worked closely with the ECC and DCC Archaeology teams and English Heritage to establish the significance and potential impact of the known and unknown heritage aspects of the study area. A study of the area has also been undertaken by AC Archaeology entitled Archaeology and cultural heritage assessment, field walking and geophysical survey. We have held working meetings including an on-site tour of the SMs with English Heritage where we were able to walk the sites of the monuments and their environs and establish a method for addressing and incorporating them with any future development.

During the course of our meetings and ongoing discussions of masterplanning proposals, two important factors emerged for the successful relationship between heritage, archaeology and the future development of the study area. These were the successful protection and incorporation of the SMs and the need for ongoing investigation, recording and protection of the sites heritage going forward prior to and during development.

SCHEDULED MONUMENTS

As highlighted there are three Scheduled Monuments (SMs) on the site. Below is a brief description of how each is to be incorporated within proposed development:

- The Scheduled Monument to the north of the A379. Barrow cemetery (monument ref: 10625) - at least one surviving as a definite raised area

Following discussions on site it was suggested that the barrow nature of this monument should be afforded sufficient space to allow the known and any future discovery to be protected and importantly viewed within its context. Therefore the monument is to be incorporated within an large area of informal open space as part of the Matford Valley Park and green space with care taken to avoid disruption

from park related infrastructure, paths lights etc, providing as natural a setting as possible. This may also include a wildlife/nature garden as part of the primary school proposed next to the monument site. The monument site will also be protected or separated from the residential development by the existing green lane pedestrian/cycle route from which the monument can also be viewed.

- The Scheduled Monument to the south of the A379 behind the Devon Hotel. Crop mark (monument ref: DV953)

On-site discussions agreed that the crop mark monument should be afforded sufficient space to protect the known and potential extensions of the heritage and the principles for how this could be achieved. These principles included the use of a buffer which can incorporate landscaping and a secondary road to potential residential frontage. This will ensure sufficient space around the monument including the monument being bordered by open countryside to the north, avoid back fences onto an important heritage asset and maintain good access to it for further investigation. The exact size and nature of the buffer should be discussed further and agreed with EH later in the development process.

- The Scheduled Monument to the south of the A379 and west of the A30. Crop Mark (monument ref: DV985)

This SM would need to be addressed in a similar manner to the crop mark monument above, however it is likely that capacity work will suggest the potential for development in this area west of the A379 is low and therefore development will not occur in the vicinity of this monument.

INVESTIGATION GOING FORWARD

The archaeology assessment did not suggest anything that was unexpected or likely to be as significant as the SMs already identified on the site, or anything likely to cause major constraint to development. However this is not confirmed and will require further investigation. The assessment did find lots of minor heritage indicators around known sites but these will require further investigation to assess their significance and potential affect on capacity, it is suggested that targeted trenching and more geophysical surveys are undertaken to enable further assessment. The main emphasis has been on doing enough at this stage to clarify any major potential constraints which may affect capacity; developers would still have to carry out more focussed work where necessary at pre-application stage in order to clarify any issues relating to detailed layout and what would be the likely cost of dealing with the archaeology in response to a planning condition.

LISTED BUILDINGS

There are few listed buildings within the study area, these are generally farm buildings of historical or architectural significance to the area. These buildings together with their setting will of course be protected, retained and where possible enhanced and will form an important part of the new urban fabric adding a richness to the grain and urban form. Of particular interest will be the inclusion of the existing listed buildings at Matford House (No. 14) within the new mixed use centre; its new setting will give it the respect and significance it deserves and it will provide an important historical significance to the urban form at this important point on the movement network.

LEGEND:

MOTORWAY

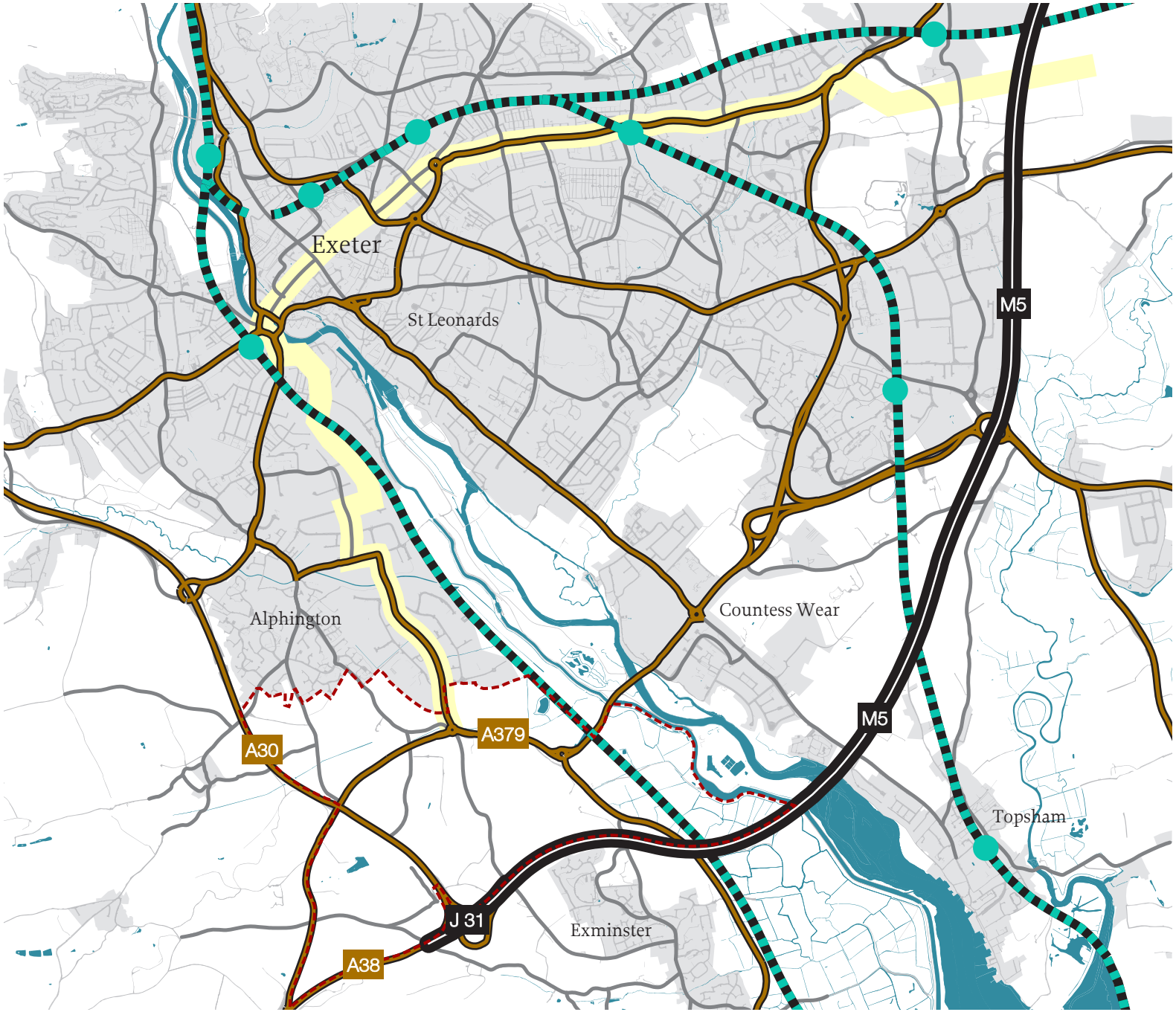
RAILWAY

POTENTIAL ENHANCED PUBLIC TRANSPORT ROUTE

PRIMARY ROADS

SECONDARY ROADS

OTHER ROADS/TRACKS



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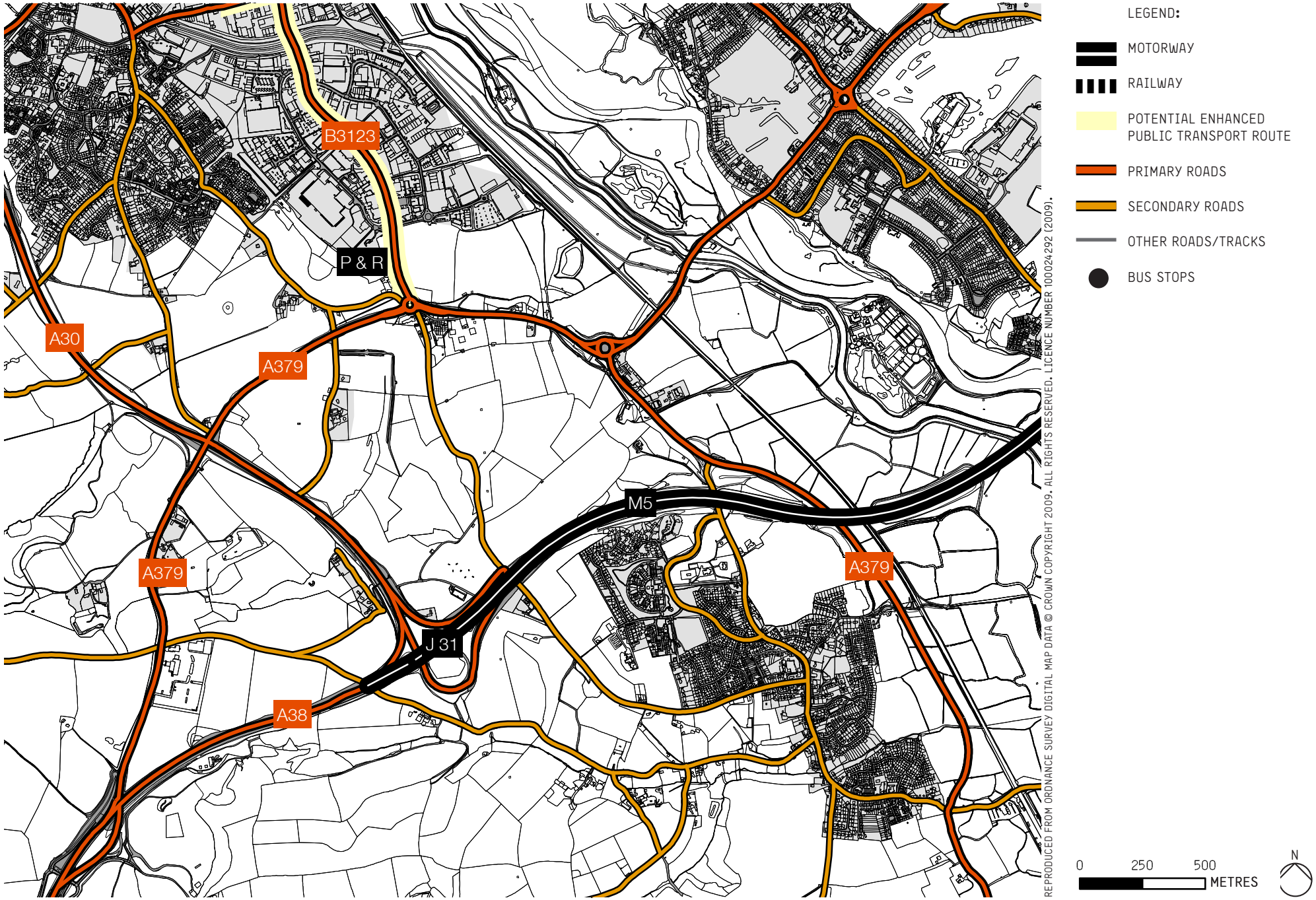
EXISTING TRANSPORT NETWORK (EXETER)



EXISTING TRANSPORT NETWORK (SOUTH WEST EXETER)

2.9 ACCESS AND MOVEMENT

The maps opposite and on page 35 indicate the existing road network and rail network serving the study area and how this sits within the citywide network. The key aspects of this existing network and how it will be both constrain and influence the proposed masterplan are discussed below.

ENHANCED PUBLIC TRANSPORT (EPT)

Plans exist for an Enhanced Public Transport (EPT) service to serve Exeter; the study area is at the end of the proposed route of the EPT which is currently proposed to terminate at the existing park & ride located at the southern end of Bad Homburg Way. Key to the successful creation of a sustainable urban extension in the study area will be sustainable movement connections, and it is likely that the extension of the EPT into the site/study area will be vital in connecting any new neighbourhoods to Exeter City centre and beyond.

Existing bus stops are currently on the periphery of the site, proposed development will need to establish and incorporate new bus routes and stops within the development to support the EPT and provide connections to other parts of the city not directly served by the EPT.

RAIL CONNECTIONS

The railway line currently passes to the north east of the study area, but the closest stations are to the north and some distance away, and likely beyond reasonable walking distance. There is demand for new rail stops to serve Marsh Barton and with the expansion of the trading estate combined with proposals for an urban extension, it is likely that the proposed access and movement framework would include a proposed rail stop at Marsh Barton.

PRIMARY STREETS & WIDER NETWORK

The study area is well connected through the existing network of primary streets. It sits at the south west of Exeter with good access to the M5/A38 for access to the wider network and to the east, access to the north via the A30 and access to the south and west via the A379. It has good primary connections to Matford Business Park and to the city centre via Bad Homburg Way and to the wider city via the A379 and Countess Wear.

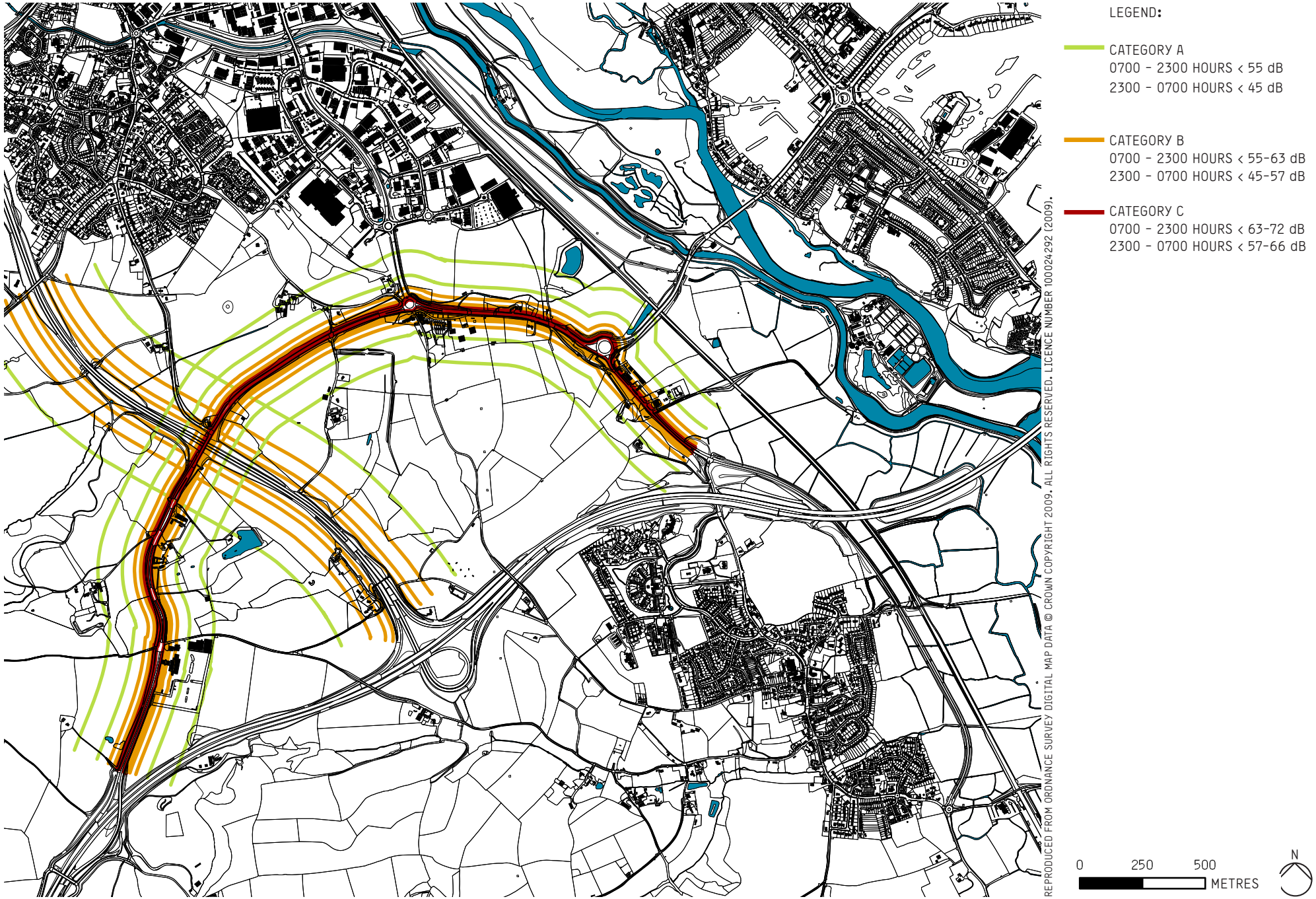
Although the site is well connected by the primary road network this creates other problems for the extension of the city into this area. The study area is bisected by the A30 running north/south and the A379 running east/west. The influence of the A379 and how this will need to be addressed is discussed further in this section and will need to be integrated into any development. The A30 however does not have the same significance, it does divide the study area making a portion of the site to the east of the A30 difficult to integrate but this is not as significant as the A379 which cuts right across dividing all of the southern section of the study area from Exeter.

SECONDARY STREETS

There are few secondary or tertiary streets within the study area. The character of these roads such as Little Silver Lane and Old Matford Lane is generally as 'green lanes' with established trees and hedges. It is likely that the character of these will be retained within the green infrastructure framework for the masterplan and their role will potentially be reinforced or changed to sustainable movement corridors for pedestrians and cyclists only.

A379

The study area is bisected east/west by the A379, in its current form it will form a barrier to a well connected and therefore sustainable urban extension that extends beyond it to the south of the A379. The eastern portion of the A379 east of Bad Homburg Way is not such an issue as this follows the edge of the flood plain and Exe estuary which is a natural barrier anyway. However the western portion between Bad Homburg Way and the A30 will likely need to be addressed. If the masterplan proposals suggest that the urban extension stretches south beyond the A379 to incorporate developable land, proposals will need to be made that incorporate the road into the development. This may be done through a change in the nature of the road to reduce its dominance and allow it to become a primary street rather than a peripheral distributor road albeit with a continued important function and need to carry high flows of vehicles. The concept and specific proposals for how this can be achieved are set out under section 6.2 Access and Movement Framework.



ASSESSMENT OF NOISE LEVELS FROM PRIMARY ROAD INFRASTRUCTURE AFFECTING THE STUDY/SITE AREA

2.10 NOISE AND AIR QUALITY

A draft noise assessment and indicative plan were provided by TDC. This is illustrated and described below along with any potential constraint to development and the impacts on the masterplan proposals.

The Categories indicated on the plan opposite and described below are derived from PPG24: Planning and Noise and the following assessments must be made when considering sites within these category areas:

CATEGORY A

Noise need not be considered as a determining factor in granting planning permission, although the noise level at the high end of the category should not be considered desirable.

CATEGORY B

Noise should be taken into account when determining planning applications and where appropriate conditions imposed to ensure an adequate level of protection against noise.

CATEGORY C

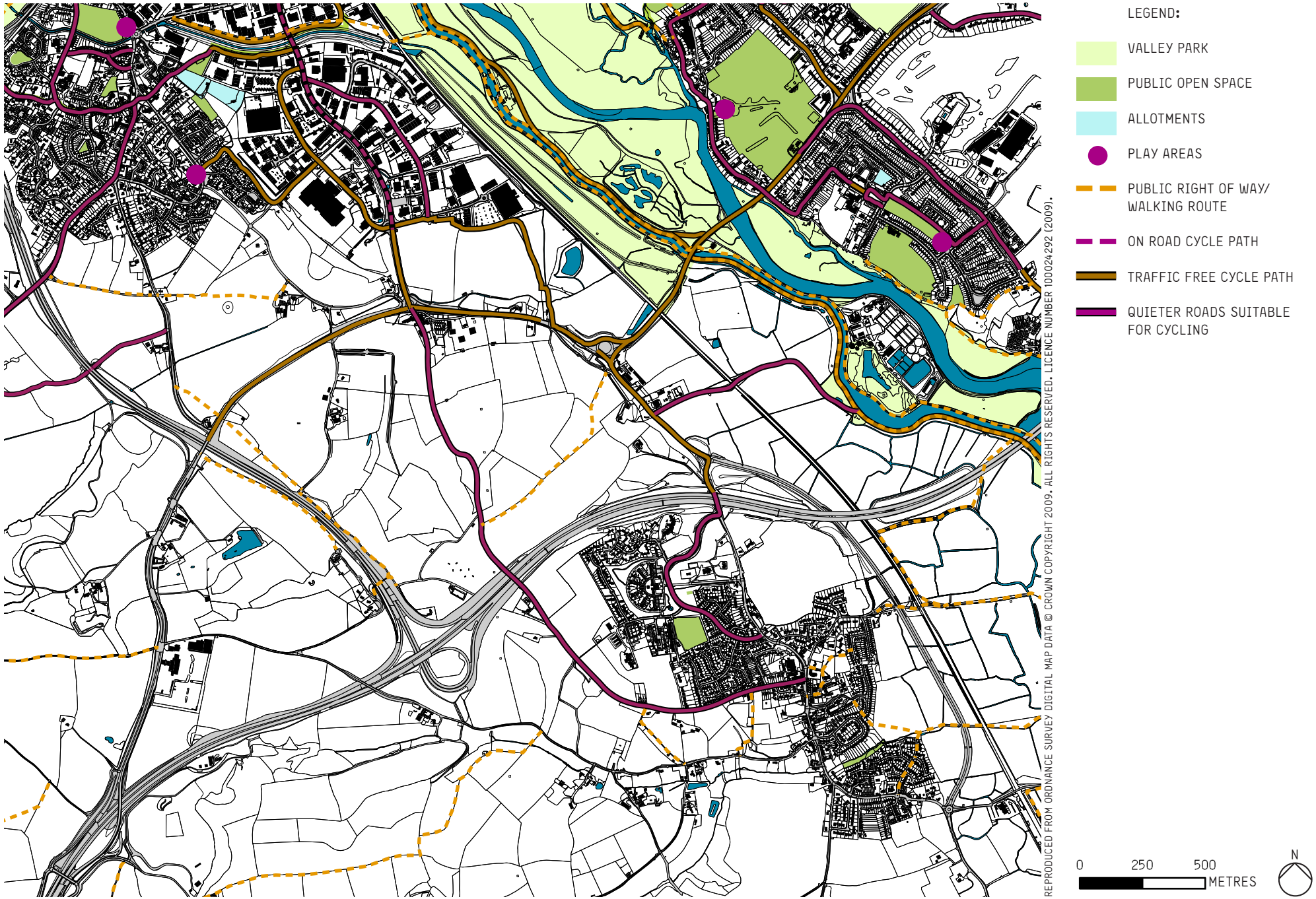
Planning permission should not normally be granted. Where it is considered that permission should be given, for example because there are no quieter sites available, conditions should be improved to ensure a commensurate level of protection against noise.

MITIGATION AND IMPACT ON THE MASTERPLAN PROPOSALS

The levels of noise indicated by the current assessment opposite should not have a significant affect on capacity or layout of the propsals however certain mitgation measures will likely need to be undertaken to reduce impact from noise where required. It is important to note that a more detailed assessment of noise will need to be undertaken to support planning applications and inform detailed design.

The masterplan layout will need to consider:

- Landscape buffer along the length of the A30
- Development adjacent the road network that falls into category B will be laid out to reduce the impact from noise creating acoustic shadows to gardens and outdoor space and to development beyond it
- The housing itself will be designed with glazing and ventilation considered to reduce effects of noise.



EXISTING GREEN INFRASTRUCTURE IN AND AROUND THE STUDY/SITE AREA

2.11 EXISTING GREEN INFRASTRUCTURE

The mapping opposite indicates the range and location of green infrastructure (GI) in and around the study area. Firstly it is important to recognise that unlike some of the other growth areas this part of the city and the study area in particular forms part of the rural landscape and provides access to the open countryside beyond. The plan opposite and the descriptions below set out the existing green infrastructure already in and around the study area and touches on how the masterplan will need to respond.

PUBLIC OPEN SPACE AND PARKLAND

The study area is bordered by the Exe Valley Park to the east and although it is unlikely that development will interact with this directly due to the flood plain it will provide a valuable resource providing a range of public open space readily accessible to development in the study area. As well as the close link to the valley park the valley park itself provides links to other green infrastructure beyond. Masterplan proposals should promote and improve links to the valley park.

FORMAL SPORTS PROVISION

Formal sports provision is currently provided by the existing playing fields in and around the valley park close by and also some provided in Alphington. It is likely that the masterplan would need to provide some further formal pitches probably through school playing fields with shared community access.

PLAY AREAS

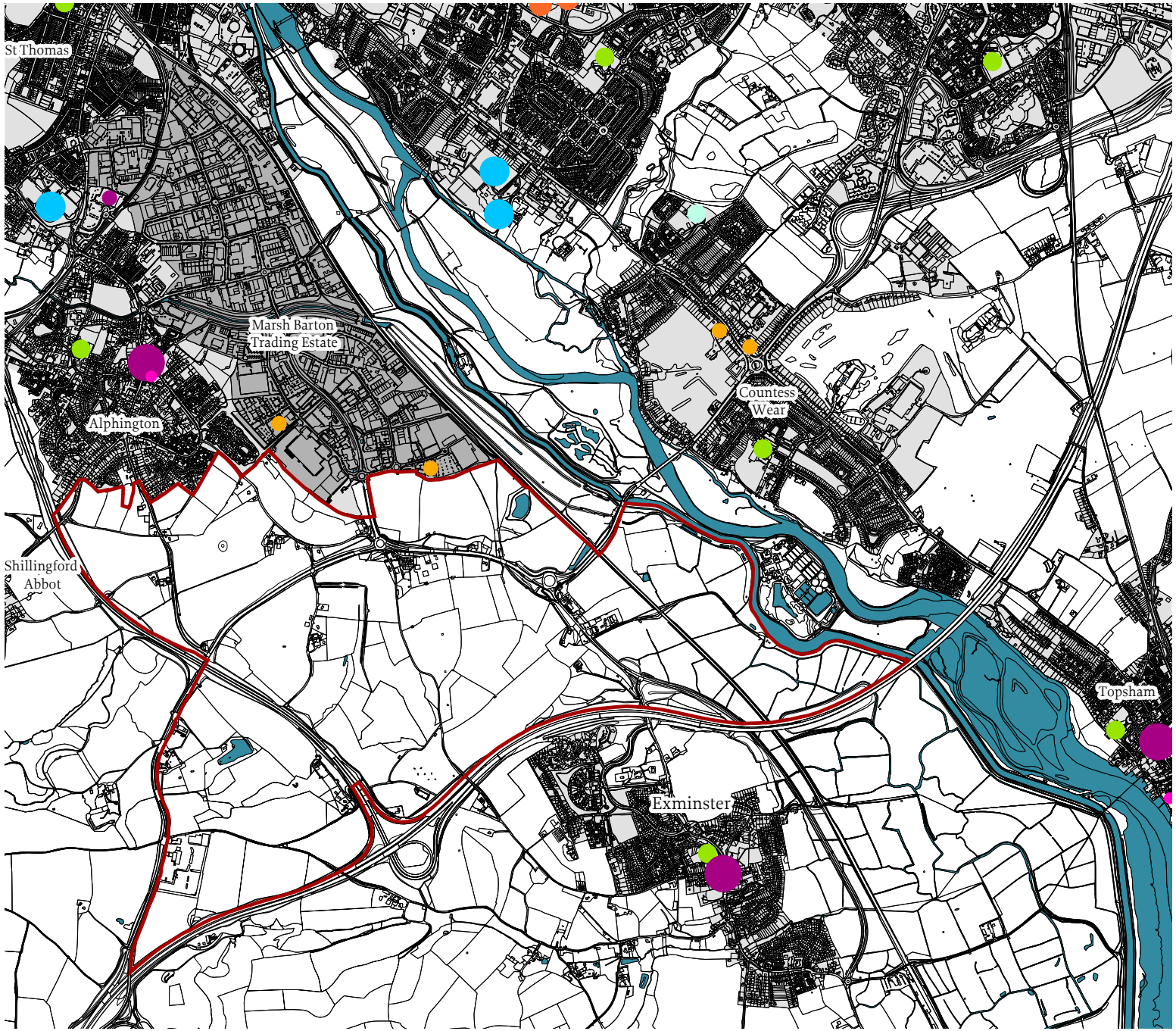
There are few play areas identified within the vicinity of the study area, in Alphington and near the valley park. Local and neighbourhood play areas will need to be included within the layout of any proposed development ensuring provision is within the recommended sizes and distances required by ECC and TDC and to promote sustainable places.

GREEN MOVEMENT NETWORK

There is a network of public right of way routes and some suitable cycle routes already within and adjacent the study area. This network in incomplete and a key part of the masterplan will be to promote these routes and add to them to establish a well connected and dedicated network of pedestrian and cycle ways which will form an important part of the green infrastructure.

EXETER & EAST DEVON GROWTH POINT GI STRATEGY

The study area falls within the area covered by this strategy document and therefore has a GI strategy which forms part of the wider GI strategy for Exeter and East Devon. The masterplan will respond to this document building on its principles to provide a more detailed GI framework for the study area.



LEGEND:

- LOCAL CENTRE
- FOOD STORE
- PRIMARY SCHOOL
- SECONDARY SCHOOL & FURTHER EDUCATION
- SPECIAL NEEDS SCHOOL
- PLACE OF WORSHIP
- HOSPITAL
- DENTIST

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EXISTING BUILT ENVIRONMENT AND COMMUNITY FACILITIES

2.12 BUILT ENVIRONMENT & COMMUNITY FACILITIES

The mapping opposite indicates the spread of various services and community facilities within the context of the study area. Key aspects of provision to consider in the masterplan proposals are:

SCHOOLS

Sustainable community will require the provision of primary schools to ensure self-containment and reduce the need to travel. The nearest primary schools are located in Alphington and at Countess Wear on the other side of the river. They are remote from the development and have capacity issues. The number of children generated by the development is such that two primary schools will be required. The primary schools will be located on each side of the A379 with the aim of encouraging children to walk to school where possible.

The closest secondary school to the site is West Exe Technology College, located north of Alphington. This secondary school is currently approaching capacity and the site cannot be expanded. A new secondary school is required to meet the demand from future development within Exeter and from the South West Exeter development. Given the size of the development, new secondary school provision should be provided within the development. It is possible for one of the primary schools and the secondary school to be provided in the form of an all-through school.

RETAIL

Local retail provision is found in Alphington and in Exminster although it is evident that Exminster is likely to be too remote from the study area and located such that sustainable access would be difficult. The retail provision in Alphington could benefit from the additional support provided by new development but it is also likely that there will be sufficient development to support new retail provision in the study area. Masterplan proposals will need to consider this and its location to promote sustainable development.

MIXED CENTRES & COMMUNITY USES

It is likely that masterplan proposals will need to consider a local centre situated where it can incorporate the retail provision and other community facilities which are lacking in the vicinity. A new mixed use local centre at the heart of the masterplan proposals has the ability to incorporate retail, employment and higher density housing along with community facilities. The brief suggests the provision of cafe, pub, library, community centre & sports hall, a medical centre (including GP & dentists), fire/police liaison facility should all be considered. The addition of office and hotel provision within this centre could establish a district centre as a destination with much smaller local centres in other parts of the masterplan perhaps supporting Alphington. The location and number of centres will need to be investigated to ensure adequate local provision and promote sustainable growth.

2.13 LAND OWNERSHIP

Teignbridge District Council, Exeter City Council and Devon County Council are aware of the land ownerships within the study area of the masterplan.

EFFECT ON MASTERPLAN AND DELIVERABILITY

The study area has complex land ownership with many different ownerships included. This can cause issues when it comes to delivery of any masterplan however this is not unusual for urban extensions. It is appreciated that there;

- are complexities of land ownership,
- may be potential difficulties with landowners coming together to form consortia and in achieving land equalisation, and
- may be potential risk of ransom issues that might prevent land coming forward.

As such there is a recognised need to provide a way in which all landowners with development interests in the proposed masterplan area can contribute effectively towards meeting the cost of infrastructure that is required across the area.

Reforms to the planning system will affect the way in which infrastructure supporting new development is funded. Broadly the approach will be that Section 106 legal planning agreements will continue to be used to secure on-site infrastructure required to make development acceptable in planning terms. However, more significant infrastructure, typically off-site, which in this instance may be required to support the whole urban extension proposed South West of Exeter is likely to be funded through the use of Community Infrastructure Levy and potential other funding sources. All residential development proposals (market housing) bringing forward component parts of the urban extension South West of Exeter will be required to contribute towards Community Infrastructure Levies brought into effect by Exeter City Council and Teignbridge District Council, dependent on which planning area they are situated. In this manner the cost of funding significant infrastructure can be shared across individual development proposals and by individual land owners.

3.0

REGULATORY & INFRASTRUCTURE INFLUENCES

In this section we explore the regulatory and infrastructure context in which the masterplan will be designed and is likely to come forward. The relevant planning policy and legislation is set out including the likely changes that will occur as new policy emerges. In addition to the analysis of site constraints and opportunities set out in the previous section, this section assesses the current utilities infrastructure available to serve any potential development in the growth area.

3.1 PLANNING CONTEXT

The future development of the South West Exeter area will need to respond to national government objectives along with current and emerging national, and local policy requirements.

NATIONAL PLANNING POLICY

The National Planning Policy Framework (NPPF) came into force in March 2012 and has replaced previous national Planning Policy Statements and Planning Policy Guidance.

The NPPF provides material guidance for plan making purposes, to promote the achievement of sustainable development. The NPPF is relevant to the masterplanning of proposed growth South West of Exeter in terms of the provision of a choice of high quality new homes, replacing poor design with better design, jobs, improving

the conditions in which people live, work, travel and take leisure, and moving from a net loss of biodiversity to achieving net gains for the future.

In conjunction with the NPPF, the Government has set out its planning policy for traveller sites. The Government's overarching aim is to ensure fair and equal treatment for travellers, in a way that facilitates the traditional nomadic way of life whilst respecting the interests of the settled community. Homes for the travelling community should be sustainable economically, socially and environmentally.

Planned growth South West of Exeter will need to respond positively to the NPPF, including amongst a range considerations: meeting housing needs, affordable housing and homes for the travelling community, achieving energy efficient / carbon neutral development, economic prosperity, reducing the need to travel and promoting sustainable transport, resilience to climate change and flooding, conserving and enhancing the historic environment, supporting green infrastructure and enhancing biodiversity."

The Draft Regional Spatial Strategy (RSS)
In May 2010 the new Government announced the abolition of the Regional Strategies and there is still the intention to revoke them.

Supporting guidance to local authorities upon the intended revocation of RSS stated: "In the longer term the legal basis for Regional Strategies will be abolished through the "Localism Bill" that we are introducing in the current Parliamentary session. New ways for local authorities to address strategic planning and infrastructure issues based on cooperation will be introduced."

This position was legally challenged by CALA Homes who successfully overturned the revocation to re-establish Regional Strategies in November 2010. The Government maintained that the intention to abolish Regional Strategies should be a material consideration in planning decisions. In May 2011 the Court of Appeal confirmed that the Secretary of States intensions should be a material consideration in determining planning applications, but not in strategic plan-making.

LOCAL CONTEXT

Devon Structure Plan 2001-2016 (adopted October 2004)
Under the provisions of the Planning and Compulsory Purchase Act 2004 the majority of policies of the adopted Devon Structure Plan have been saved. These include policies giving overall strategic direction, dealing with infrastructure provision and guides that the principal urban areas are to be the primary focus for strategic development.

Policy ST10 sets out the key priorities for Exeter over the plan period and these are: developing and diversifying the economy, providing for a significant scale of additional housing; and improving local transport networks. It also deals with levels of Housing and employment growth and requires, inter alia, the provision of 6,700 dwellings and 85 Ha of employment land within Exeter in the period 2001 to 2016 and defines broad Landscape Character Zones. There are a number of polices in the Structure Plan that give guidance on transport and travel and sets out a transport strategy and hierarchy of transport modes.

It should be noted that the Localism Act is proposing a similar revocation of structure plans as to regional strategies.

Adopted Local Plans for Teignbridge
Teignbridge Local Plan (1996)
The Teignbridge Local Plan 1989-2001 forms part of the statutory development plan. The Local Plan was adopted in 1996 and whilst being time-expired, certain policies have been 'saved' by the Secretary of State to be used in the determination of planning applications.

The local plan does not identify any development designations in South West Exeter region however the area is identified as an 'Area of Great Landscape Value' and as a 'Nature Conservation Zone'. As such, polices ENV1 and EVN2 apply. These are not statutory designations however proposals will have to be responsive to any landscape and ecological sensitivities.

Emerging Teignbridge Core Strategy
The Council is preparing a Core Strategy to guide development throughout the Teignbridge area (but excluding Dartmoor National Park) which will replace saved policies in the adopted Teignbridge Local Plan. Consultation events were held through 2009. The Teignbridge Core Strategy Issues & Alternative Options Report (2010) was published for consultation in June 2010. In 2009 South West of Exeter Area Action Plan Issues and Options paper was prepared and consulted upon. Due to the revocation of the South West RSS the work undertaken in producing this document has now been incorporated into the Core Strategy.

The Core Strategy identified the need to work closely with Exeter City Council and

East Devon Growth Point in planning development around the 'Edge of Exeter', which incorporates the South West of Exeter site. It identifies that key issues relating to transport, affordable housing, employment land, community facilities and green infrastructure would all need to be considered in detail in master planning the site.

A Preferred Options consultation report was published in January 2012 for the emerging Core Strategy. This has included proposals for an urban extension South West of Exeter that have been informed through the ongoing work for the preparation of this masterplan.

Adopted Local Plans for Exeter
The Exeter Local Plan First Review forms part of the statutory Development Plan. The Local Plan was adopted in 2005 and its policies have been 'saved' by the Secretary of State to be used in the determination of planning applications.

A Local development Framework (LDF) is being prepared for Exeter City Council to guide development of the City in the period up to 2026. This will progressively replace the Local Plan First Review as the document setting out the planning policies for the City.

Exeter Core Strategy
The Council's Core Strategy has been found sound by the Planning Inspectorate and was adopted by the Council in February 2012. The Core Strategy sets out policies to guide future development and change in Exeter City for the period up to 2026. It is the main document in the LDF providing a broad strategy for the development of the City to which other documents will relate.

The Core Strategy allocates the area of land to the south of Alphington as a strategic allocation. Policy CP19 of the Core Strategy proposes the land for around 500 dwellings together with green infrastructure, low carbon infrastructure, transport infrastructure (including, in particular, enhancement to the strategic road network) and contributions toward other education, social and community facilities.

3.2 ENERGY AND UTILITIES INFRASTRUCTURE

Below is a description of the existing utilities infrastructure available to serve the south west growth area, any spare capacity that might be available and what potential reinforcements may be required dependant on scale and location of potential development.

ELECTRICITY
The Multi Utility Sustainable Infrastructure Strategy 2011 indicates that private utilities investors could secure a profitable return from investing in a low carbon energy network to serve development at South West Exeter. This could help developers to secure carbon compliance with building regulations more financially efficiently but would, of course, be contingent on the profile of development phasing and delivery of an on or near site energy centre. We Understand just over 2.3MVA of spare capacity was available at Marsh Barton sub-station, which is the closest sub-station to the development site. This spare capacity will not be sufficient to serve the quantity of development likely in the growth area although early phases of development may well be able to take advantage of any existing capacity.

It is likely that later phases of new development can generate its own power from renewable or low carbon sources, however if renewable infrastructure is only fully implementable at later stages of growth it may be necessary to provide reinforcements to the existing network to serve earlier phases of development.

GAS
Our preliminary discussions with Wales and West Utilities (WWU) suggest that there is currently spare capacity in the area of the site and we are aware of both medium pressure and high pressure gas mains running across the development site. It is likely that this would provide sufficient capacity for the growth area without the need for further reinforcements.

WATER, SURFACE WATER AND FOUL SEWERS
South West Water have indicated that their existing potable water infrastructure and drainage (foul and surface water) would be unable to accommodate flows from either the first or subsequent phases of growth. The existing drainage infrastructure includes the pumping station on Yeoford Way which pumps to a gravity sewer in East Henock Road which flows to a pumping station in Cofton Road, from here a pumping main connects to the Exeter Sewage Treatment plant at Countess Wear. It is likely that any capacity that may be available will be exhausted by the proposed Matford Park development, it is therefore likely that reinforcements will need to be made to both the potable water and drainage infrastructure to serve development in the south west growth area.

Surface water drainage will be provided by a sustainable urban drainage system where all water is attenuated within the growth area. The strategy for the majority of the site will be to discharge (at restricted rates) to water courses within the site, however it is likely that development in the very northern part of the site will need to connect to the existing surface water sewer network in Alphington.

TELECOMS

Telecoms provision to the site is unlikely to cause problems. The Statutory Undertakers plans obtained from BT and Virgin Media both show their networks in the area. These networks should be able to be expanded to serve the growth area with a voice and telecommunication services, it will be a vital component of any new sustainable neighbourhood that it can take advantage of these services to promote working at home and real time transport updates in the home.

Detailed utilities and infrastructure needs will be identified as the masterplan is taken forward and a strategy for meeting these needs proposed. A key aim of the masterplan is to achieve low or zero carbon development, this requires the development of an energy strategy and masterplan that will achieve this objective, the potential strategy is set out in the energy framework under section 6.

4.0

SITE CAPACITY AND THE POTENTIAL FOR GROWTH

This masterplan study for growth to the south west of Exeter has been guided by a study area designating the area to be explored for its potential to accommodate residential development. This section sets out how the capacity for development or area of suitable residential development land in the study area is calculated.

In response to the analysis of the site and its context set out in sections 2 & 3, constraints to development emerge that are both absolute and considered. The absolute constraints are those where land cannot be developed for residential use and leave no choice but to be excluded from the development capacity. Considered constraints are those where an assessment of the lands suitability for development is made and a decision is made to either include it or exclude it from the development capacity. Once all constraints and important features have been considered and those areas excluded the remaining area of land is that which is considered suitable for residential development and therefore the true potential for growth.

By applying densities for residential development and plot ratios for employment uses to the area considered suitable for development, the capacity in terms of housing numbers can be determined.

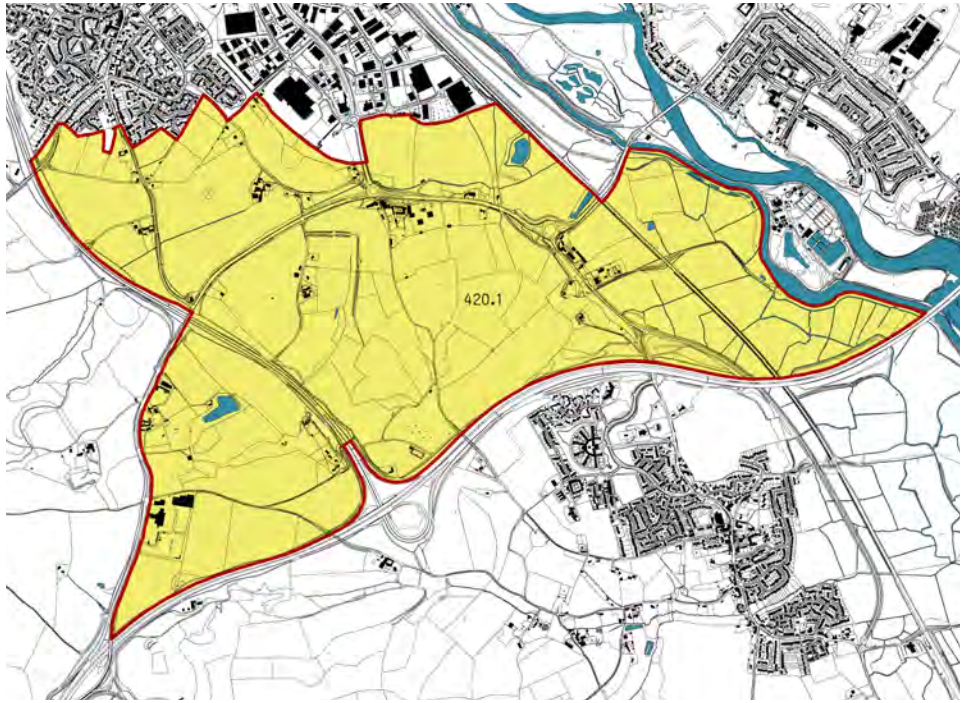
The following plans illustrate how the overall site area is reduced by these constraints to provide the potential area for growth and therefore the capacity of the site.

4.1 SITE CAPACITY

TOTAL AREA

The plan below illustrates the site/study area to be investigated for potential growth in the south west of Exeter. The growth area is constrained by the existing city edge to the north, the M5 motorway to the south, the Exe estuary to the east and the A30 & A379 roads to the west.

The resulting gross site or study area is 420.1 hectares.



SITE/ STUDY BOUNDARY

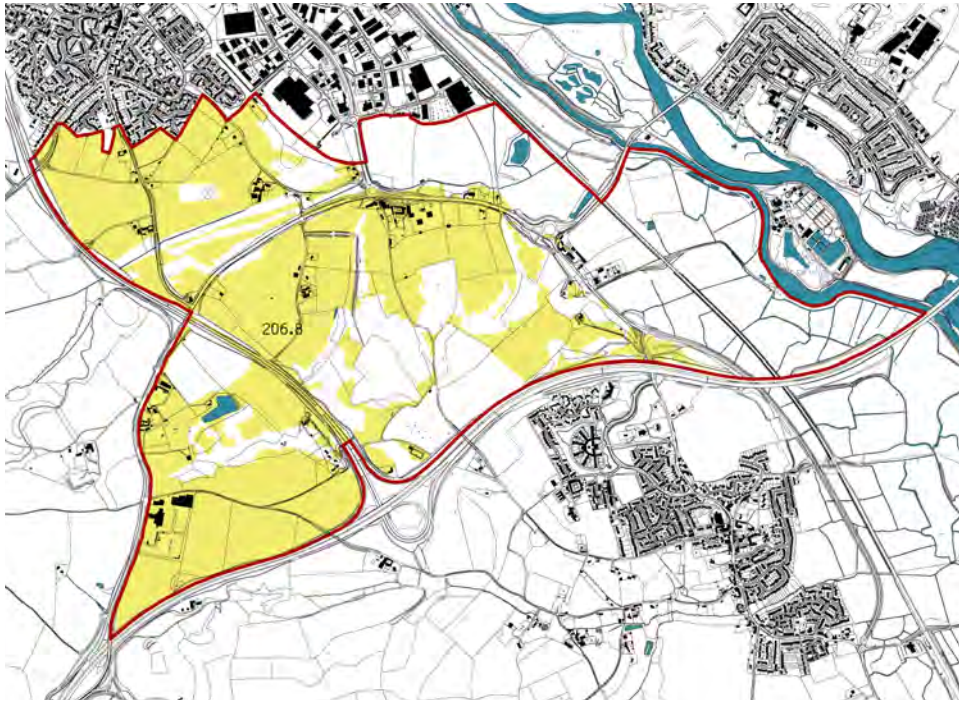
TOTAL SITE/STUDY AREA

AREA LESS ABSOLUTE CONSTRAINTS

The plan below illustrates the total site area less the land considered undevelopable due to absolute constraints these include:

- Archaeological remains scheduled as Ancient Monuments
- National Flood zones 2 & 3
- Designated wildlife habitats (SSSI, RAMSAR, SPA, County wildlife sites)
- Landfil site
- Topography - land too steep to build on (steeper than 1:6)

The resulting area with the potential for development is reduced to 206.8 hectares.



SITE/STUDY BOUNDARY

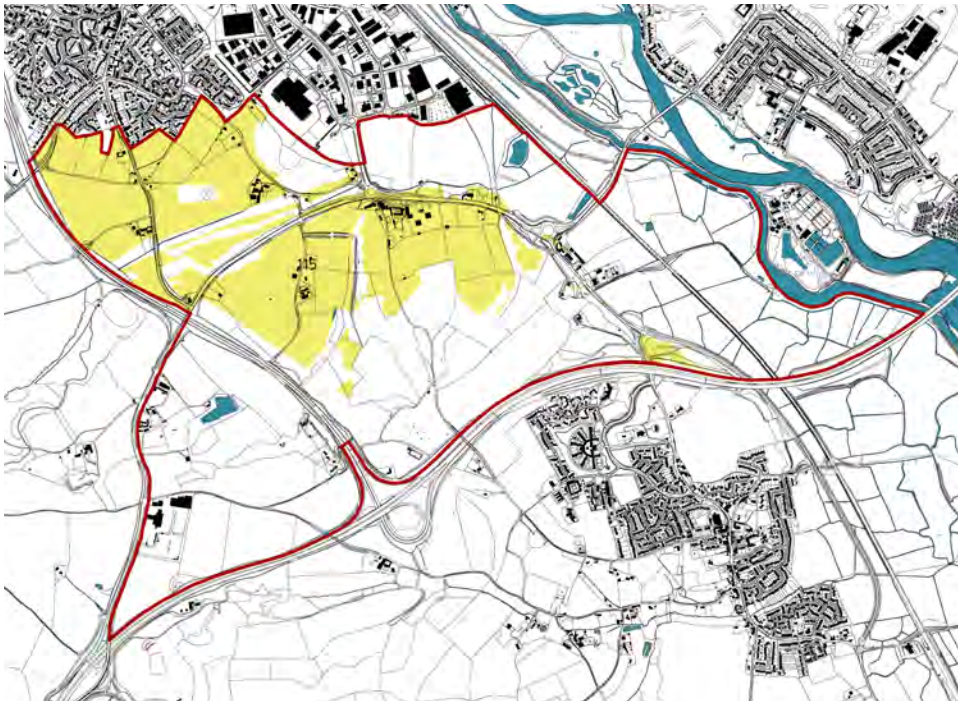
SITE/STUDY AREA WITH POTENTIAL FOR DEVELOPMENT

AREA LESS ABSOLUTE CONSTRAINTS & CONSIDERED CONSTRAINTS

The plan below illustrates the removal of both the absolute constraints described opposite and the the considered constraints which include areas of land with:

- Visual sensitivities - such as the setting of Exeter, ridgeline, Knowle Hill
- Landscape sensitivites - such as existing vegetation or land with high landscape value
- Areas of land considered to remote or disconnected by road infrastructure to provide a sustainable urban extension - such as the portion of study area to the west of the A30

The resulting area with the potential for development is reduced to 115 hectares. This area reflects the true potential for sustainable growth in the study area.



SITE/STUDY BOUNDARY

SITE/STUDY AREA WITH POTENTIAL FOR SUSTAINABLE DEVELOPMENT

DEVELOPABLE LAND

The previous plans illustrated the remaining land, this plan illustrates both the land remaining and the land considered unsuitable with the absolute constraints in black and the considered constraints in grey. The remaining white land within the study area reflects what is shown in yellow opposite and is the land with potential to be developed.

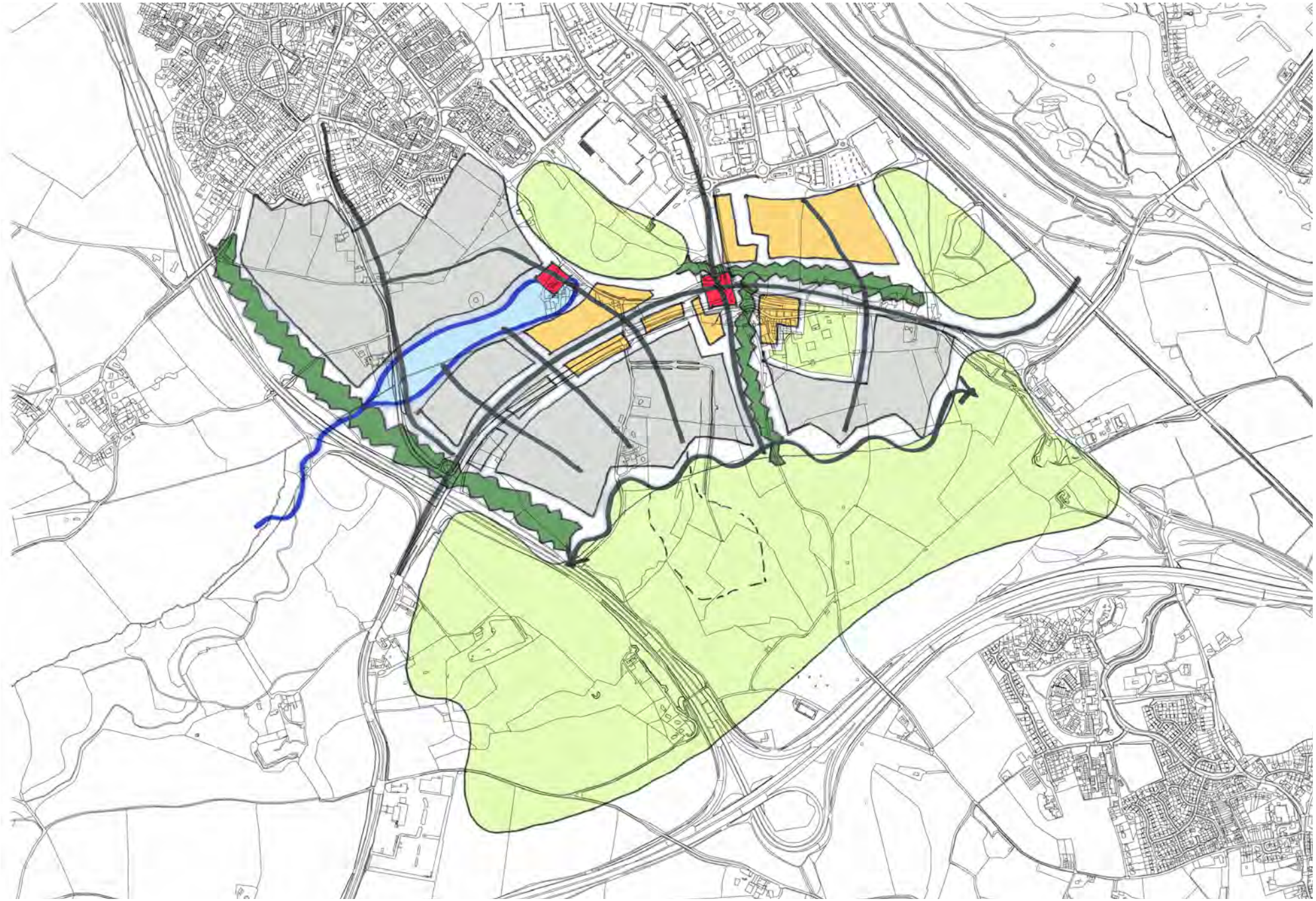
The capacity of this land will depend on many factors including density of development, layout and design. These things are taken into account as the masterplan develops and the potential capacity is then illustrated in the development schedule which accompanies the illustrative masterplan.

CONSIDERED CONSTRAINTS

ABSOLUTE CONSTRAINTS

SITE/STUDY BOUNDARY

LAND WITHIN THE STUDY AREA WITH POTENTIAL FOR DEVELOPMENT



EARLY CONCEPT SKETCH FOR SOUTH WEST EXETER GROWTH AREA

5.0

A VISION FOR GROWTH

To ensure that the south west growth area becomes a well planned, coherent and high quality extension of the city it is important to establish a clear vision and set of objectives for its growth.

This section sets out the objectives and vision for development in the study area, providing the 'bigger picture' and establishing the aspirations as to the kind of place South West Exeter should be in the future. A vision is needed to give clear direction and to guide planning, development and investment decisions towards the achievement of an agreed aim. The vision and objectives ensure that different developments and initiatives that come forward within the Masterplan area are all moving in the same direction and support each other towards a common goal.

In order for the vision to be deliverable it needs to be underpinned by a set of objectives that address the social, economic and environmental priorities identified for the local area, the city and the wider Teignbridge District. These have been set out under section 5.1 'The Objectives'.

5.1 THE OBJECTIVES

1 MOVEMENT

Create a place that promotes sustainable transport methods by facilitating and encouraging walking, cycling and the use of public transport as the primary means of transport...and is well integrated with and connected to existing community facilities, neighbourhoods and employment areas

- Ensure that safe and convenient pedestrian, cycle and public transport routes are provided to and from the city centre and other key destinations within and around the site;
- Provide adequate local facilities to reduce the need to travel with legible and direct pedestrian, cycle and public transport routes to these facilities
- Actively encourage a shift away from use of the private car to more sustainable modes of transport via improving the attractiveness of public transport in terms of cost, ease of movement, speed, flexibility and reliability through the integration of an Enhanced Public Transport (EPT) system.

2 LANDSCAPE SETTING AND ENVIRONMENT

Create a place that responds sensitively to its landscape setting in terms of topography and visual prominence to ensure development does not detract from the site/study areas contribution to the overall image and attractiveness of Exeter

- Ensure the masterplan respects the upper slopes and ridgelines to maintain their contribution to the setting of the city and in defining the natural limits of the city's growth
- Consider opportunities for a Country Park to be located within the development to provide a strategic multifunctional greenspace for the new community;
- Retain Knowle Hill as a strong and distinctive landscape feature.

3 LOW CARBON SUSTAINABLE DEVELOPMENT

Create a place that facilitates a low carbon lifestyle through a reduction in car dependency, designing buildings to minimise energy and resource requirements, incorporates Sustainable Urban Drainage Systems and utilises sustainable methods of energy and heat provision.

- Promote the use of sustainable energy from possible existing and future resources at Marsh Barton and investigate the potential for a combined heat and power distribution system;
- Minimise use of resources and promote energy efficiency through the design, choice of materials and construction methods of buildings;
- Utilise Sustainable Urban Drainage Systems;
- Encourage self sustaining lifestyles providing opportunities to grow food or fuel and travel by means other than private car.

4 COMMUNITY

Create a place with a distinct sense of community and character that respects and preserves the identity of neighbouring settlements. Deliver a balanced range of facilities to create diversity and 'sense of place'.

- Create variety through providing different densities and mixes of development to establish neighbourhoods that reflect and respond to the sites conditions and character;
- Encourage social integration, cohesion and strong physical links with existing communities;
- Encourage interaction, community spirit and a sense of identity and ownership;
- Provide an integrated mix of housing types and tenure that responds to local needs and affordability;
- Promote healthy and happy communities, facilitating a healthy lifestyle and enjoyment of the outdoors for the local business and residential community;
- Utilise and respect the sites natural assets and historical features integrating these elements positively into the community.

5 GREEN SPACES

Create a place that makes the most of its natural and cultural assets to provide a network of multi-functional 'green' corridors that link new residential areas and existing communities to open countryside.

- Utilising open spaces as a valuable community resource;
- Ensure open spaces and greenways achieve a range of compatible functions and roles such as leisure and recreation, food production, drainage and flood risk management and biodiversity enhancement;
- Ensure green spaces are linked up and connected to wider Green Infrastructure networks and open countryside
- Protection of Scheduled Monuments and Listed Buildings and their settings.

6 URBAN ENVIRONMENT

Create a place with a high net density of mixed use development which is within easy access of high quality public open spaces, community facilities and the surrounding countryside.

- Develop a compact, high density, legible urban environment that also delivers an attractive living environment with easy access to public open space and the surrounding countryside;
- Create a place recognised for its quality environment and a desirable place to live and work;
- Create well defined, high quality streets and spaces;
- Build high quality architecture that reflects local identity.

7 BIODIVERSITY/ECOLOGY

Create a place that promotes biodiversity, protects sensitive ecological areas and provides a network of wildlife corridors via strategic Green Infrastructure.

- Ensure appropriate management and integration of existing wildlife corridors and habitats into new areas of built environment where possible retaining them within the public realm;
- Retain and appropriately managing the County Wildlife Sites and other ecological designations within the site;
- Retain and incorporate existing hedgerows and woodlands integrating them into wider continuous wildlife corridors and linking to surrounding key habitats including the Exminster Marshes.

8 EMPLOYMENT

Create a place that enables people to live close to where they work.

- Develop strong links to other existing and potential employment locations
- Provide new employment opportunities in a high density integrated environment with the potential to create a new gateway to Exeter
- Create employment sites and units that are of a flexible design that respects the surrounding environment and that relate well to residential and other community uses
- Ensure that employment sites and communities have good access to ICT resources promoting flexible working and the potential to work from home

9 DELIVERABILITY

Ensuring the masterplan provides a flexible framework for growth capable of delivering a strong sense of place in a phased way.

- Develop a phased approach to delivery which allows development to be delivered flexibly and incrementally, avoids the need for large up-front infrastructural contributions and encourages place making.
- Establish a collaborative approach to delivery involving the local community in decision making;
- Establish a delivery plan that sequences development creating a positive cash flow and generating value where possible
- Establish a system for effectively capturing planning gain to invest back into the community
- Provide management and governance structures up-front to ensure the maintenance of open space and public realm

5.2 THE VISION

South West Exeter will be a new high density suburb centred on the enhanced public transport route. It will comprise new neighbourhoods clustered together within the valley and centred upon the Roman Road and Waybrook. The valley bottom has potential to form the setting for a water body such as a lake creating an attractive and entirely unique city feature with a strong identity. There will be a new high density place located around the key intersection of routes into the city along the A379 at the foot of knowle Hill. New permeable and connected communities will be located on the valley sides facing the city and enjoying views across the Exe Valley towards the city. Streets and buildings will climb the valley sides leading to the ridgetop park or common. From here there will be stunning views out across the city and the estuary and towards Dartmoor.

South West Exeter will take advantage of three important place-making components:

- its location on the most important historic route into the city from the south- the Roman Road;
- its location on Matford Brook, one of the minor tributaries of the Exe;
- its location below a new ridgetop country park

THE DEVELOPMENT OF THE VISION

South West Exeter represents a new direction and a new place for the city. This is not only a new geographical direction for the city's growth – a new part of the city south of the River Exe but also a new direction in place-making terms that will meet the challenges of climate change.

Extending the boundaries of any city to accommodate growth presents a great challenge. Cities historically grow around a nucleus of natural advantages ranging from proximity to fresh water, natural shelter from elements , the confluence of historic routeways, bridging points across rivers , and defence. In common with most cities in Britain the pace of growth in the second half of the 20th Century in Exeter has either obscured or obliterated many of the natural and man-made factors that influence human habitation. This is particularly evident in the south of the city where its physical structure has been fractured by the major roads, the M5 and A30 sweeping around the south and the west side of Exeter. The exponential growth of Marsh Barton and Matford in this period has further served to confuse the physical structure of the city.

The vision for South West Exeter is to address all of this and reinforce the importance of the southern approach to the city. The aim is to establish a new city district within the natural setting of Exeter, sitting below the ridgeline and benefitting from the backcloth of the hills that enclose the city. South West Exeter will face back into the city with views of the city skyline and sitting close by the Exe. The intention is that South West Exeter will not only provide a clear identity for the area of growth but will also provide the focus for areas in the south of the city that currently lack a character and identity of their own.

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STRATEGIC DEVELOPMENT LAYOUT BASED ON POTENTIAL FOR GROWTH AND SITE CAPACITY

KEY

- EXISTING URBAN AREA
- DEVELOPABLE AREA
- MAIN ROADS
- PARK AND RIDE
- SCHEDULED MONUMENT
- ENHANCED PUBLIC TRANSPORT ROUTE
- ENHANCED PUBLIC TRANSPORT STOPS
- MIXED USE CENTRE
- SECONDARY SCHOOL
- LANDFILL SITE
- PRIMARY SCHOOL
- KEY FOOTPATHS AND CYCLEPATHS
- KEY 'GREENWAYS'
- A379 IMPROVEMENTS
- MARSH BARTON
- PEDESTRIAN FRIENDLY SECTION OF A379
- GREEN INFRASTRUCTURE NETWORK

0 250 500 Meters

N

4.2 STRATEGIC DEVELOPMENT LAYOUT

Having assessed the potential for growth and established a vision and concept for the development, we have taken this a step further to develop three strategic development options. These development options were assessed against the objectives established with the vision to agree the strategic development layout that could best achieve the vision. All three options and the assessment schedule can be found in Appendix 1.

All three strategic options were based on the same capacity as established in the Potential for Growth section and some of the key movement and spatial arrangements for uses developed through the concept design as part of the vision. The key variations between the options were concerned with size of local centres, key public transport and school locations.

These variations were assessed against the objectives and the strategic development layout opposite was chosen as the most likely to achieve the vision. It key features include:

- Capacity for growth on both north and south sides of the A379 creating three distinct neighbourhoods and an extension to Marsh Barton Trading Estate in the form of the Matford Business Park.
- A district centre at the heart of the development and at the intersection of the key primary road network.
- A new local centre on the northern side of the A379.
- Two new primary schools one on each side of the A379 located within walking distance for all new residents and preventing the need to cross the A379.
- A new secondary school located to the north of the A379 within the proposed green parkland network. During development of the masterplan this location has been moved to the west swapping sites with the primary school to minimise impact on the Scheduled Monument. The school location is well connected to the green lanes network ensuring easy walking and cycling access.
- A dedicated green lanes network connecting all new neighbourhoods together and to the schools and to the existing neighbourhoods beyond. Establishing new routes and consolidating existing ones with the new Knowle Hill Park at the centre.
- New enhanced public transport network running through the development

connecting a new park and ride, the district centre and the residential neighbourhoods to the city centre.

- Scheduled Monuments, protected and thoughtfully incorporated into the extension of the city. (The secondary school has since been moved following on-site discussions with English Heritage).
- Potential water body or lake established within the Matford valley as a key feature of the SUDs strategy and to form part of a distinct identity for the new Knowle Hill park.
- A new country park along the southern ridgeline of the study area, protecting wildlife designations whilst providing a regional landscape asset and again adding to the identity of the new district.

6.0

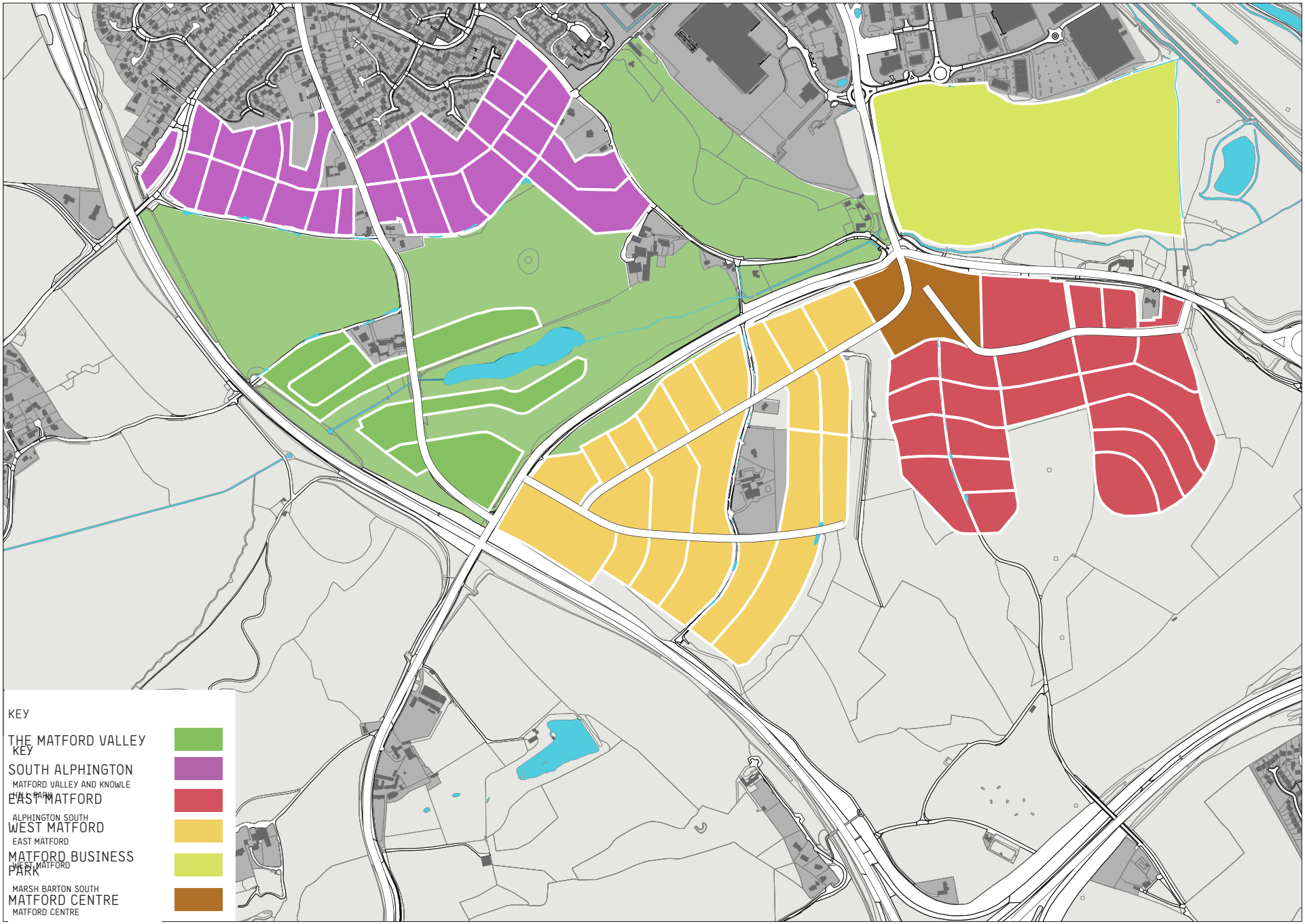
A FRAMEWORK FOR GROWTH

This section sets out a series of framework plans to guide development within the study area over the coming years. Each of the framework plans seek to contribute to the delivery of the strategic development layout and realise the over arching vision and objectives set out in Section 5. The framework plans include:

- Character and landuse framework;
- Access and movement framework;
- Green infrastructure framework;
- Sustainable urban drainage framework;
- Urban framework;
- Energy and utilities framework.

The framework plans seek to provide a flexible structure for guiding future change and growth in south west Exeter. If the principles set out in these frameworks are recognised and planned for coherently then the broader vision and objectives can be achieved.

The framework plans are brought together into an illustrative masterplan that demonstrates how these frameworks could potentially be delivered.



CHARACTER AREA PLAN

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6.1 CHARACTER AND LAND USE

The developable area established within the study area can be divided into 6 proposed character areas, indicated by the plan opposite, each with its own distinct character and identity. Each of the proposed character areas is a response to its existing landscape character: landform, vegetation and aspect, its existing built context and proposed uses and density. The 6 proposed character areas are:

- South Alphington;
- Matford Business Park;
- The Matford Valley;
- Matford Centre;
- East Matford and
- West Matford

The desired character of each of these areas is set out on the following pages. The scale of streets and spaces, uses, density, plot sizes, building heights, architectural treatment and design choices within each of these areas should reinforce its desired character and overtime establish a sense of identity.

'THE MATFORD VALLEY'

The Matford Valley neighbourhood is a residential neighbourhood providing a range of family housing but is charcacterised by the lower density 'fingers' of housing that stretch out into the parkland setting taking advantage of the water features and rural nature of the place. Secondary and primary schools also sit within this parkland setting responding to and protecting the Scheduled Ancient Monument that sits within the Matford Valley.

USES

- residential
- education (secondary and primary)
- recreation/leisure

DENSITY AND HEIGHT

Predominantly a low-medium density neighbourhood with medium density (45-55 dph) areas adjacent to the A379 and A30 roads and low-medium density areas (35-45 dph) reaching out along the valley responding to the water course and proposed lake/water body and its parkland setting. Generally 2-3 storey buildings.

'MATFORD CENTRE'

Matford Centre will become the central focus for the new south west Exeter growth area providing a vibrant mixed use centre with a range of commercial residential and community facilities supported by the new and existing communities.
New offices, employment space and hotel facilities can provide a business destination as well as supporting the expanding commercial activities in Marsh Barton. Some retail, food & drink and apartment living around new carefully designed public realm will create a suitably urban district centre for the growth of the city.

USES

- employment (office, live-work, creative workshops);
- hotel;
- retail;
- residential (apartments) and
- community facilities to include, cafe, pub, library, community centre & sports hall, a medical centre (including GP & dentists), fire/police liaison facility

DENSITY AND HEIGHT

Higher density (55-65 dph) residential development as part of a mixed use centre. 3-6 storey buildings.

'SOUTH ALPHINGTON'

The vision for south Alphington is of a predominantly residential neighbourhood that successfully and sustainably extends Alphington up towards the existing ridge line. A tight grain of permeable streets well connected to and close enough to the centre of Alphington to support the existing services whilst also providing limited local facilities that can also serve the adjacent proposed Matford Valley neighbourhood. The neighbourhood would support a mix of family housing arranged to respond to existing housing and maximise access to the Green Lane running along its southern edge.

USES

- residential;
- local shop;
- cafe and
- youth centre/childrens centre.

DENSITY AND HEIGHT

Predominantly a low-medium density neighbourhood (35-45 dph) with low density areas (25-35 dph) adjacent the existing housing of Alphington. A higher density block (55-65 dph) at the heart of the neighbourhood will allow for a mix of dwelling types and create a focus for the local facilities and adjoining Matford Valley neighbourhood. Generally 2-3 storey buildings. Development should conform to Exeter's Residential Design Guide.

MATFORD BUSINESS PARK

An extension of the Matford Business Park providing a variety of employment space including offices and workshops. The new employment community will have close links to facilities and Enhanced Public Transport (EPT) hub at the new Matford district centre. The building layout will provide a slightly tighter grain than that of the existing Matford Business Park and the layout will respond to the existing and enhanced green infrastructure corridor connecting the proposed Matford Valley Park to the estuary.

USES

- employment (office/light industrial/showrooms/creative workshops/ compatible B2)

DENSITY AND HEIGHT

Employment space with a higher plot ratio than existing areas of Matford Business Park, particularly to provide an active frontage to Bad Homburg Way and a visual 'gateway' building at the new junction with the A379.

'WEST MATFORD'

West Matford will be a new neighbourhood with a distinct character, a compact residential community with highly sustainable housing laid out to a strong legible street pattern that responds to its topography and existing landscape structure. A dense framework of development forms an urban edge to the A379 and active street frontage to the enhanced public transport (EPT) route. Well connected by foot and cycle to Matford district centre and the Matford Valley with its parkland and schools by a network of 'Green Lanes' and beyond to central Exeter by EPT.

USES

- residential;
- employment (office, live-work, creative workshops);
- local shop/cafe or similar;
- park and ride facility and enhanced public transport (EPT) node

DENSITY AND HEIGHT

Predominantly a medium density neighbourhood with higher density (55-65 dph) areas adjacent the Matford Centre and the A379 access (Park & Ride). Medium-high density (45-55 dph) residential development adjacent the A379 and the EPT route and at the heart of the development. Low-medium density (35-45 dph) housing responds to the rural country park edge. Generally 2-3 storey with some 3-5 storey buildings adjacent the Matford Centre and at the 'gateway' access point from A379.

'EAST MATFORD'

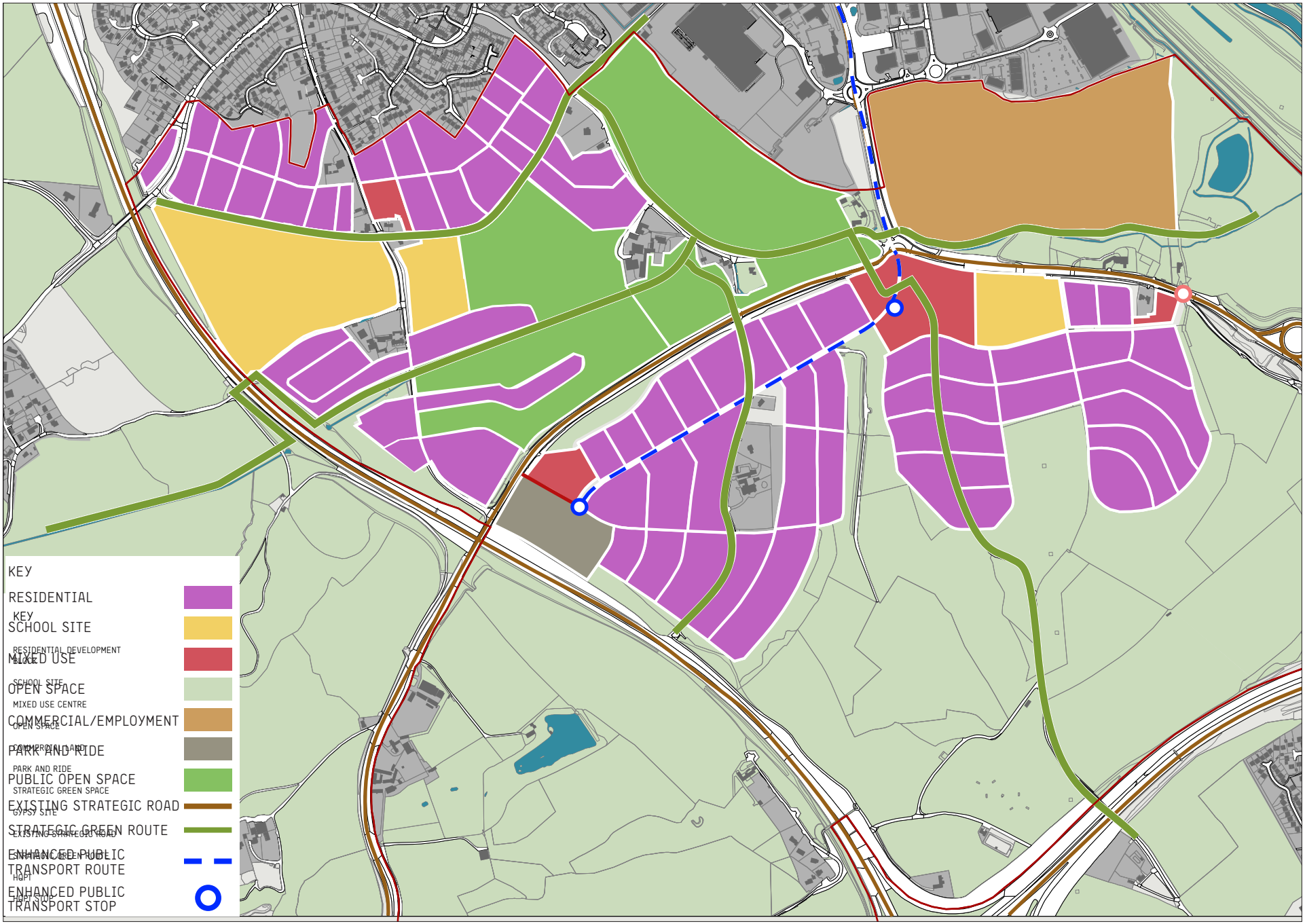
East Matford will be a new residential neighbourhood with its own distinct character. A compact residential community with highly sustainable housing forming a tight grained but legible street pattern that responds to its topography and existing landscape structure, with houses stepping down the valley slopes incorporating the existing lanes, hedgerows and a Scheduled Monument. Well connected by foot and cycle to Matford district centre and the Matford Valley with its parkland and schools by a network of 'Green Lanes' and easy access to the EPT hub at the district centre.

USES

- residential;
- education (primary) and
- employment (office/live-work/creative workshops)

DENSITY AND HEIGHT

Predominantly a medium density neighbourhood with medium-high density (45-55 dph) development adjacent the A379 and Matford Centre and low-medium density (35-45 dph) housing rising up the slopes towards the country park with lower density (25-35 dph) addressing the country park edge. Generally 2-3 storey with some 3-5 storey buildings adjacent the Matford Centre and at the 'gateway' access point from A379.



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LAND USE PLAN

6.1.1 SUMMARY OF LAND USE

The uses described in the character area descriptions are outlined on the plan opposite. This plan and the descriptions below indicates the spread of proposed uses throughout the growth area and their relationship to each other and their existing environment. The predominant use is residential with the other uses required to support this new community and ensure that growth provides a sustainable extension to the city.

RESIDENTIAL

A key catalyst for the growth of Exeter as other towns and cities is the need for new homes. New residential areas therefore make up a large proportion of the growth area and total numbers are in line with the capacity for growth in this area discussed in detail in section 4.0 'Site Capacity and the Potential for Growth'.

All new housing across the site will be laid out to form legible and permeable neighbourhoods that are well connected to each other and the existing built environment.
All new housing and neighbourhoods will need to be designed to help achieve low carbon development, the houses themselves will need to be energy efficient but housing will also need to be laid out to form compact neighbourhoods to help reduce sub-urban sprawl, reducing travel distances and supporting community infrastructure. Achieving low carbon development in south west Exeter is discussed in more detail under section 6.7.

The growth area is close to and has good access to the nearby employment area of Marsh Barton and good access to the centre of Exeter via proposed enhanced public transport, with new public transport hubs proposed for the district centre and the new park and ride facility.

The growth area will provide a range of housing types and sizes supporting a varied tenure. The extension of the city into this area gives opportunity to provide much needed urban and sub-urban family housing as well as lower density housing that responds to the rural fringes and setting of Exeter. Affordable housing will be provided as part of this mix with a target of 35% spread across the growth area.

GYPSY & TRAVELLER SITES

The provision of sites to provide homes for Gypsies and Travellers to the South West of Exeter is in accordance with the requirements set out by Teignbridge District Council. The provision of residential pitches to the South West of Exeter will help meet the accommodation needs of Gypsies and Travellers in the Teignbridge plan area, subject to assessment of need and deliverability.

The masterplan does not indicate any specific sites, however locations will be most suitable where they have close proximity to the main road network, a semi-rural nature and access to community facilities (including schools) and green infrastructure.

MIXED USE

Mixed use development is provided at key points in the masterplan as a way of providing local facilities and a focus for neighbourhoods. As described briefly in the character areas a district centre is proposed at Matford Centre with three further local centres or opportunities for alternative uses.

Matford Centre will become the central focus for the new south west Exeter growth area providing a vibrant mixed use centre with a range of commercial residential and community facilities supported by the new and existing communities.
New offices, employment space and hotel facilities can provide a business destination as well as supporting the expanding commercial activities in Marsh Barton. Some retail, food & drink and apartment living around new carefully designed public realm will create a suitably urban district centre for the growth of the city.

The local centre proposed as part of the Alphington extension will seek to provide additional facilities to support the existing facilities in the centre of Alphington providing a small retail element, a cafe/food and drink outlet and a youth/children's centre which can have a strong association to the adjacent schools. An element of residential within the mixed use local centre would likely be apartments. This local centre is located so that it can support both the existing and proposed Alphington communities and potentially the proposed Matford Valley neighbourhood depending on development scenarios discussed below. The location also makes it easily accessible for pedestrians and cyclists as it is ideally located on the proposed 'Green Lanes' network. This mixed use location is strategically important to the promotion of flexible and sustainable growth. If for example growth was only delivered to the north of the A379 the local centre would need to expand into adjacent plots or there may be potential for a more significant centre to be located on the proposed secondary school site to incorporate the facilities and focus required to

ensure that the growth of South Alphington and Matford Valley is sustainable'. This strategic importance and potential growth scenarios are discussed in more detail under section 8.0 'Delivering the masterplan'.
The local centre for the West Matford neighbourhood is situated at the main access from the A379 and adjacent the park and ride public transport hub. This local neighbourhood focus can provide not only an element of dense urban housing or apartments along with facilities such as a small shop, cafe/food and drink outlet but also a cluster of local employment space such as offices live/work or creative workshops ideally located around the public transport hub, this will need to be limited to ensure the success of Matford Centre which forms the main focus for both East and West Matford.

The final element of mixed use development is located at the main vehicular access point to the East Matford neighbourhood, it can provide an element of dense housing probably apartments as a gateway to East Matford with a local shop and the potential for employment (office/live-work/creative workshops) but limited to ensure the success of Matford centre which forms the main focus for both East and West Matford.

EMPLOYMENT

Opportunities for local employment are proposed to flourish in the mixed use centres of each neighbourhood as described above. However the main focus for employment in the growth area will be the proposed extension to Marsh Barton trading estate supported by the new district centre at Matford.

The extension to the trading estate can provide for a range of business types both industrial and office based to build on and develop the current economic success of Marsh Barton. In addition to this, the proposed Matford centre has the potential to provide support and office business uses associated with activities in Marsh Barton as well as the potential to become a business destination providing the facilities to support a successful business address such as a hotel, food and drink and a public transport hub.

EDUCATION

Education uses are located where they can take advantage of flat topography and where they can best serve the new communities through safe easy access and as a focus to communities. The exact requirement in terms of pupil numbers and the resulting size and form of the schools will be dependant on demand and a developing education strategy for the city, however the location and strategy for schools within the masterplan are designed to accommodate this flexibility whilst promoting sustainable growth.

Two 2 form entry primary schools and associated open space/playing fields have been allowed for in the masterplan. One is located on each side of the A379 to the north and the south, the benefit of this is that not only will this provide primary education in the heart of both the key development areas within walking/cycling distance but also avoid unnecessary crossing for young children of the A379, which although changed in nature and layout will remain a busy road.

The primary school in the northern area is ideally located on the 'Green Lanes' network and central to both the existing and proposed Alphington communities and the proposed Matford Valley community. The location of the school also helps to incorporate the Scheduled Monument (SM) into the growth of the city with a school design and layout which is sensitive to the setting of the monument.

The primary school in the southern area is located centrally to the proposed East Matford neighbourhood and adjacent the district centre, this affords easy walking and cycling access for East Matford and parts of West Matford with the EPT link connecting other parts of West Matford via Matford centre.

Secondary education for the growth area is provided by a 9ha site suitable for a secondary school or through school provision if the city's strategy is to combine primary and secondary in the growth area. The location of the proposed secondary school is situated on a reasonably flat site well connected to the growth area by the proposed 'Green Lanes' network. Other suitably flat sites south of the A379 were investigated but it was felt that unlike primary schools the location of the secondary school in these locations would prevent delivery of permeable and compact neighbourhoods. Whereas the location of it as part of the Matford Valley fits generally with the green open space that characterises this area and also helps to protect the setting of the Scheduled Monument by maintaining long distance views of the Scheduled Monument area. As with the South Alphington local centre the proposed secondary school location also delivers flexibility for different growth scenarios, if for example growth was only delivered north of the A379 and the secondary school is no longer required then the school site has the potential to deliver residential and mixed use development as part of compact and sustainable growth. This flexibility and potential growth scenarios are discussed in more detail under section 8.0 'Delivering the masterplan'.

PUBLIC TRANSPORT

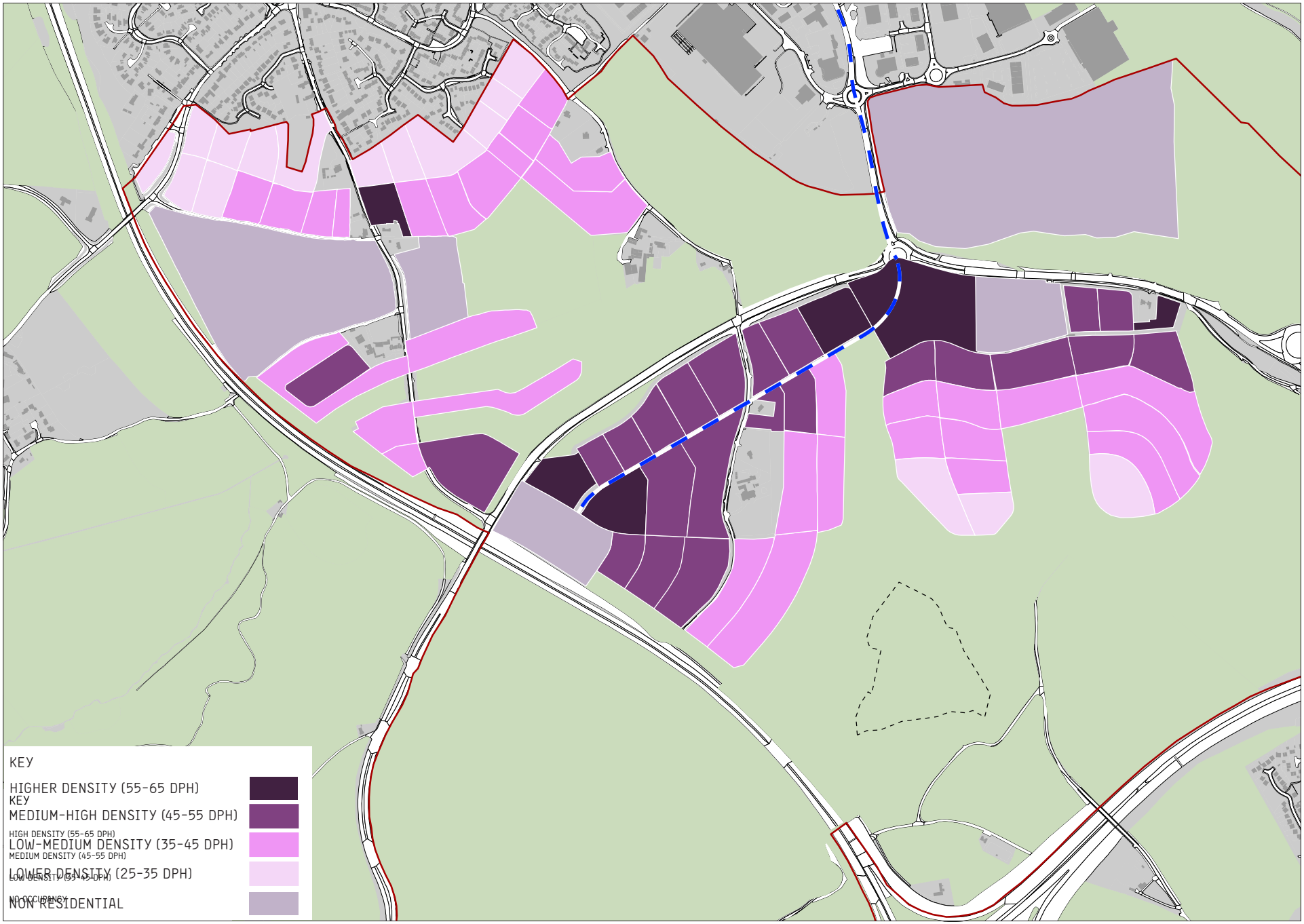
Public transport is key to delivering sustainable growth in south west Exeter. Generally the public transport is integrated with the development but key infrastructure that should be considered in a summary of uses include enhanced public transport (EPT) hubs or nodes located at Matford centre and at the park and ride facility, the dedicated route that connects these nodes and the park and ride facility itself at the end of the EPT route. The park and ride will provide a 1000 space facility located on the edge of the growth area accessed from the A379.

RECREATION & LEISURE

Key to the delivery of well connected sustainable growth is the delivery of a 'Green Lanes' network which is anchored by the creation of a new park space that incorporates Knowle Hill, the Matford Valley with lake/water feature and the Scheduled Monument. This new open space not only links all the proposed neighbourhoods together but provides the key recreational space for the new growth area. It will include formal and informal open space as well as naturalistic landscape setting for the Scheduled Monument, it has the potential to create a strong identity for the growth area and become a local destination for recreation. The proposed park and green lanes are discussed further under section 6.2 'Green Infrastructure Framework'.

Formal sports provision is to be met by the existing formal sports pitches in the Exe valley in tandem with shared school and community sports provision provided within the schools land use areas. Multi-use games areas (MUGA's) can be provided within the proposed Marford Valley Park where they would be centrally located to the new neighbourhoods and formal play areas are to be provided within the residential development areas as required.

Allied to this central park and still connected by the green lanes is the potential for a new Ridge Top Country Park. In addition to the Matford Valley Park, this will provide enhanced opportunity locally for outdoor recreation activity that will serve to help reduce potential visitor pressure on adjacent European sites arising from the new development. The Ridge Top Park could become a new honey-pot site for longer days-out with more specialized recreation uses as well as having the potential for wider health benefits for the existing and new communities. Having a ridge-top park will also safeguard the green ridge of Exeter and enable additional biodiversity enhancements.



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RESIDENTIAL DENSITY PARAMETERS PLAN

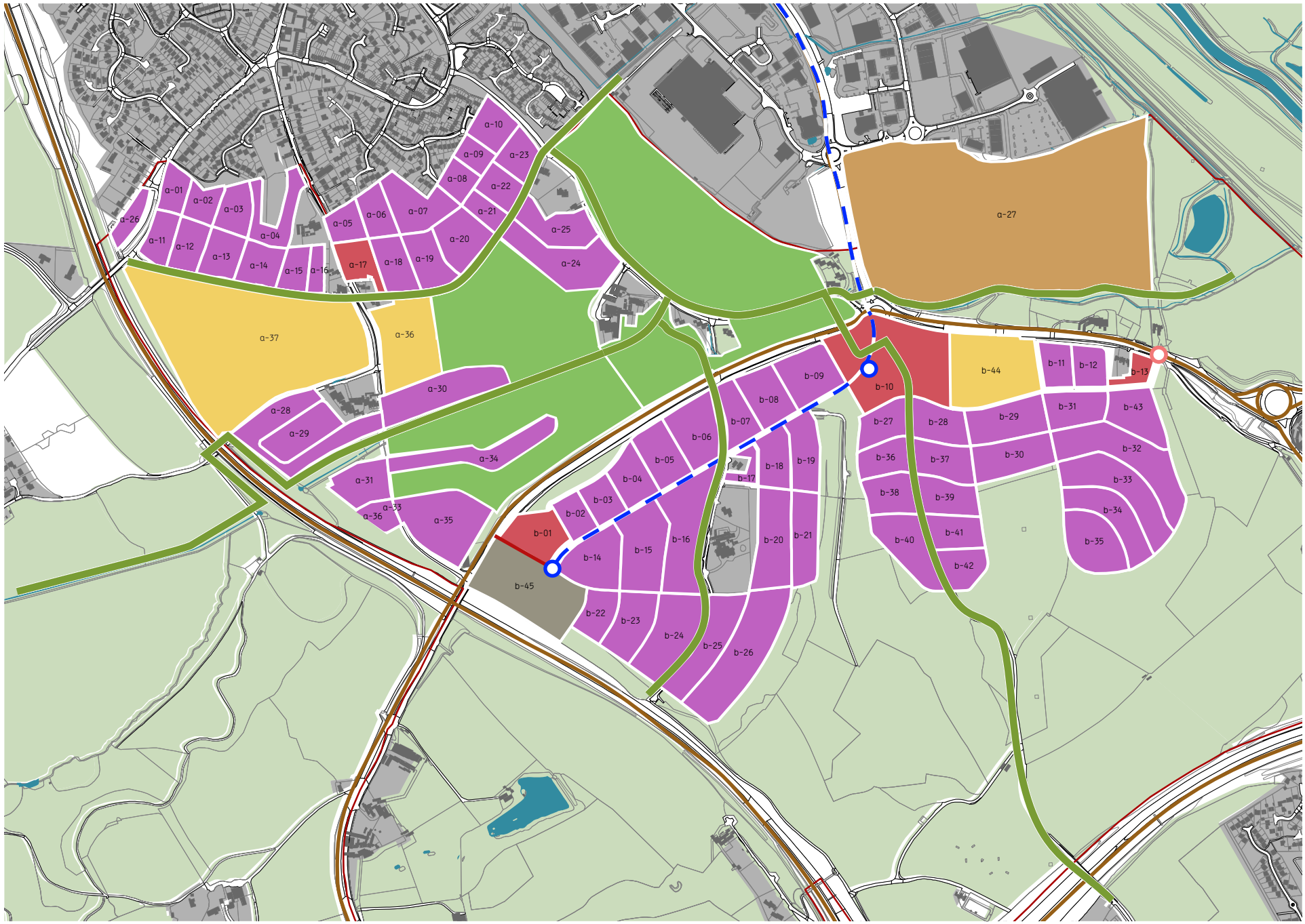
6.1.2 SUMMARY OF DENSITIES

Due to its edge of City location and the adjacent Matford Business Park there is limited built context that can influence the density of the proposed residential development. The only residential context is that of Alphington, this is generally a lower density (typically 25-35 dph) sub-urban development currently on the edge of the city. Although the density of the proposed extension to Alphington will respond to this built context and provide a suitable transition between existing and new housing, the majority of the proposed residential development will provide higher densities. These higher densities will reflect the desire to extend the 'city' rather than add to unstructured low density sub-urban sprawl. Higher densities are also important to promoting sustainable development through compact development, reducing travel distances and promoting community heat & energy solutions.

Despite modern housing development often being lower density, high density urban environments make more efficient use of land and can be attractive and desirable living environments. Victorian terraces are a prime example of this within Exeter. East and West Grove Roads in St Leonards have 82 dph and parts of St James are 57 dph - both desirable residential neighbourhoods.

Key to creating successful high density urban environments is to ensure that they are close to and have good access to quality public green spaces, community facilities, shops and good public transport links. High density streets can also be leafy and attractive if well designed and often provide better quality townscape than lower density unstructured development.

Although the density of residential development will vary across the growth area as illustrated by the 'residential density parameters plan' opposite, an average density target of 40-50 dwellings per hectare (dph) has been proposed. Although this is not in itself particularly dense it allows for a range of housing types, sizes and densities across the growth area promoting sustainable housing and meeting local needs whilst still achieving compact development. The plan indicates the basic principles for distribution of different densities, with higher density housing clustered around the mixed use centres and the key public transport. Medium or the average density housing extending the residential areas away from the centres providing compact legible development with lower density housing responding to aspects of the existing context such as existing housing on the edge of Alphington, topography such as steepening slopes to the southern edge of the extension and the character of the proposed neighbourhoods, for example lower density housing set in the parkland landscape of the Matford Valley. How density helps to define the different character areas is also described earlier in this section under the 6 character area headings.



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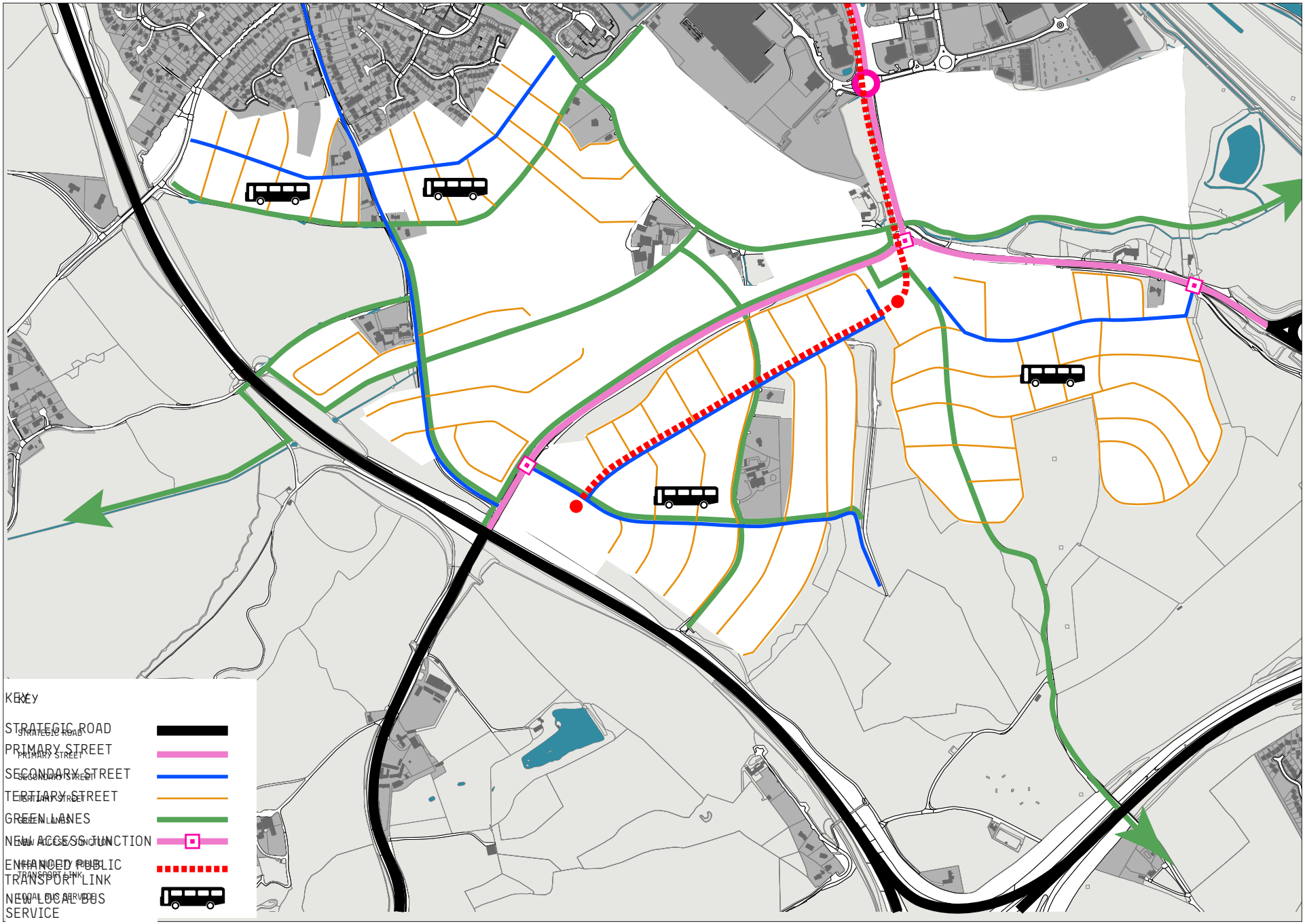
DEVELOPMENT BLOCK REFERENCE PLAN

6.1.3 DEVELOPMENT SCHEDULE

The application of character areas and land use to the strategic development layout allied with the application of appropriate densities across the site to reflect the character areas and uses, can provide an indication of the quantity of development likely to be accommodated within the growth area.
This quantity of development is calculated for each potential plot to produce the development schedule below. The schedule indicates that at the mid range of the densities used about 2800 new homes could be accommodated within the masterplan area. However, this figure may be affected by adopted and emerging local development plan policies within the planning administrative boundaries for Exeter City and Teignbridge District, and the potential outcome of planning proposals submitted to the respective local planning authorities for determination which would reflect local and site specific constraints. Both plan making and the determination of planning applications will also take into consideration views expressed by local residents and others, which may relate to the design and density of development.
While the masterplan identifies a requirement to consider the housing needs of Gypsies and Travellers in the development area of South West of Exeter a specific location is not shown on the Development Block Reference Plan. This is since there is a need to provide flexibility for the provision of one or more sites within the area shown for residential development. The precise location(s) will need to be evidentially based in terms of housing need, site availability, suitability and achievability, and is also likely to need consultation with the Gypsy and Traveller community.

Block reference	Use	Area (ha)	Density Range (dph)	Average Density (dph)	Dwellings @ bottom of density range	Average Density (dph)	Dwellings @ middle of density range	Average Density (dph)	Dwellings @ top of density range	Phase
a-01	Residential	0.460	25-35	25	12	30	14	35	16	1
a-02	Residential	0.46	25-35	25	12	30	14	35	16	1
a-03	Residential	0.62	25-35	25	16	30	19	35	22	1
a-04	Residential	0.80	25-35	25	20	30	24	35	28	1
a-05	Residential	0.48	25-35	25	12	30	14	35	17	1
a-06	Residential	0.57	25-35	25	14	30	17	35	20	1
a-07	Residential	1.04	25-35	25	26	30	31	35	36	1
a-08	Residential	0.43	25-35	25	11	30	13	35	15	1
a-09	Residential	0.36	25-35	25	9	30	11	35	13	1
a-10	Residential	0.46	25-35	25	11	30	14	35	16	1
a-11	Residential	0.56	25-35	25	14	30	17	35	20	1
a-12	Residential	0.64	25-35	25	16	30	19	35	22	1
a-13	Residential	0.67	35-45	35	23	40	27	45	30	1
a-14	Residential	0.66	35-45	35	23	40	27	45	30	1
a-15	Residential	0.47	35-45	35	17	40	19	45	21	1
a-16	Residential	0.28	35-45	35	10	40	11	45	13	1
a-17	Mixed	0.61	55-65	55	17	60	18	65	20	1
a-18	Residential	0.73	35-45	35	26	40	29	45	33	1
a-19	Residential	0.77	35-45	35	27	40	31	45	35	1
a-20	Residential	0.92	35-45	35	32	40	37	45	41	1
a-21	Residential	0.35	35-45	35	12	40	14	45	16	1
a-22	Residential	0.55	35-45	35	19	40	22	45	25	1
a-23	Residential	0.60	35-45	35	21	40	24	45	27	1
a-24	Residential	1.56	35-45	35	55	40	62	45	70	2
a-25	Residential	1.00	35-45	35	35	40	40	45	45	2
a-26	Residential	0.25	25-35	25	6	30	8	35	9	1
a-27	Employment	16.88	n/a	0	0	0	0	0	0	1
a-28	Residential	0.65	35-45	35	23	40	26	45	29	2
a-29	Residential	0.96	35-45	35	34	40	39	45	43	2
a-30	Residential	1.51	35-45	35	53	40	60	45	68	2
a-31	Residential	0.83	35-45	35	29	40	33	45	37	2
a-33	Residential	0.53	35-45	35	19	40	13	45	14	2
a-34	Residential	1.24	35-45	35	43	40	50	45	56	2
a-35	Residential	1.81	45-55	45	81	50	91	55	100	2
a-36	PrimarySchool	1.80	n/a	0	0	0	0	0	0	2
a-37	SecondarySchool	9.07	n/a	0	0	0	0	0	0	4

Block reference	Use	Area (ha)	Density Range (dph)	Average Density (dph)	Dwellings @ bottom of density range	Average Density (dph)	Dwellings @ middle of density range	Average Density (dph)	Dwellings @ top of density range	Phase
b-01	Mixed	0.66	55-65	55	18	60	20	65	22	3
b-02	Residential	0.50	45-55	45	23	50	25	55	28	3
b-03	Residential	0.57	45-55	45	25	50	28	55	31	3
b-04	Residential	0.73	45-55	45	33	50	37	55	40	3
b-05	Residential	0.74	45-55	45	33	50	37	55	41	3
b-06	Residential	1.12	45-55	45	50	50	56	55	62	3
b-07	Residential	0.71	45-55	45	32	50	36	55	39	3
b-08	Residential	0.89	45-55	45	40	50	45	55	49	3
b-09	Residential	1.07	55-65	55	59	60	64	65	70	3
b-10	Mixed	3.21	55-65	55	88	60	96	65	104	4
b-11	Residential	0.54	45-55	45	24	50	27	55	30	4
b-12	Residential	0.54	45-55	45	24	50	27	55	29	4
b-13	Mixed	0.31	55-65	55	8	60	9	65	10	4
b-14	Residential	1.02	55-65	55	56	60	61	65	66	3
b-15	Residential	1.33	45-55	45	60	50	67	55	73	3
b-16	Residential	1.59	45-55	45	72	50	80	55	87	3
b-17	Residential	0.36	45-55	45	16	50	18	55	20	3
b-18	Residential	0.68	45-55	45	31	50	34	55	37	3
b-19	Residential	1.06	35-45	35	37	40	42	45	48	3
b-20	Residential	1.35	35-45	35	47	40	54	45	61	3
b-21	Residential	1.13	35-45	35	40	40	45	45	51	3
b-22	Residential	0.68	55-65	55	37	60	41	65	44	3
b-23	Residential	1.00	45-55	45	45	50	50	55	55	3
b-24	Residential	1.45	45-55	45	65	50	73	55	80	3
b-25	Residential	1.29	35-45	35	45	40	52	45	58	3
b-26	Residential	2.30	35-45	35	81	40	92	45	104	3
b-27	Residential	0.72	45-55	45	32	50	36	55	40	4
b-28	Residential	1.12	45-55	45	50	50	56	55	62	4
b-29	Residential	1.13	45-55	45	51	50	57	55	62	4
b-30	Residential	1.13	35-45	35	40	40	45	45	51	4
b-31	Residential	0.81	45-55	45	36	50	41	55	45	4
b-32	Residential	1.87	35-45	35	65	40	75	45	84	4
b-33	Residential	1.61	35-45	35	56	40	64	45	72	4
b-34	Residential	1.13	35-45	35	40	40	45	45	51	4
b-35	Residential	1.18	25-35	25	30	30	35	35	41	4
b-36	Residential	0.67	35-45	35	23	40	27	45	30	4
b-37	Residential	0.84	35-45	35	29	40	34	45	38	4
b-38	Residential	0.77	35-45	35	27	40	31	45	35	4
b-39	Residential	0.82	35-45	35	29	40	33	45	37	4
b-40	Residential	1.21	25-35	25	30	30	36	35	42	4
b-41	Residential	0.75	35-45	35	26	40	30	45	34	4
b-42	Residential	0.67	25-35	25	17	30	20	35	23	4
b-43	Residential	0.96	45-55	45	43	50	48	55	53	4
b-44	PrimarySchool	2.25	n/a	0	0	0	0	0	0	4
b-45	ParkandRide	2.48	n/a	0	0	0	0	0	0	3
Total	Resi & mixed area	65.65								
Totals		**100.52**		**38**	**2492**	**43**	**2812**	**48**	**3139**	



MOVEMENT FRAMEWORK PLAN

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6.2 ACCESS & MOVEMENT FRAMEWORK

To create a place that promotes sustainable transport methods by facilitating and encouraging walking, cycling and the use of public transport as the primary means of transport

The design of the movement framework actively encourages a modal shift away from use of the private car to sustainable modes of transport. The benefits of this are:

- to reduce vehicle emissions and use of fossil fuels;
- to minimise the impact of cars on the local and strategic road network;
- to improve health both through encouraging people to walk and cycle; and
- to encourage much greater social interaction and chance encounters.

In order to achieve this there needs to be obvious advantages in using sustainable modes of movement over using the car, including cost, ease of movement, journey time, flexibility and reliability.

The movement framework seeks to achieve this objective through:

- creating a permeable network of high quality pedestrian and cycle routes, allowing easy and safe movement between homes to desired destinations;
- creating an excellent public transport network that allows regular, convenient and quick access into the city centre and other key destinations;
- where possible reducing permeability for cars and minimising the ability for vehicular through-movement between strategic roads. Although access to homes by car is maintained, using the car to go to local shops, schools or community facilities is discouraged by reducing internal vehicular permeability. This also minimises rat-running through the area creating a safer and more attractive living environment.

WALKING & CYCLING

As the key aim of the access and movement framework is to promote sustainable movement patterns, the framework sets out the principles for a highly permeable footpath and cycle network that can be easily accessed from all homes and that connects to key destinations such as local facilities, schools and public transport nodes as well as connecting into the wider cycle network. This network will provide for, encourage and develop sustainable movement patterns.

Green Lanes network

A key part of this network is the creation and strengthening of a series of key pedestrian and cycle routes which integrate with the green infrastructure and are described as Green Lanes. These utilise existing lanes or footpaths that can be changed to pedestrian only or priority to create strategic pedestrian/cycle corridors that run throughout the growth area and are easily linked to tertiary streets and other pedestrian routes. These green lanes are discussed in more detail within the Green Infrastructure Framework.

Connecting the development north and south of A379 particularly for journeys to school.

A key role for the pedestrian and cycle network is to overcome the potential barrier of the A379 and connect the development North and South of the road ensuring that walking and cycling is encouraged and made easy. This becomes vital where residents of the growth area will need to use and cross the A379 as part of their route to school.

Change the nature of the A379 - Utilising the A379 as a key pedestrian and cycle connection

A key part of the walking and cycling network will be the utilisation of the A379 primary street as part of the network. In order to maintain the connections created by the Green Lanes and ensure that the development is sustainably connected within the growth area and to the wider city, the development will need to change the nature of the A379. By changing its nature which is discussed in more detail under Vehicular Access, it is hoped that it can become a usable space for pedestrians and cyclists, allowing them to access it from the development, move along it and cross it safely transforming it into a functioning part of the walking and cycling network.

PUBLIC TRANSPORT

To ensure that growth is sustainable it is essential that new development is well served by public transport. The Masterplan should take advantage of and improve existing modes of public transport whilst supporting new facilities where viable. If the key aim of the movement framework is to be achieved then proposed development must be well connected to the city centre, other key employment areas and the wider public transport network so that reliance on the private vehicle is reduced due to the provision of a viable alternative for all lengths of journey. The key new and enhanced public transport proposals are outlined below.

ENHANCED PUBLIC TRANSPORT (EPT)

Plans exist for an Enhanced Public Transport (EPT) service to serve Exeter; the aim for the SW Exeter growth area is to extend the proposed EPT route serving Marsh Barton to serve new development in the growth area. The access & movement framework proposes to extend the EPT on a dedicated route into the heart of the development stopping at the district centre and continuing through the development south of the A379 with a final destination at the proposed new park and ride facility adjacent the A30. This new direct route will form focus for development with potential stops along the route serving the development.

BUS SERVICES AND PARK & RIDE FACILITIES

All parts of the South West Exeter development will need to be served by a frequent bus service within a reasonable walking distance to achieve a sustainable development. New development to the north of the A379 can be served by improvements and extensions to the existing bus service. It will also be able to access the EPT on Bad Homburg Way, although the nearest stop for this is likely to be further than the generally accepted walking distance to a bus stop for the majority of the development. The development south of the A379 will primarily be served by the EPT. If this does not provide a sufficient service for all of the development, an additional bus service or extension of an existing service may be required to achieve the necessary frequency and service for the development.

A key part of this public transport network for the growth area is the provision of the new park and ride facility within the new development south of the A379 at the intersection of the A30 and the A379. The new facility will provide 1000 spaces and will be accessed by the proposed new junction off of the A379 serving the new development, and connected by the EPT to the city centre and beyond. This new facility will replace the existing park and ride at Matford and will serve traffic currently travelling along the A379 helping to change the nature of this road. These proposals will also need to be considered in relation to Devon County Council's strategy for bus services to serve future development in Exeter.

RAIL SERVICES

A rail station is proposed at Marsh Barton as part of Devon County Council's "Devon Metro" proposals and this has been identified as a potential traffic mitigation for the South West Exeter development. Whilst its distance from the Masterplan area may limit its use by people living and working at South West Exeter, it has the potential to serve commuters to Marsh Barton from the wider area that currently travel by car, encouraging modal shift in the growth area.

VEHICULAR MOVEMENT
ACCESS AND NEW JUNCTIONS

Although pedestrian and cycle access to the A379 will be encouraged, vehicular junctions onto the strategic A379 have been limited. This firstly seeks to encourage residents to make short distance journeys to local shops, schools and facilities by foot or cycle, minimising car use. Secondly, given the busy nature of the A379, limiting junctions will reduce potential queuing which could impact on the operation of adjacent junctions and areas of the city such as Marsh Barton.

The proposed development north of the A379 will be accessed from an improved and/or realigned Chudleigh Road junction and from a new junction off Shillingford Road to the North. The extension to Alphington will be served by a new secondary road linking Shillingford Road and Dawlish Road with Tertiary roads connecting to the existing street pattern of Alphington where sensible. The other pockets of development north of the A379 will be accessed via tertiary roads directly off of Chudleigh Road.

The proposed development south of the A379 is to be accessed by two new vehicular junctions off the A379, one to the west and one to the east. These are supported by the reorganised junction where Bad Homburg Way meets the A379. The junctions are located so that they provide access to the development for traffic from the east and the west but discourage the use of the private vehicle where possible. Their location will prevent easy vehicular access from the development to Bad Homburg Way with the aim of encouraging use of the EPT. The exact location of these junctions will be determined when development comes forward but they should achieve these aims. The three junctions will operate as follows:

- Development in the West will be accessed from a new junction off of the A379 with a secondary road access to the district centre and to the existing Trood Lane Waste site.
- The development in the East will be accessed from a new junction off of the A379 with a secondary road access to the primary school and district centre.
- The reorganised junction at the junction of Bad Homburg Way and A379 will replace the roundabout with a signalised junction roads with bus only access in and out of the development via the dedicated EPT route.

Note, the detail of proposed traffic arrangements and highway improvements will need to be discussed and agreed with appropriate parties through any potential application process.

The road network will allow vehicle access to the district centre for access only but should discourage use of private vehicles in favour of public transport and the permeable and well connected pedestrian and cycle network.

CHANGING THE NATURE OF THE A379

The A379 carries a large volume of traffic and currently acts as a barrier between the north and south of the South West Exeter development. The road has an important function and serves the Marsh Barton Trading Estate. In order to improve connections between the north and south of the A379, it is proposed to change the nature of the road, whilst retaining its important function. In order to change the nature of this road and integrate it with the city these initial steps are suggested:

- Reducing vehicle speed from 40 to 30 mph
- Narrowing of carriageway but maintaining number of lanes
- Improved footways and cycleway both sides
- Creation of a central reservation to reduce the feeling of width and allow easier crossing
- Planting in central reservation and/or verge between footway and carriageway to provide a more intimate space and add a feeling of safety
- Pedestrian crossings at new junctions and to maintain Green lanes network
- Replace Devon Hotel roundabout with signalised junction roads (4 entry points, no access to Dawlish Road). The aim of this is to help with slowing the traffic, improving pedestrian movement and integrating the junction with the new development.

It is hoped that these changes will allow the road to become a usable space for pedestrians and cyclists, allowing them to access it from the development, move along it and cross it safely creating a functioning part of the movement framework and key part of a connected development.

The proposed changes to the nature of the A379 cited above do not preclude consideration of additional or alternative potential proposals that would support connectivity between growth north and south of the road. While not assessed as part of this masterplan, provision of a cycle / footbridge could provide an additional method of sustainable movement for walkers and cyclists in planned development South West of Exeter.

PARKING

Parking design will form part of the detailed design of development or be guided through design coding however generally adequate parking provision will be achieved through a number of ways. Firstly it is important that parking provision for residential areas is at an appropriate sustainable standard sufficient to prevent problem parking, we are trying to reduce car usage not necessarily car ownership (although this may be a long term goal), however in mixed use and employment areas it is feasible that reduced commuter parking could form part of the strategy for reducing car use and encouraging modal shift away from the private car.
Parking strategies should reflect the densities and typologies of residential areas with parking provision generally provided through a mix of on-street and on-plot parking. On-street parking is promoted on primary and secondary streets as this helps to calm traffic and create more colourful and busy streets whilst providing security through overlooking. On-street parking can be achieved through parallel or perpendicular parking where streets widen to allow parking courts. On –plot parking can be achieved through built in garaging fronting tertiary streets or driveways where housing is set back. Rear parking courts are generally avoided in favour of on-street parking but can work in specific cases if carefully designed and integrated within housing layouts. Housing at higher densities will need to take extra care to demonstrate how parking is to be successfully addressed; innovative approaches to parking (both in regard to numbers and form) will be required.

STREET HIERARCHY

To achieve the aims of the access and movement framework and deliver sustainable development it is vital that the development is legible and easy to navigate as well as being permeable, to achieve this it is important that there is a clear hierarchy of streets. The design of these streets, the layout, surface materials and street furniture should clearly reinforce the urban structure, defining the role that the street plays and its desired function. A legible permeable network of streets will encourage people to walk, cycle and use other modes of transport as they will be able to navigate easily through direct permeable routes. The four levels of proposed hierarchy of streets are set out below and illustrated on the Access and Movement Framework plan.

- Primary or Main streets
- Secondary or Local streets
- Tertiary or Destination streets
- Green lanes

The following descriptions use example photographs and sections to give an indication of the nature and character of each level of the street hierarchy however these are not prescriptive and there will be variations within each level of the hierarchy depending upon the character area it is in, changes in function and the detailed design of the new neighbourhoods.

PRIMARY OR MAIN STREETS

Description & function

Busy, spacious, leafy strategic city streets that link neighbourhoods and provide access into and out of the city for all vehicles. These streets need to accommodate significant vehicular movement whilst maintaining a safe and attractive pedestrian and cycle environment.

USERS

- Pedestrians
- Bicycles
- All vehicles
- Buses
- Enhanced public transport

CHARACTERISTICS

- Two way carriageway (minimum, often 3 or 4 lanes)
- wide pavements and cyclepaths
- Central reservation where more than two lanes
- street tree planting within central reservation or pavement/verge zone
- regular pedestrian crossing points
- potential for buildings of sufficient height and with consistent frontage to create a strongly defined street.

SECONDARY OR LOCAL STREETS

DESCRIPTION & FUNCTION

Active, colourful streets providing access to residential and business streets and properties, vital to internal movement across the area but with no wider strategic movement role. These streets are designed to avoid through-traffic and rat-running, creating a more pedestrian/cycle and living environment Private vehicles, buses on specific routes, service and emergency vehicles, bicycles, pedestrians.

USERS

- Pedestrians
- Bicycles
- Private vehicles
- Buses on specific routes
- Service and emergency vehicles

CHARACTERISTICS

- two way carriageway;
- on street parking - parallel or at 45/90 degree;
- wide pavements with kerb;
- narrow privacy strip/garden;
- street tree planting within parking or pavement zone;
- buildings of sufficient height and with consistent frontage to create a strongly defined street.

TERTIARY OR DESTINATION STREETS

DESCRIPTION & FUNCTION

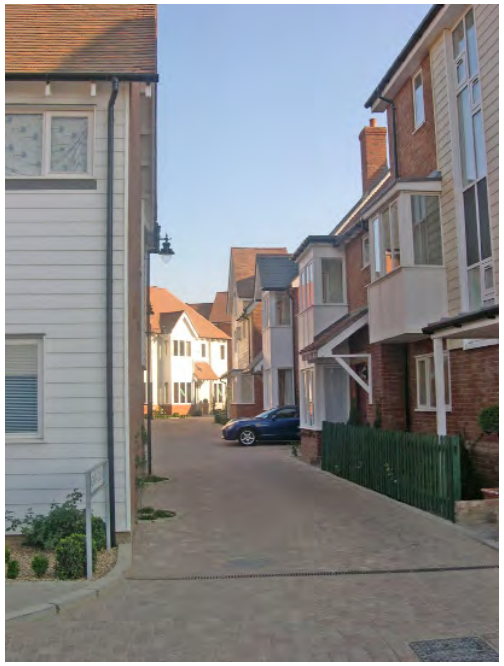
Quiet, shared surface residential streets, often with no through traffic, creating spaces for interaction and play as well as movement. Many of these streets will link directly into the wider green infrastructure network encouraging residents to make local journeys on foot or by bike without having to use the road network. Tertiary or destination streets will be designed in the following way:

USERS

- Pedestrians
- Bicycles
- Private vehicles
- Emergency vehicles

CHARACTERISTICS

- pedestrian priority shared surface
- minimal on street parking
- narrow privacy strip or buildings fronting directly onto the street
- street tree and other planting where possible



GREEN LANES

DESCRIPTION & FUNCTION

Permeable network of footpaths and cycleways linking homes and businesses with key destinations. These will vary in width and character from the strategic wide cycle and footpaths which will often utilise green infrastructure corridors or existing lanes to narrow intimate footpaths between buildings. Often overlooked to create safer links, this finer grain of permeable footpaths have not been indicated on the access and movement framework plan as they would be defined during detailed design.

USERS

- Pedestrians
- Bicycles

CHARACTERISTICS

- Footpath and cycle route
- Separation/definition of footpath from cyclepath along busy routes
- Often planted or utilising green infrastructure corridors

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GREEN INFRASTRUCTURE FRAMEWORK PLAN

6.3 GREEN INFRASTRUCTURE FRAMEWORK

The Green Infrastructure (GI) Framework seeks to:

- **Tie in with the Exeter & East Devon Growth Point GI Strategy** - Creating a cohesive network that joins with other existing green frameworks and green proposals throughout the city of Exeter.
- **Encourage sustainable movement** - facilitating and encouraging walking, cycling and use of public transport as the primary means of movement;
- **reinforce local identity and distinctiveness** - celebrating and integrating those elements within the landscape that can strengthen and reinforce local identity, distinctiveness and character, in particular the green lanes, Matford Brook, hedgerows and trees;
- **enhance biodiversity** - protecting, enhancing and creating wildlife habitats and establishing a network of continuous wildlife corridors connecting them;
- **strengthen community and cohesion** - creating green space and movement networks that encourage social interaction;
- **promote health and well being** - creating an environment that promotes healthy living and a sense of well being for the local residential and business community;
- **establish multifunctional green space** - ensuring each space performs a range of compatible functions;
- **manage the environment** - using Green Infrastructure to manage flood risk, microclimate and mitigate impacts of major infrastructure.

The GI Framework plan, opposite sets out the key existing and proposed formal and informal green spaces along with desired movement and wildlife corridors that help achieve the above objectives. Each of these key features are described in more detail below.

FORMAL OPEN SPACE

Formal sports provision is to be met by the existing formal sports pitches in the Exe valley in tandem with shared school and community sports provision provided within the schools land use areas. This will include:

- **Secondary School** - The proposed secondary school will have a range of formal sports facilities and outdoor pitches. Every effort should be made to make these facilities available to the public for use when not in use by the school. An excellent example of where this works well is at Exeter University where pitches and sports facilities can be hired out when not in use by the University making it a hub of activity and busy well into the evening. This arrangement could benefit both the local community and the School and means of achieving this must be actively sought.
- **Primary School** - the proposed primary school may offer opportunity to provide shared formal open space and facilities with the community. Design and delivery of the school should facilitate this.
- **Equipped Childrens Play areas**- although not illustrated on the plan, equipped childrens play areas should be located throughout the masterplan area, with equipped play areas designed as part of residential development to be within 500m of all homes and in accordance with local requirements.
- **Existing formal sports provision** - Formal sports provision may be required as part of the development in addition to existing provision at the Exe estuary park. This park accommodates several formal sports areas that can be utilised by the inhabitants of the proposed development. Good pedestrian and cycle links to these facilities is provided by the proposed green lanes network.
- **MUGAS** - Can be provided within the proposed Matford Valley Park where they would be centrally located to the new neighbourhoods.

INFORMAL OPEN SPACE/STRUCTURAL LANDSCAPE

Informal open space and its associated pedestrian and cycle links provide the main focus and structure to development and actively stitch the built environment together. Informal open spaces can be separated into 'Parks' and 'Ribbons'.

The Parks: are defined, distinct and sizeable open spaces within the development. They will be well overlooked with excellent access and a range of informal recreational facilities. Proposed Parks include:

- **Matford Valley Park** - informal open space associated with the existing Matford Brook and the proposed new water feature/lake. This park is the key piece of green infrastructure proposed for the heart of the growth area and fulfils several key functions - the primary linking mechanism connecting the residential neighbourhoods with foot/cycle paths, creates a strong identity for the growth area, provides an important recreational focus;
- **Knowle Hill** - Informal sloped open space forming an important landmark and feature of the Matford Valley Park character area and an opportunity for views of the area;
- **Country Park** - This area will help mitigate the impacts of recreational pressure on the European sites at the Exe Estuary and Dawlish Warren and

provide enhanced opportunity locally for outdoor recreation and improved general access to the countryside and will give local residents the chance to interact with biodiversity.

The Ribbons: are linear green spaces, often with a linking function but also with a recreation/leisure function in their own right. The Ribbons are also vital to creating consistent wildlife corridors and green routes through development. These ribbons vary in their width along their length, in places being little more than a footpath but widening in places to spaces for activity, play and sitting.

GREEN LANES NETWORK

Key to successful and sustainable growth in the south west area is the ability to connect potential neighbourhoods, this could be difficult due to road infrastructure, topography and a range of natural and man made constraints. To overcome this the proposed masterplan utilises green infrastructure alongside other functions as the key to well connected development. This is achieved through the creation and improvement of existing 'green lanes', these will take advantage of existing well established tree and hedge lined lanes transformed into key pedestrian and cycle routes. These will fan out from the pivotal Matford Valley park at the centre of the development. These key routes will connect all of the new neighbourhoods to eachother, the mixed use centres and most importantly the schools. The proposed green lanes are indicated on the Green Infrastructure Framework plan and will utilise the following lanes:

- Old Matford Lane - Connecting the proposed East Matford neighbourhood;
- Little Silver Lane - Connecting the proposed West Matford neighbourhood;
- Markham Lane - Connecting the South Alphington extension;
- Dawlish Road - running along the foot of Knowle Hill directly connecting all of the above green lanes.

PRODUCTIVE LANDSCAPE & ALLOTMENTS

It is important for any sustainable community that it provides a proportion of productive landscape, this can take the form of suitably sized private or communal residential gardens to promote 'grow your own' at home along with allotments available to those properties such as apartment blocks who have no growing room or those who simply want more. It is also possible that public realm can be designed to provide a level of productive land however this can be difficult to manage and is best suited to an area of public realm that falls clearly within a managed development - but is worth investigating at a more detailed level.

The provision and cultivation of productive land can promote sustainable development in a number of ways, environmentally through increased biodiversity and a level of self sufficiency which can reduce the carbon footprint of a neighbourhoods inhabitants, socially through interaction at communal and allotment gardens, and economically through potential sales of local produce either on a community or commercial scale selling to local food businesses.

Detailed development of these new neighbourhoods should incorporate the productive landscape described above but at this stage a location and space for allotments is indicated on the Green Infrastructure Framework plan.

A range of criteria have been considered in positioning the allotments. These locations have been selected to be in close proximity to existing or proposed housing and can be delivered in a phased way. Soil quality has been considered along with issues of accessibility.

BIODIVERSITY & WILDLIFE CORRIDORS

The proposed and improved network of green lanes and spaces should be designed and managed in such a way as to promote biodiversity and encourage wildlife movement. Where possible mature hedgerows and trees should be retained and incorporated into the public realm which will help to ensure their protection and appropriate management.

Strategic green corridors or habitat links that have been established include:

- Link between the Exe river valley park and Shillingford Abbot via the proposed Knowle Hill Park and Matford valley;
- The link between the Matford valley area and the Exminster area via the old Matford Lane proposed green lane corridor;
- Other proposed green lanes providing local habitat links within the study area.

6.4 ENERGY AND UTILITIES FRAMEWORK

ENERGY DEMAND

The energy demands for the area have been estimated based on the proposed build out and projections of energy benchmarks through the build out period. For this assessment it is assumed that all phases of development other than Phase 1 would be developed to "zero carbon" standards. Phase 1 is assumed to be developed to meet Building Regulations standards expected to be introduced from 2013.

In all cases the use of high standards of energy efficiency in design of the buildings is assumed to be a given. It is likely that designs and techniques will develop through the period before design of this development so the figures presented could be considered as a worst case scenario.

The energy demand estimates are presented below:

TABLE 1: RESIDENTIAL DEVELOPMENTS

Phase	Dwellings	Heat		Electricity	
		kWh/ dwelling	MWh total	kWh/ dwelling	MWh total
1	472	7,238	3416	4,071	1,922
2	413	6,342	2619	3,898	1,610
3	1055	5,948	6275	3,725	3,930
4	872	5,956	5194	3,716	3,240
Totals	2812		17504		10,702

TABLE 2: MIXED USE DEVELOPMENT

Phase	Non Domestic (m2)	Heat	Electricity
		MWh total	MWh total
1	5,054	265	510
2	0	0	0
3	23,986	1,067	1,067
4	7,232	322	322
Totals	36,272	1,655	1,900

TABLE 3: TOTAL DEVELOPMENT

Phase	Dwellings (units)	Non Domestic (m2)	Heat	Electricity
			MWh total	MWh total
1	472	5,054	3,681	2,432
2	413	-	2,619	1,610
3	1055	23,986	7,342	4,997
4	872	7,232	5,516	3,562
Totals	2812	36,272	19,158	12,601

The requirements of Phase 1 carbon emission reductions, approximately a 44% carbon emission reduction on regulated emissions over Building Regulations 2006 levels, can likely be achieved using individual dwelling/building measures including possibly the use of ground or air source heat pumps together with a mix of photo voltaic and solar thermal panels. All of these technologies will be supported by the existing Feed in Tariff and proposed Renewable Heat Incentive support mechanisms.

The requirements for zero carbon development for Phases 2 -4 inclusive will require a significant element of on site renewable power generation, or approved off site Allowable Solutions renewable power generation. The opportunities for provision of this renewable generation are described below.

LOW AND ZERO CARBON ENERGY OPPORTUNITIES

There are a number of options for meeting this demand to achieve low or zero carbon emissions. The opportunities for this specific site that have been considered include:

A) A DISTRICT HEATING CONNECTION TO THE PROPOSED ENERGY FROM WASTE PLANT ON MARSH BARTON

The development area is approximately 1500 m at the closest point to the proposed EfW plant on Grace Road. This plant is to be constructed to allow for extraction of heat from the process and the heat generated would be very low carbon. This option would likely only be cost effective if the proposed connections from the EfW plant to the Matford Business Park extension proceed. If this happens the sizing of interconnecting pipework to safeguard load (approximately 20MWth of capacity) would enable this low carbon heat connection to be used within the development area. The specific level of carbon reduction this supply could

deliver depends critically on the developing definitions of allowable solutions for achieving zero carbon status. It could be assumed that the minimum contribution would be to reduce the effective emissions from heat supply to the development by at least 75%.

B) LARGE OR MEDIUM SCALE WIND TURBINE INSTALLATION ON THE HILLSIDE ABOVE THE PROPOSED DEVELOPMENT

At first sight the high ground above the development, bounded by the M5 and A30 at its southern corner, presents an excellent opportunity for large or medium scale wind turbine installations. A review of the constraints on wind turbine development in this area was undertaken. This considered constraints including Highways Agency required distances from highways and minimum distances from residential development to avoid issues with noise nuisance as well as existing electrical and wireless infrastructure in the area. This study has concluded that there is no capacity for large or medium scale wind turbine development in this area. This option is therefore discounted. A number of smaller scale turbines could be integrated with the development designs but this would be likely only to address emissions at an individual building rather than development wide level.

C) USE OF ON SITE LOW/ZERO CARBON CHP WITH DISTRICT ENERGY TO SERVE HIGH DENSITY ELEMENTS OF THE DEVELOPMENT

The development could also be served by a dedicated on site energy centre comprising a low/zero carbon combined heat and power system. Such a centralised approach to renewable power generation has been demonstrated to be a very cost effective solution to achieving zero carbon status for high density developments at large scale. It is likely that this energy centre would be constructed to serve Phases 2-4 inclusive and a connection to Phase 1 is not contemplated due to the distance between the two phases. The relatively small scale of Phase 1 would not lend itself to a cost effective centralised solution and therefore use of such a system initially would potentially lead to excessive costs at that stage. Phases 2 and 3 would however lend them selves to a connected approach and the addition of Phase 4 would add significantly to the potential value of such a scheme.

D) LARGE SCALE PHOTO VOLTAIC INSTALLATION

This option could be implemented either as a standalone PV generating station or solar farm, or as a wide scale use of individual building roofs across the development. A suitable site for a solar farm within the growth area could be difficult to find however a innovative solution could be to combine the proposed park & ride carpark and solar array, the two uses can be successfully combined due to similarities in the gridded nature of their layout, combining them would also prevent potential visual impact from separate sites and it is even possible to provide charging points for electric cars powered by the solar array. It would most likely be developed as part of an overall solution including a low carbon heat source such as the district heat connection proposed in a) above. The implementation of this type of measure will depend critically on the commercial environment for PV when the development is being built out. This would include consideration of ongoing revenue support mechanisms as well as future capital costs for PV – which are expected to reduce significantly over the next few years.

E) ON SITE WASTE TREATMENT – HOLISTIC DESIGNS

Emerging technologies and approaches to the delivery of solutions to a range of Code for Sustainable Homes, energy, waste and water, and other environmental issues are leading to an increased interest in the use of on site waste treatment facilities. These systems are not yet fully commercial but approaches which incorporate a holistic approach to utility provision are likely to become well established within the timescales proposed for this development. These approaches may include the opportunity to reduce costs and impacts on local utilities and services including water and waste water connections and waste collection services. For example on site treatment of waste water including also food waste would potentially reduce the costs of water and sewerage connections and reduce the level of bio-wastes being transferred off site. It could also contribute to the provision of low/zero carbon energy by generation of biogas which could generate energy for end users on site. The details of such a system cannot yet be foreseen but the planning for the site should be flexible enough to allow for such a system to be incorporated.

The option, or combination of options, to be selected for the development will be investigated in more detail during the design phases and will also depend on individual building design. At this stage it is important that the planning and layout of the masterplan are such that opportunities to generate renewable energy and form a sustainable energy and heat strategy are not prevented and are designed in where possible. Alongside this a level of flexibility in the masterplan is important so that the potential strategy can respond to emerging and developing technology, policy and market conditions for renewables over the course of future growth.

6.5 ACHIEVING LOW CARBON DEVELOPMENT

Through good passive design and an achievable energy & heat strategy the growth area should be designed to provide low carbon development which will meet future carbon reduction targets. Different phases of development will need to meet different targets dependant on phasing and time frame. For the parts of the masterplan that come forward after 2016 it is likely that zero carbon development will be achieved through Carbon compliance (on-site reduction in emissions) and the remainder through allowable solutions (near or off-site reduction in emissions).

Although the masterplan has been designed to promote sustainable and low carbon development, low carbon development can only be achieved through good passive design of the buildings that take advantage of the framework and flexibility set up by the masterplan. Below we set out in more detail how carbon compliance can be achieved through the principles of good passive design coupled with the potential energy & heat solutions already discussed, enabling development to reduce its energy demand, use energy more efficiently and finally utilise renewable sources of energy whether on-plot or community based.

GOOD PASSIVE DESIGN

- Building orientation and form to maximise solar access to increase daylight in buildings and reduce lighting demand
- Building orientation and form to promote solar heat gain to reduce heating loads in winter whilst shading from solar heat gains in summer to reduce cooling requirements.
- Building orientation and form to maximise the potential for use of PV panels and solar thermal panels on roofs or facades.
- Mix of uses and higher densities of development to promote viability of centralised or community heating solutions.

BUILDING FABRIC

- Highly efficient building fabric including high levels of insulation and air tightness
- Using off-site construction where possible
- Using building materials with low embodied energy (less energy to manufacture)
- Carbon sequestration (locking carbon away) in building materials such as timber, hemp, straw or other grown materials or recycled materials resulting in a carbon saving or 'net negative'
- Utilising thermal mass to reduce heating and cooling demand.

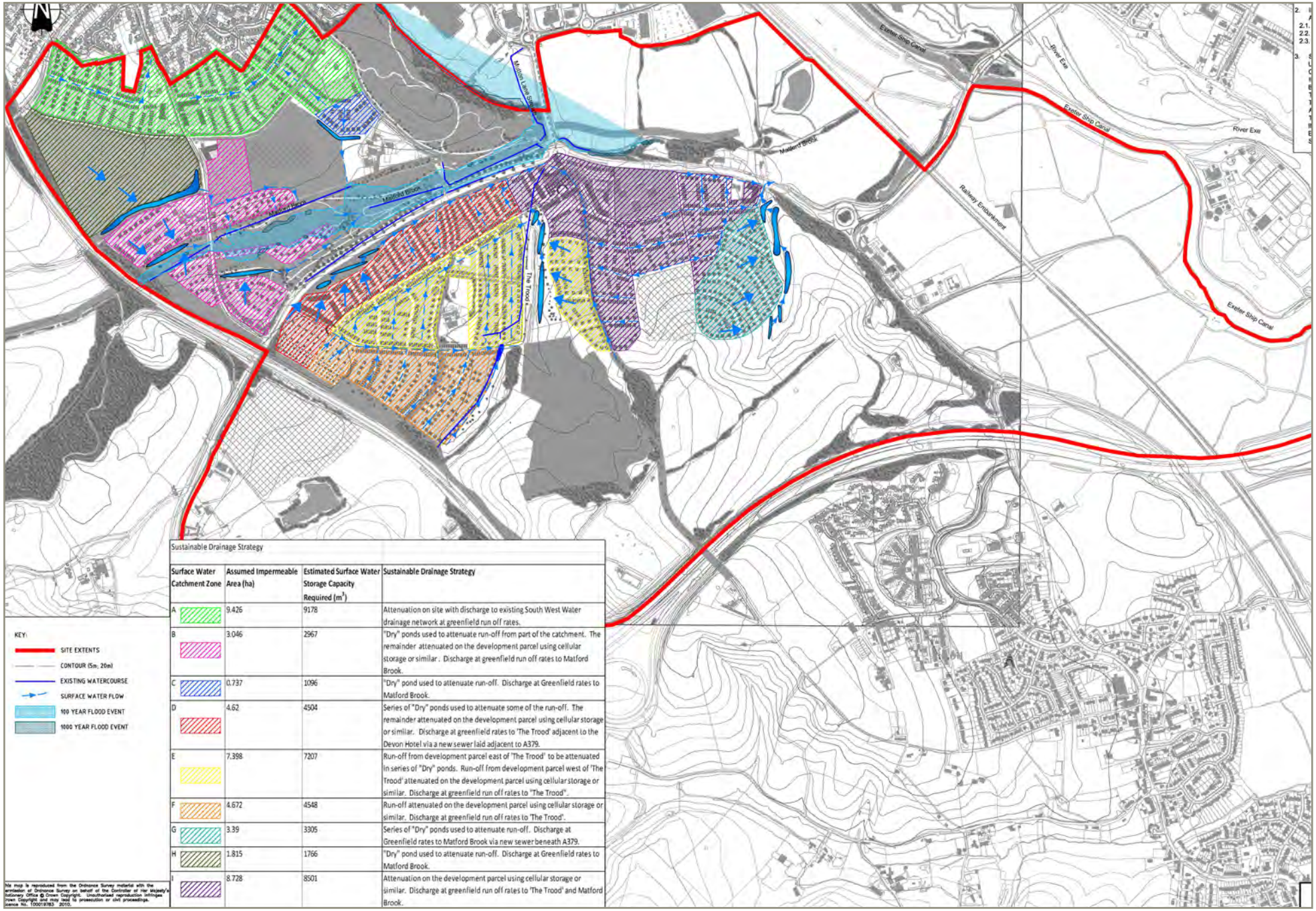
RENEWABLE ON-PLOT GENERATION & LOW CARBON TECHNOLOGIES

- Photovoltaic arrays on south facing roof slopes and/or facades.
- Solar panel water heating on south facing roof slopes.
- Air source heat pumps (ASHP) or ground source heat pumps (GSHP) on each building or dwelling, powered used for these is offset by PV generated electricity with space heating provided by underfloor heating, this has the potential to be reversed in summer to provide some low carbon cooling if required.

ALLOWABLE SOLUTIONS

During early phases of development this strategy for low carbon development will allow the development to meet carbon reduction targets. As the delivery of development moves past 2016 when the carbon reduction targets will require a zero carbon development, it will likely be necessary to provide some of the carbon reduction through allowable solutions. The idea of Allowable Solutions was first proposed by the Department of Communities and Local Government during 2008 as a way of providing flexibility for delivering zero carbon new homes. Prior to that time, the industry was facing a definition (Code for Sustainable Homes Level 6) which required all carbon emissions to be mitigated on site. Although some Code 6 houses have been built, the cost of building to that definition and its impracticability on many sites, has reinforced earlier conclusions made by the UK Green Building Council and others, that delivering zero carbon through an entirely 'on-site' strategy was not the right approach for mainstream housing production. Allowable Solutions offers a way out of that conundrum.

The exact definition of allowable solutions will be set by the Zero Carbon Hub, a non-profit company and public/private partnership established to take day-to-day operational responsibility for co-ordinating delivery of low and zero carbon new homes by 2016. The definition is not yet agreed, however these allowable solutions will likely involve contribution to local schemes off site that can offset the residual carbon production on site, this may be done through a contribution to specific local projects or through a community energy fund set up by the local authority if one is in place.



Sustainable Drainage Strategy

Surface Water Catchment Zone	Assumed Impermeable Area (ha)	Estimated Surface Water Storage Capacity Required (m^3)	Sustainable Drainage Strategy
A	9.426	9178	Attenuation on site with discharge to existing South West Water drainage network at greenfield run off rates.
B	3.046	2967	"Dry" ponds used to attenuate run-off from part of the catchment. The remainder attenuated on the development parcel using cellular storage or similar. Discharge at greenfield run off rates to Matford Brook.
C	0.737	1096	"Dry" pond used to attenuate run-off. Discharge at Greenfield rates to Matford Brook.
D	4.62	4504	Series of "Dry" ponds used to attenuate some of the run-off. The remainder attenuated on the development parcel using cellular storage or similar. Discharge at greenfield rates to 'The Trood' adjacent to the Devon Hotel via a new sewer laid adjacent to A379.
E	7.398	7207	Run-off from development parcel east of 'The Trood' to be attenuated in series of "Dry" ponds. Run-off from development parcel west of 'The Trood' attenuated on the development parcel using cellular storage or similar. Discharge at greenfield run off rates to "The Trood".
F	4.672	4548	Run-off attenuated on the development parcel using cellular storage or similar. Discharge at greenfield run off rates to 'The Trood'.
G	3.39	3305	Series of "Dry" ponds used to attenuate run-off. Discharge at Greenfield rates to Matford Brook via new sewer beneath A379.
H	1.815	1766	"Dry" pond used to attenuate run-off. Discharge at Greenfield rates to Matford Brook.
I	8.728	8501	Attenuation on the development parcel using cellular storage or similar. Discharge at greenfield run off rates to 'The Trood' and Matford Brook.

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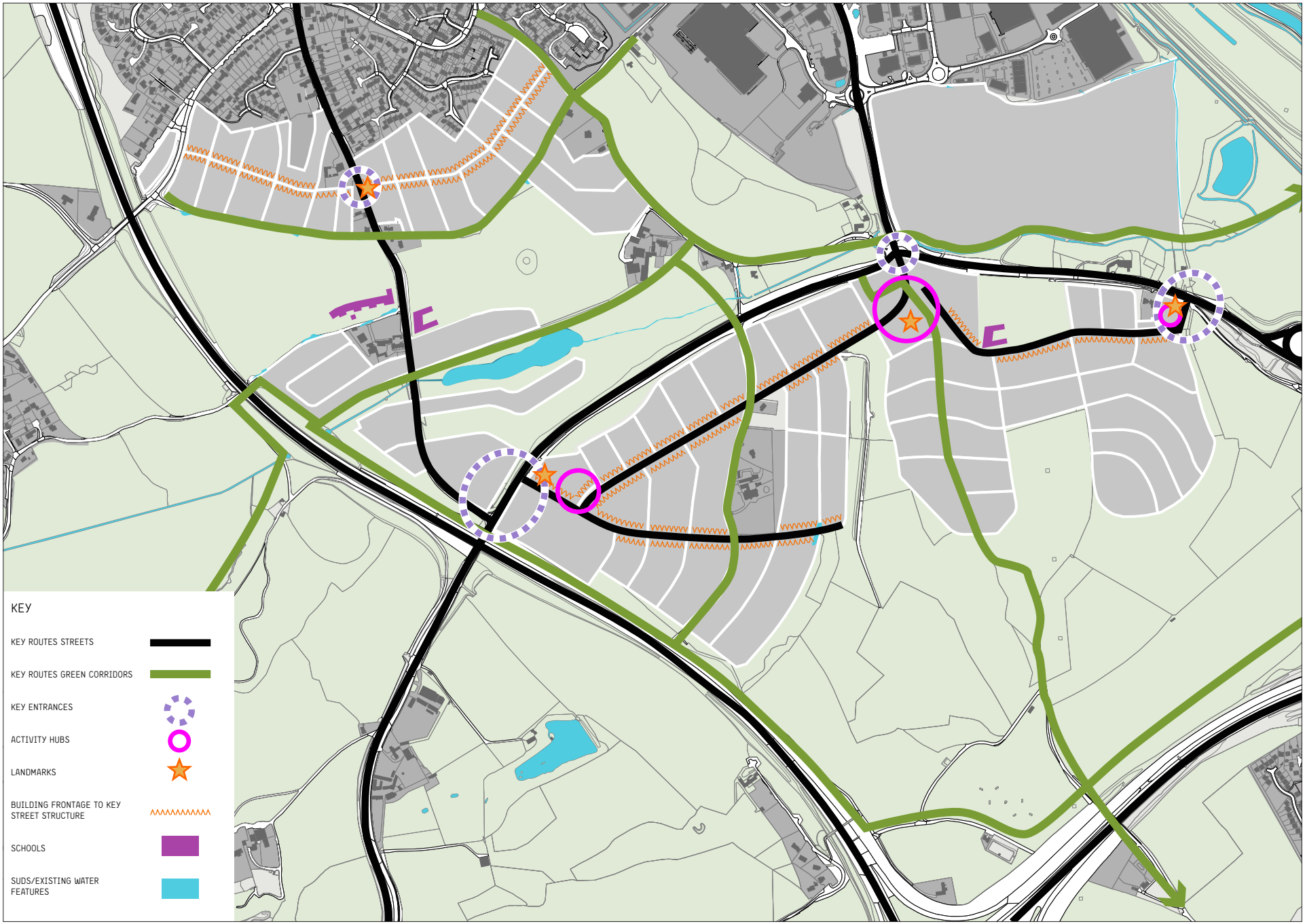
SUSTAINABLE URBAN DRAINAGE STRATEGY PLAN

6.6 SUSTAINABLE DRAINAGE FRAMEWORK

The Green Infrastructure network will form an important part of accommodating SUDS systems as part of multi-functional open space and this has been considered in the location of green spaces within development. However, infiltration rates are likely to be inconsistent due to perched groundwater and impermeable clay layers in the subsoil.

There is green space available within each proposed phase of development that has potential to incorporate a basin, but depending on the results of infiltration testing it might be advantageous to relocate and/or enlarge the green space within that phase to take advantage of the best infiltration results and reduce the percentage of the open space that is occasional wetland (although still seeking to meet the wider Green Infrastructure structure, design objectives and principles). Alternatively Infiltration basins can be covered in some circumstances to provide useable space, but installation and maintenance costs are increased significantly.

To reduce the impact of poor ground permeability on the Masterplan it will be essential to minimise the increase in impermeable areas within the site. To achieve this green roofs and rainwater harvesting/recycling systems should be widely used. Private parking areas, courtyards and gardens should be permeable and where infiltration is poor, underlying cellular systems should be incorporated and linked to recycling systems where possible.



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URBAN FRAMEWORK

6.7 URBAN FRAMEWORK

The Urban Framework, illustrated on the adjacent page sets out the desired built structure of the growth area, including a legible and permeable block pattern and built elements which will allow people to easily understand the place and find their way around. An area with a clearly expressed urban structure will also have a strong image and identity.

The Urban Framework identifies the proposed main streets and spaces that form the basic skeleton of the masterplan area, landmarks, activity hubs and arrival points. The design of development should respond positively to these elements to create a development with image, identity and legibility. In practice this means:

- ensuring that buildings of an appropriate design, scale and use address the key streets and spaces;
- using landmark buildings to emphasise and create key views and vistas and to reinforce important routes or spaces;
- ensuring that building uses, movement and the treatment of the public realm support activity hubs;
- ensuring that arrival points are well designed, attractive and make it easy for people to orientate themselves.

URBAN STRUCTURE

The proposed urban structure is designed to respond to the constraints and opportunities highlighted in the 'context for growth' section and utilise the developable area resulting from the assessment of capacity. Within this developable area development should be structured to provide legible and well connected neighbourhoods, this is achieved by a street hierarchy and structure that promotes the green infrastructure and 'green lanes' above the vehicular streets and achieves a permeable legible pattern of streets that respond to their natural context and reinforce the identity of character areas.

URBAN CENTRES AND IDENTITY

Urban centres or activity hubs are located to serve residential neighbourhoods and promote easy access. This locates them generally quite central to communities and at the intersection of key transport routes. They are within easy walking and cycling distance to reduce car use and promote sustainable modes of transport. These areas will provide a mix of uses and promote activity. Built form in these locations will reflect this with a suitable scale and with active street frontages, the inclusion of landmark buildings in these areas can aid navigation whilst helping create an identity. Key arrival points for the growth area are often adjacent mixed use centres where landmark buildings and activity will help to promote the area as an urban extension of the city with destinations and a strong identity rather than just a sub-urban residential development.

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ILLUSTRATIVE MASTERPLAN

7.0

ILLUSTRATIVE MASTERPLAN

The illustrative masterplan is a tool to communicate how the application of the masterplan study could shape development in the growth area, it is not a detailed layout that responds to every aspect of the growth area in detail, it is simply to give an impression of how the area could be when developed. It shows one potential outcome of the application of the framework plans, other outcomes may be equally valid provided that the fundamental framework principles are adhered to.

As parts of the growth area come forward for development, individual masterplans or development plans will need to be produced reflecting the principles set out by the framework plans. As development is designed and takes place it will inevitably evolve from that illustrated here to reflect the requirements, best practice and market forces of the time however as long as development is guided by the masterplan frameworks it should most importantly be deliverable and produce a sustainable and successful urban extension.

BIRDSEYE VIEW OF THE ILLUSTRATIVE MASTERPLAN LOOKING SOUTH EAST ACROSS THE ALPHINGTON EXTENSION

BIRDSEYE VIEW OF THE ILLUSTRATIVE MASTERPLAN LOOKING EAST ALONG THE PROPOSED KNOWLE HILL PARK

BIRDSEYE VIEW OF THE ILLUSTRATIVE MASTERPLAN LOOKING NORTH

8.0

DELIVERING THE MASTERPLAN

This section sets out how the proposals put forward by this masterplan framework can be delivered . It suggests how the development can be brought forward in a phased approach to reduce up front infrastructure costs and deliver sustainable development.

This phased approach also provides a degree of flexibility for development to be delivered according to demand and viability whilst still achieving successful growth. This phased approach, the flexibility in the plan and the investment triggers suggest two likely growth scenarios, which are discussed below.

8.1 GROWTH SCENARIOS

Development in the south west Exeter growth area will come forward to meet the housing requirements of Exeter and where it is viable to overcome the constraints already discussed in this document. Because of this there are two likely scenarios for growth in the south west Exeter area. The first would provide development north of the A379 potentially delivered in 2 phases, the second then relies on the sufficient demand and the viability of delivering the infrastructure to develop south of the A379.

Either scenario will need to be delivered in phases to ensure the deliverability and viability of the masterplan. To ensure that development is sustainable the phasing will need to alter dependant on which scenario is delivered, this is explained further under section 8.2 'Phasing'.

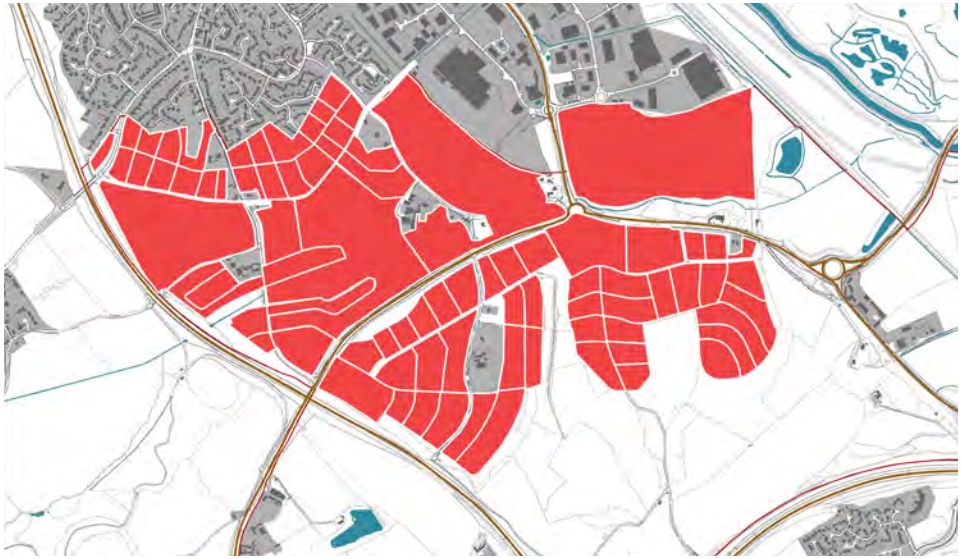
SCENARIO 1 - FULL BUILD OUT

The first scenario is one where the full masterplan is delivered and the full capacity for growth is realised. This assumes that the demand for growth set out in the brief is maintained and that the physical constraints and any issues of infrastructure viability are overcome. All four of the proposed phases are delivered as described in the next section with the potential to deliver approximately 3000 homes.

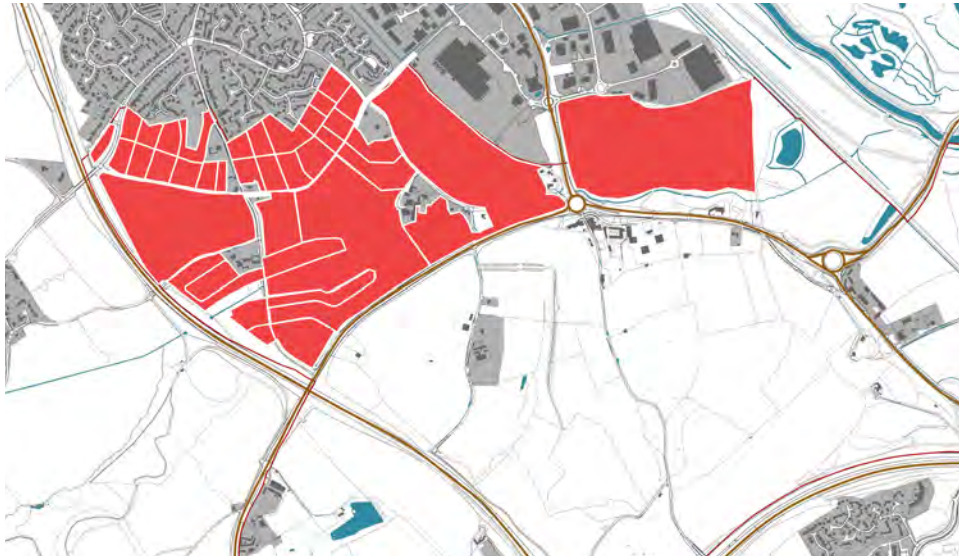
SCENARIO 2 - DEVELOPMENT NORTH OF THE A379 ONLY

The second scenario is one where demand is reduced or met in other parts of the district or city resulting in development only occurring in the most viable and less constrained parts of the growth area. This would result in Phases 1 & 2 with development only being delivered north of the A379 providing approximately 1500 homes.

In the reduced growth scenario it is important that Phase 2 is altered to maintain sustainable and compact development. This would be achieved through the delivery of additional housing on the site that would have been required as a secondary school and increasing the mixed use local centre to include additional community facilities required for this enlarged residential community and potentially replace some facilities that were to be provided in the district centre.



GROWTH SCENARIO 1 - FULL GROWTH AREA BUILD OUT



GROWTH SCENARIO 2 - DEVELOPMENT NORTH OF THE A379 ONLY

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8.2 PHASING

A masterplan of this scale will be delivered in phases. The size, scale and location of each phase will vary according to the intentions of the developer bringing land forward for development and the quantity of land under their control. In an ideal situation all the land would be under the control of a single land owner or a consortium of developers working together with a land equalisation agreement in place. However it is appreciated that this may not be the case and that there; are complexities of land ownership, there may be potential difficulties with landowners coming together to form consortia and in achieving land equalisation, and there may be potential risk of ransom issues that might prevent land coming forward. As such there is a recognised need to provide a way in which all landowners with development interests in the proposed masterplan area can contribute effectively towards meeting the cost of infrastructure that is required across the area and the successful phasing of development.

Notwithstanding the complexities of land ownership it is considered there is realistic prospect for Local Planning Authorities to deliver co-ordinated and comprehensive planned growth South West of Exeter through:

- Flexibility in this masterplan - which identifies two potential alternative growth scenarios 'Full Build Out' and 'Development North of the A379 Only', that could be delivered through four phases for development. Crucially there will be a need to ensure that where development comes forward this does not preclude delivery of subsequent parts of the masterplan area – a consideration applicable to where future development proposals submitted to the Local Planning Authorities may be out of sequence with the masterplanned phases for development.
- The introduction of the Community Infrastructure Levy (CIL) applicable across the board to all new market housing irrespective of growth scenario and phasing, that can provide a mechanism to help fund significant infrastructure required to support growth South West of Exeter.

The masterplan has purposefully split potential planned growth into four phases that will contribute towards achieving sustainable development in accord with the National Planning Policy Framework (NPPF) and which will maintain viability of the urban extension South West of Exeter across the delivery period. The four phases are illustrated on the phasing plans in this section with a brief description of each. They are also summarised in the Phasing Summary Schedule at the end of this section which provides a useful guide to what is delivered at each phase.

The Masterplan illustrates a logical and viable phasing sequence that delivers sustainable development. Nevertheless this may not be the only order that development can be brought forward which still meets the key infrastructure provision. Any alternative approach to phasing will need to demonstrate that development will be delivered in a sustainable manner accompanied by appropriate infrastructure to meet the needs of the development itself, whilst protecting the feasibility and viability of the wider growth area. Any development brought forward out of the sequence suggested will need to be considered carefully to ensure that:

- development does not impact upon the viability of subsequent growth
- development supports the creation of the strategic frameworks set out in the masterplan
- development delivered is environmentally, socially and economically sustainable in its own right
- development is supported by sufficient community facilities and school provision
- development is well connected to existing urban areas with good pedestrian, cycle and public transport links
- development has a demonstrably sustainable drainage strategy
- it avoids development that is overly reliant on the future provision of facilities, services and infrastructure that may not come forward.

Development South West of Exeter must come forward in the context of the National Planning Policy Framework (NPPF) and will need to accord with the key roles of the planning system towards achieving sustainable development:

- an economic role – contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure;
- a social role – supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being; and
- an environmental role – contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.

However, it should be noted that whilst the NPPF places a presumption in favour of sustainable development the NPPF (at paragraph 119) makes clear this does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined. The planned growth South West of Exeter is in proximity to and has potential for harmful impact on statutorily protected nature conservation interests / Europeans sites on the Exe Estuary and at Dawlish Warren. It will be necessary to mitigate these impacts to ensure sustainable development.

The masterplan includes provision for a new country park as a means for mitigating the impacts of recreational pressure on the European sites at the Exe Estuary and Dawlish Warren.

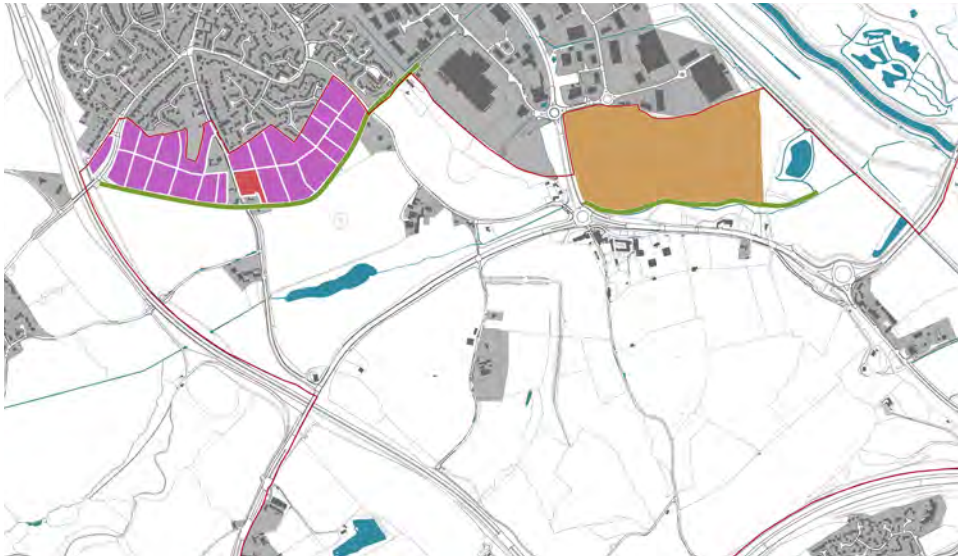
PHASE 1

The Alphington and Matford Business Park extensions can come forward without significant infrastructure costs and can support and expand existing facilities, although a contribution will need to be made to potential road improvements at Alphington Cross and the primary school to be delivered in Phase 2. This phase of development can provide approximately 470 - 600 dwellings in the Alphington extension along with some mixed use facilities such as a shop, cafe and children's/ youth centre. This phase also provides approximately 18 hectares of employment land in the proposed Matford Business Park. All of Phase 1 falls within the Exeter City administrative boundary.

PHASE 2

Phase 2 will require significant investment in infrastructure including a primary school, upgrade of the Chudleigh Road and the delivery of a portion of the Matford Valley Park including water body/lake, however there is the potential for high value housing within the proposed parkland landscape. This phase can deliver approximately 380 - 475 dwellings.

As discussed under 'Growth Scenarios', Phase 2 will need to be different under scenario 2 to ensure that development north of the A379 only, is sustainable without the further development of phases 3 & 4. Under scenario 2 the site that was earmarked for the secondary school (only required in a full build out scenario) becomes additional residential development whilst the mixed use local centre serving South Alphington and the Matford valley will be bolstered with additional facilities. This phase under scenario 2 could deliver approximately 830 - 925 dwellings although



PHASE 1

PHASE 2

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further investigation of transport infrastructure would be required.

PHASE 3

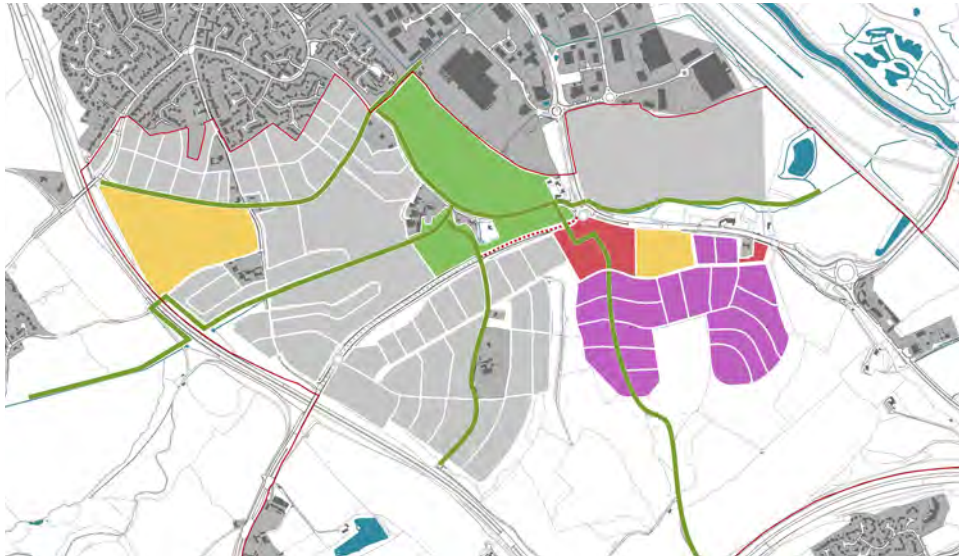
Phase 3 takes development south of the A379 and therefore requires a significant investment in infrastructure including the provision of enhanced public transport links including the new park and ride, as well as the proposed alterations to part of the A379 to 'change its nature' including changing the Devon hotel roundabout into a signalled junction. However this significant investment can deliver approximately 1010 - 1230 dwellings and potential for mixed use development around the park and ride transport hub and the new signalled junction.

PHASE 4

Phase 4 will complete development of the growth area through the provision of the East Matford neighbourhood and the Matford district centre. This phase also sees considerable infrastructure investment in a primary school, community facilities in the district centre, Matford Valley Park including green lane improvements to Old Matford Lane and Dawlish Road and the remainder of the changes to the A379. However a contribution to the primary school and community facilities and other infrastructure necessary to support growth SW of Exeter would be expected through CIL from earlier phases. This phase can deliver approximately 900 - 1070 dwellings and the mixed use district centre.

This phase would also see provision of the secondary school, the final element of infrastructure which would serve and expect to receive a contribution from all phases of the masterplan through CIL in addition to external funding.

PHASE 3



PHASE 4

Strategic Development Option (and housing provision)		Phase	Possible Timeframe (Inclusive) Based on Housing Trajectory Provided by TDC & ECC	Plot References (see reference plan)	Approximate Build Rate (dwellings/year)	No. Dwellings @ middle of density range	Residential Provision inc. half of mixed areas(ha)	Average Residential Density (dph)	Employment Provision (ha)	Mixed Use Provision (ha)	GI Provision	Community Infrastructure	Abnormal Highways/Transport Infrastructure Provision
1	2												
		1	2013 - 2020 Years 2-9	(see reference plan)	Varies - Based on SW Exeter Housing Delivery Trajectory supplied by TDC and ECC.	472	13.44	35	16.88	0.61	Reinforcing the green lane corridor along markham lane and parish boundary including improved pedestrian and cycle ways. Reinforcing green corridor between Knowle hill and the Exe Riverside Valley Park through proposed Matford Business Park extension.	Local centre within Alphington extension to include a shop, cafe, youth centre/childrens centre.	None
885		2	2016-2025 Years 5-14	(see reference plan)	Varies - Based on SW Exeter Housing Delivery Trajectory supplied by TDC and ECC.	413	10.09	41	0	0	Creation of of Matford Valley Park along matford brook to the A30 including the proposed water body (lake), SUDs provision and the SAM.	2 form entry primary school	New junction access to Chudleigh road away from bridge to allow room for left turn lane. Potential upgrade to existing Chudleigh Road including widening improved foot and cyle way to one side.
		3	2019-2026 Years 8-15	(see reference plan)	Varies - Based on SW Exeter Housing Delivery Trajectory supplied by TDC and ECC.	1055	21.90	48	0	1.73	Reinforcing the green lane corridor along Little Silver lane including improved pedestrian and cycle ways and connection to Matford Valley Park.	Allotments	Devon Hotel roundabout removed and replaced with signalled junction with amended road layout. EPT link from Marsh Barton to district centre south of A379. Extension of EPT and new secondary street from district centre to new Park & Ride. New 1000 space park & ride facility. Remodelling works to A379 between A30 bridge and Entrance to Little Silver Lane.
	2812	4	2026 - 2032 Years 15-21	(see reference plan)	Varies - Based on SW Exeter Housing Delivery Trajectory supplied by TDC and ECC.	872	20.22	43	0	3.52	Completion of Matford Valley Park including Knowle hill and green lane along Dawlish road. Reinforcing the green lane corridor along Old Matford Lane including improved pedestrian and cycle ways and connection to Matford Valley Park.	2 form entry primary school. Community facilities within district centre to include retail, cafe, pub, library, community centre & sports hall, a medical centre (including GP & dentists), fire/police liaison facility. Secondary school. Allotments.	Remodelling works to A379 between new Devon Hotel junction and Entrance to Little Silver Lane. Remodelling of Dawlish Road into greenway for pedestrians and cyclists with vehicular access only.
Totals						2812	65.65	43	16.88	5.86			

PHASING SUMMARY SCHEDULE

Abnormal Utilities Infrastructure	Energy & Heat Strategy	Carbon Emissions Target
None	Good passive design as a given. On-plot generation through PV utilising FITs. On-plot renewable heat through GHSP or ASHP and solar thermal utilising RHI.	Compliance with 2013 Building Regs (44% reduction in CO_2 emissions compared to Part L 2006)
None	**Carbon Compliance** Good passive design as a given. Potential for district heat network to serve compact community (possible heat source of centralised GSHP or use of water body). Or on-plot renewable heat through GHSP or ASHP and solar thermal utilising RHI. On-plot generation through PV utilising FITs. **Allowable Solutions** Development could contribute directly (via community energy fund) to potential community energy solutions.	Zero Carbon (150% reduction in CO_2 emissions compared to Part L 2006) residential and school buildings.
None	**Carbon Compliance** Good passive design as a given. Potential for district heat network to serve compact community (possible heat source of CHP or centralised GSHP). On-plot generation through PV utilising FITs. On-plot renewable heat through GHSP or ASHP and solar thermal utilising RHI. **Allowable Solutions** Development could contribute directly (via community energy fund) to potential community energy solutions.	Zero Carbon (150% reduction in CO_2 emissions compared to Part L 2006) all buildings
HP Gas main diversion to integrate with development. MP Gas main diversion to integrate with development. Divert overhead power lines underground along existing alignment.	**Carbon Compliance** Good passive design as a given. Possible extension of heat network to feed commercial uses, school and compact housing in disctrict centre linked to energy from waste plant in Marsh Barton. On-plot generation through PV utilising FITs. On-plot renewable heat through GHSP or ASHP and solar thermal utilising RHI. **Allowable Solutions** Development could contribute directly (via community energy fund) to potential community energy solutions.	Zero Carbon (150% reduction in CO_2 emissions compared to Part L 2006) all buildings

South West of Exeter Appraisal
Phasing Summary Schedule
Based on draft ICCE Infrastrucure Requirements (Phased) dated 23 May 2011, with subsequent reductions provided by LDA Design.

Base Case 35% Affordable, Updated Costs		Phases	1	1	1	1/2	1/2	1/2	1/2/3	1/2/3	2/3	2/3	2/3	2/3	2/3	3/4	4	4	4	4	4	4
			0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
			2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Developable Area (acres)																						
Residential		160.26	8.15	8.15	8.15	8.15	8.31	8.31	8.31	7.54	7.54	7.54	7.54	7.54	7.54	7.54	8.33	8.33	8.33	8.32	8.32	8.32
Employment (N/A)		0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mixed		14.48	0.38	0.38	0.38	0.37	0	0	0	0.61	0.61	0.61	0.61	0.61	0.61	0.61	1.45	1.45	1.45	1.45	1.45	1.45
Total Developable Area		174.74																				
Income	**Value/Acre**																					
Residential land	750,000	120,195,000	6,112,500	6,112,500	6,112,500	6,112,500	6,232,500	6,232,500	6,232,500	5,655,000	5,655,000	5,655,000	5,655,000	5,655,000	5,655,000	5,655,000	6,247,500	6,247,500	6,247,500	6,240,000	6,240,000	6,240,000
Employment (N/A)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mixed	750,000	10,860,000	285,000	285,000	285,000	277,500	0	0	0	457,500	457,500	457,500	457,500	457,500	457,500	457,500	1,087,500	1,087,500	1,087,500	1,087,500	1,087,500	1,087,500
Total Income		**131,055,000**	**6,397,500**	**6,397,500**	**6,397,500**	**6,390,000**	**6,232,500**	**6,232,500**	**6,232,500**	**6,112,500**	**6,112,500**	**6,112,500**	**6,112,500**	**6,112,500**	**6,112,500**	**6,112,500**	**7,335,000**	**7,335,000**	**7,335,000**	**7,327,500**	**7,327,500**	**7,327,500**
Costs																						
Site clearance & enabling works		4,558,000	398,826	398,825	398,825	398,825	182,320	182,320	182,320	169,297	169,297	169,297	169,297	169,297	169,297	169,297	205,110	205,110	205,110	205,110	205,110	205,110
Primary Infrastructure, on site, creation of serviced sites		13,791,000	442,300	442,300	442,300	442,300	665,480	665,480	581,980	868,803	868,803	868,803	868,803	868,803	868,803	868,803	671,207	671,207	671,207	671,206	671,206	671,206
Open spaces		5,555,000	597,745	597,745	597,745	597,745	218,403	218,403	218,403	133,879	133,879	133,879	133,879	133,879	133,879	133,879	261,943	261,943	261,943	261,943	261,943	261,943
Community facilities		14,990,010	268,438	268,438	268,438	920,438	920,438	920,438	1,260,751	1,260,751	992,313	992,313	992,313	992,313	992,313	854,599	514,286	514,286	514,286	514,286	514,286	514,286
Off site utilities reinforcements		2,645,000	103,125	103,125	103,125	196,125	196,125	196,125	307,375	307,375	204,250	204,250	204,250	204,250	204,250	111,250						
Contingency	5%	2,076,951	90,522	90,522	90,522	127,772	109,138	109,138	127,541	137,005	118,427	118,427	118,427	118,427	118,427	106,891	82,627	82,627	82,627	82,627	82,627	82,627
Total Costs		**43,615,961**	**1,900,956**	**1,900,955**	**1,900,955**	**2,683,205**	**2,291,904**	**2,291,904**	**2,678,370**	**2,877,110**	**2,486,969**	**2,486,969**	**2,486,969**	**2,486,969**	**2,486,969**	**2,244,719**	**1,735,173**	**1,735,173**	**1,735,173**	**1,735,172**	**1,735,172**	**1,735,172**
Say		**43,616,000**																				
Land Value		**87,439,040**	**4,496,544**	**4,496,545**	**4,496,545**	**3,706,795**	**3,940,596**	**3,940,596**	**3,554,130**	**3,235,390**	**3,625,531**	**3,625,531**	**3,625,531**	**3,625,531**	**3,625,531**	**3,867,781**	**5,599,827**	**5,599,827**	**5,599,827**	**5,592,328**	**5,592,328**	**5,592,328**
Community Infra Levy (CIL)		15,164,923	771,210	771,210	771,210	771,210	786,350	786,350	786,350	713,488	713,488	713,488	713,488	713,488	713,488	713,488	788,243	788,243	788,243	787,297	787,297	787,297
Net Land Value after addition of CIL			3,725,334	3,725,335	3,725,335	2,935,585	3,154,245	3,154,245	2,767,779	2,521,902	2,912,043	2,912,043	2,912,043	2,912,043	2,912,043	3,154,293	4,811,584	4,811,584	4,811,584	4,805,031	4,805,031	4,805,031
Target Viability Threshold Land Value	(TVT)	69,896,000	3,412,000	3,412,000	3,412,000	3,408,000	3,324,000	3,324,000	3,324,000	3,260,000	3,260,000	3,260,000	3,260,000	3,260,000	3,260,000	3,260,000	3,912,000	3,912,000	3,912,000	3,908,000	3,908,000	3,908,000
Gap funding needed to allow net land value to equl TVT		3,951,733	0	0	0	472,415	169,755	169,755	556,221	738,098	347,957	347,957	347,957	347,957	347,957	105,707	0	0	0	0	0	0
Net Public Sector Position		11,213,190	771,210	771,210	771,210	298,795	616,596	616,596	230,130	-24,610	365,531	365,531	365,531	365,531	365,531	607,781	788,243	788,243	788,243	787,297	787,297	787,297
Discount Rate	3.17%	Disc. Factor	1.000	0.969	0.939	0.911	0.883	0.856	0.829	0.804	0.779	0.755	0.732	0.709	0.688	0.667	0.646	0.626	0.607	0.588	0.570	0.553
Net Present Public Sector Position		8,330,703	771,210	747,514	724,546	272,091	544,235	527,513	190,832	-19,781	284,772	276,022	267,541	259,320	251,352	405,091	509,228	493,581	478,415	463,159	448,928	435,134

Target Viability Threshold Land Value	**£69,896,000**	**equates to**	**£245,965**	**per acre**

Assumptions

Input Cells =			94627
Target Viability Threshold value, residential	£400,000	/ acre	
Target Viability Threshold value, employme	£400,000	/ acre	
Target Viability Threshold value, mixed	£400,000	/ acre	
Target Viability Threshold Land Value			Value per acre required to ensure land is released by landowners, adopting the above minimum land values for the various land uses.
Community Infrastructure Levy (CIL)	£94,627	/ acre	3,110 total no. of dwellings, 35% affordable, equates to 1,088 afordable homes, and 2,022 private homes. Resi area of 160.26 acres providing 12.62 units per acre. CIL of £7,500 per open market house equates to £94,627 per acre.
Gross land area	284.17	acres	
Net Developable Area	174.74	acres	Residential and mixed area reduced by 35% for affordable, 5% for open play area; employment reduced by 10%
Excludes Finance			
Discount rate based on Treasury rate of 3.17%			Based on 20 Year Gilt yield

This is not, and is not intended to be a formal valuation. This advice is exempt from the current RICS Valuation Standards (Valuation Standard 1.2) and as such cannot be regarded or relied upon as a valuation. This advice has not been based on full research of the asset(s). It provides either a guide for feasibility purposes should the asset be placed on the market, or for any current or impending negotiations on price. We would be happy to undertake a formal valuation as instructed, if required, on the basis of a separate instruction.
GVA February 2012

8.3 VIABILITY

A broad viability appraisal of the proposed SW Exeter masterplan has been carried out with cost information provided by Gardiner and Theobald and valuation advice and viability appraisal by GVA Grimley. The viability appraisal is included opposite and the outline cost plan is available as a separate document.

THE DEVELOPMENT APPRAISAL

The Development Appraisal provides a high level assessment of scheme viability. In simple terms it assesses the cost of creating serviced plots of land suitable for value generating development against their open market value. If the combined cost of on site infrastructure plus Community Infrastructure Levy and s106 contributions leaves sufficient land value to make it attractive for landowners to bring their land forward for development the scheme is essentially viable. The constituent parts of the appraisal are explained in non-technical terms below:

- Net Developable Area: this is the area of the site which is available for value generating uses. Land for affordable housing is not considered to be value generating. The area considered as value generating for the purposes of the appraisal is therefore the total area for residential and mixed use development reduced by 35% to account for affordable housing and by a further 5% for open play areas. This approach is justified since the viability assessment is high level based on a masterplan framework and parameters only. The proportion of land take for affordable housing would be subject to detailed design schemes and percentage of affordable housing secured through the planning system. The value of land may also be affected by potential arrangements for funding affordable homes. Therefore at this high level the indicative reduction of 35% for affordable housing is a fair reduction of all areas for housing and mixed use development across the masterplan area.
- Income: This is achieved through the sale of serviced value-generating land at open market value.
- Costs: These arise from creating serviced plots of land. They relate to infrastructure that is necessary to make the site developable including main site accesses, sustainable drainage, green infrastructure and utilities. The costs exclude normal plot development costs (e.g. the costs of buildings, gardens, local streets, parking areas etc.) and strategic off-site infrastructure and other infrastructure, such as the primary schools, which has a wider function. The strategic infrastructure will be funded through the Community Infrastructure Levy (CIL).
- Land Value: This is the total return the land owner will get following sale of land after site servicing costs are subtracted.
- Community Infrastructure Levy: this is a flat rate levy per sq. m of private market residential development equating to around £7500 per home.
- Net Land value after CIL: This is the land value arising once infrastructure and CIL costs have been deducted from income.
- Target Viability Threshold (TVT): This is the Land Value which needs to be achieved for each net developable plot of land in order to be confident that landowners will bring their land forward for development. It is based on the assumption that landowners will only develop their land if the value of each acre of net developable land crosses a certain threshold. In practice the motivation of land owners to develop their land varies considerably.

The scheme will be considered viable if the value of each net developable acre exceeds the target viability threshold after site servicing and CIL costs have been met.

THE OUTCOME OF THE APPRAISAL

The appraisal shows that the scheme is essentially viable. The total developable area reduced to account for affordable homes and open space is 174.74 acres which derives a total potential income from the sale of serviced land of £131,055,000. The cost of creating the serviced land, excluding off site and strategic infrastructure which will be funded by CIL, is £43,615,961 giving a land value of £87,439,040. CIL however will be a direct cost to development at a rate which equates to around £7500 per open market home. The application of CIL creates a further cost to the development of £15,164,923. Globally, the net land value once infrastructure and CIL costs have been deducted amounts to £72,274,117 which exceeds the TVT Land Value of £69,896,000. However the viability modelling of the proposed phasing shows that the infrastructure and CIL costs associated with some phases depresses net land value of those phases below the Target Viability Threshold meaning that, in theory, there is a gap funding requirement to bring net land value of that phase up to a level that will make it attractive for land owners to bring land forward for development. The total theoretic gap funding requirement to allow the net land value of 'non-viable' phases to equal TVT is £3,951,733. Other phases deliver a surplus net land value over and above the Target Viability Threshold after infrastructure and CIL costs are taken into account but the model does not allow this surplus to be carried forward to the next phase.

Local development plans will include appropriate prioritisation of funding of strategic infrastructure in their accompanying Infrastructure Delivery Plan. This could also include the coordination of infrastructure delivery plans prepared by Teignbridge and Exeter City Councils.

Significant up front primary infrastructure costs may potentially be avoided through alternative approaches to procuring utilities infrastructure. It is also recognised that viability considerations could result in a reduction to affordable housing requirements on some parcels of development.

APPENDIX A
STRATEGIC DEVELOPMENT OPTIONS

STRATEGIC DEVELOPMENT OPTIONS

Based on the restraints and results of the capacity study of the site/study area we prepared three strategic development options. These put forward three options for how development could take place within the growth area based on the capacity for development (area shaded grey on the option layouts) which was established through assessment of the site set out under section 4.0 of this report.

The variations in the options are determined by strategic decisions such as location of schools, location and size of local centres and the extent and location of public transport routes and facilities. Option 3 was the chosen option to take forward and create a masterplan framework. All options are set out here with a brief description.

OPTION 1

This development option indicates two primary schools one to the north and one to the south of the A379 and the secondary school to the south of the A379 on a suitable site to the east of the centre. A large district centre and small local centre, an enhanced public transport link to the district centre and through the development to the new park and ride.

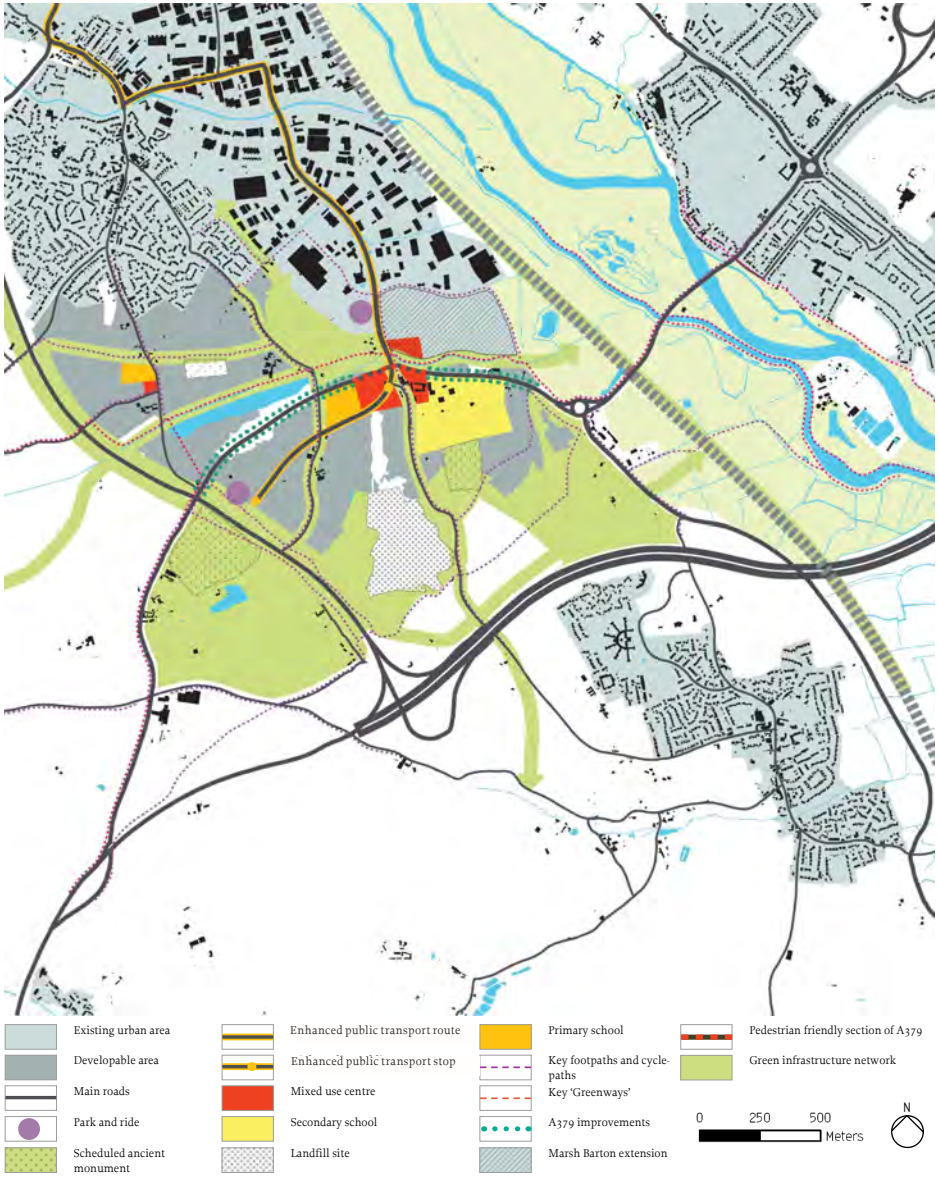
OPTION 2

This development option also indicates the two primary schools and the secondary school to the south of the A379 but on a suitable site to the west of the centre split by a green lane. There is a large district centre and small local centre. The enhanced public transport stops at the district centre and there is no new park and ride proposed.

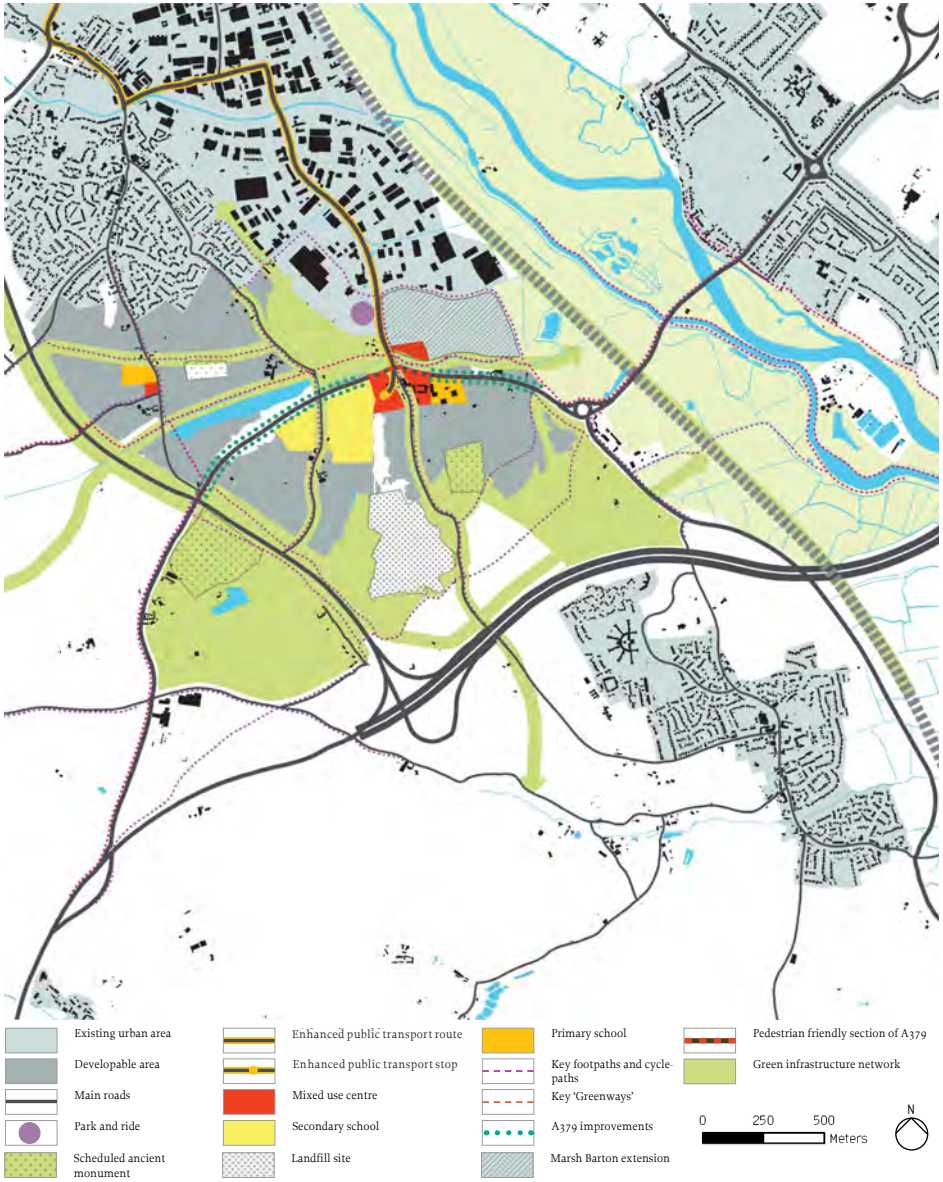
OPTION 3

A full description of this chosen development option is set out under section 5.0 A Vision for Growth. This development option also indicates the two primary schools as before but with the secondary school to the north of the A379, during development of the masterplan framework and discussions with English Heritage the school site has swapped with the primary school so that it is now on the west of Chudleigh Road away from the ancient monument. There is a large district centre and small local centre as before and the enhanced public transport link continues through the district centre and onto the proposed park and ride as option 1.

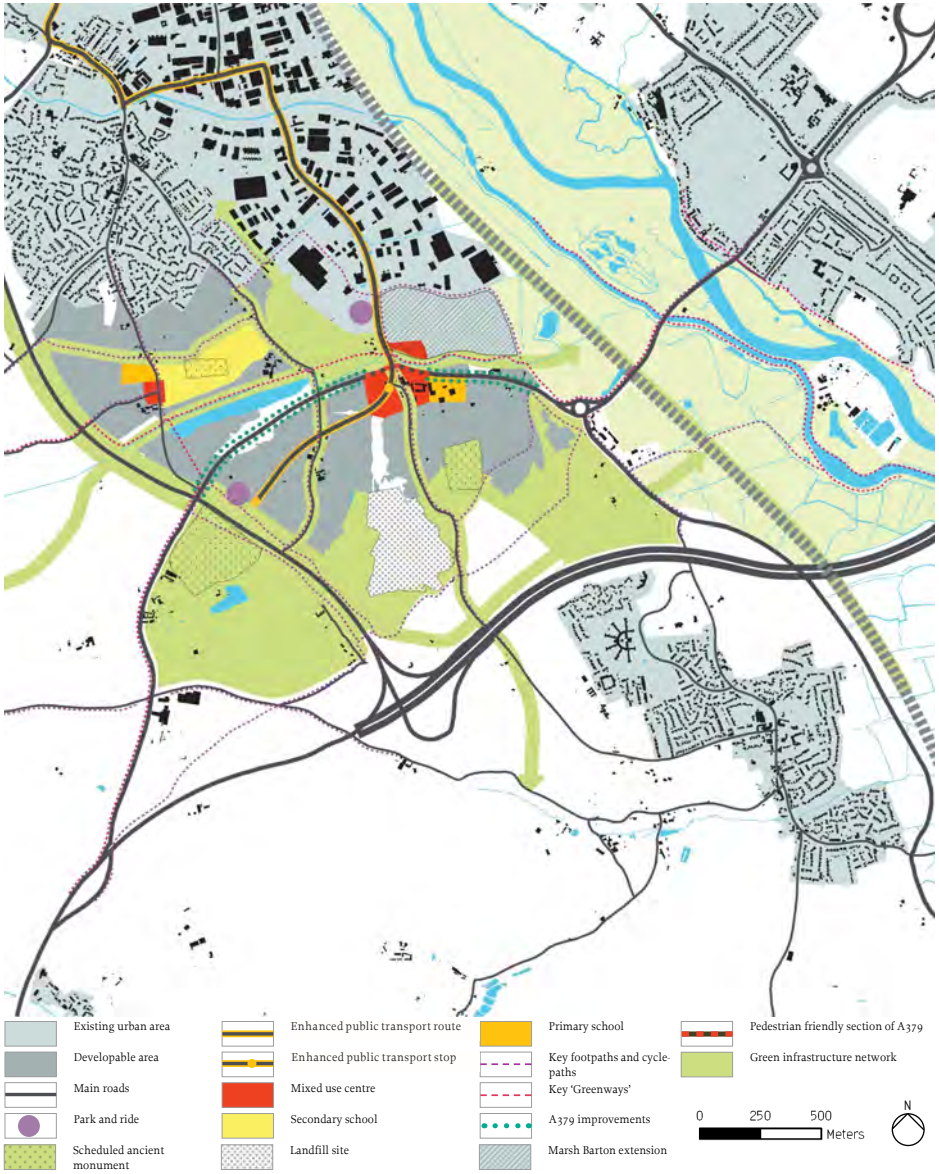
OPTION 1



OPTION 2



OPTION 3



LDĀDESIGN

Project: Southwest of Exeter Masterplan
Date: 19.01.10
Title: Development Options Assessment Matrix
Revision: B (28.03.12) HQPT updated to EPT
Note: To be read in conjunction with Stategic Development Options plans and Development Objectives.

Key
- Option should allow objective to be met fully
- Option should allow objective to be met but some issues may need to be resolved
- Option could allow objective to be met but some issues exist and may not be able to be resolved

Development Objectives / Assessment Against Objectives

No.	Objective	Option 1 Comment	Option 1 Score	Option 2 Comment	Option 2 Score	Option 3 Comment	Option 3 Score
1	**MOVEMENT** Create a place that promotes sustainable transport methods by facilitating and encouraging walking, cycling and the use of public transport as the primary means of transport…and is well integrated with and connected to existing community facilities, neighbourhoods and employment areas • Ensure that safe and convenient pedestrian, cycle and public transport routes are provided to and from the city centre and other key destinations within and around the site; • Provide adequate local facilities to reduce the need to travel with legible and direct routes to these facilities; • Actively encourage a shift away from use of the private car to more sustainable modes of transport via improving the attractiveness public transport in terms of cost, ease of movement, speed, flexibility and reliability through the integration of an Enhanced Public Transport (EPT) system.	• Secondary school location could hamper connectivity for pedestrians and cyclists between the south eastern neighbourhood and the centre. • Good access to EPT. • New park & ride facility could help to reduce traffic on the A379 and car use in general in the new development.		• EPT only serves development from its centre and therefore cannot become a focus for one of the neighbourhoods. • Retaining and expanding the existing park & ride instead of a new facility on the new edge of development will not reduce the traffic along the A379 or car usage in the development. • Secondary school location could hamper connectivity for pedestrians and cyclists between south western neighbourhood and centre.		• Good connectivity between centre and whole of the southern neighbourhood. • Good access to EPT. • New park & ride facility could help to reduce traffic on the A379 and car use in general in the new development. • Good pedestrian and cycle connectivity across the development.	
2	**LANDSCAPE SETTING AND ENVIRONMENT** Create a place that responds sensitively to its landscape setting in terms of topography and visual prominence to ensure development does not detract from the sites contribution to the overall image and attractiveness of Exeter • Ensure the masterplan respects the upper slopes and ridgelines to maintain their contribution to the setting of the city and in defining the natural limits of the city's growth; • Consider opportunities for a Country Park to be located within the development to provide a strategic multifunctional greenspace for the new community; • Retain Knowle Hill as a strong and distinctive landscape feature.	• Development is restricted to the lower slopes retaining the ridgeline as part of the setting of Exeter. • A country park is proposed as an amenity asset for the new community. • Knowle Hill is retained as an important landscape feature and will become an important part of the green infrastructure. • Development could impact the Scheduled Ancient Monument south of Alphington adjacent Knowle Hill and therefore is a risk to development capacity and viability.		• Development is restricted to the lower slopes retaining the ridgeline as part of the setting of Exeter. • A country park is proposed as an amenity asset for the new community. • Knowle Hill is retained as an important landscape feature and will become an important part of the green infrastructure. • Development could impact the Scheduled Ancient Monument south of Alphington adjacent Knowle Hill and therefore is a risk to development capacity and viability.		• Development is restricted to the lower slopes retaining the ridgeline as part of the setting of Exeter. • A country park is proposed as an amenity asset for the new community. • Knowle Hill is retained as an important landscape feature and will become an important part of the green infrastructure. • Incorporation of the Scheduled Ancient Monument into the secondary school grounds could impact the setting of the monument and is therefore a risk to the viability of the school location.	
3	**LOW/ZERO CARBON SUSTAINABLE DEVELOPMENT** In a response to climate change create a place that facilitates a low carbon lifestyle through a reduction in car dependency, designing buildings to minimise energy and resource requirements, incorporates Sustainable Urban Drainage Systems and utilises sustainable methods of energy and heat provision. • Promote the use of sustainable energy from existing and possible future resources at Marsh Barton and investigate the potential for onsite generation and a combined heat and power distribution system; • Minimise use of resources and promote energy efficiency through the design, choice of materials and construction methods of buildings; • Utilise Sustainable Urban Drainage Systems; • Encourage self sustaining lifestyles providing opportunities to grow food or fuel and travel by means other than private car.	• Strategic development option promotes sustainable lifestyles and travelling by means other than the car. • Strategic development option provides the required flexibility to achieve the low/zero carbon objective during detailed design. • Proposed lakeland park provides good basis for SUDS strategy.		• Strategic development option promotes sustainable lifestyles and travelling by means other than the car. • Strategic development option provides the required flexibility to achieve the low/zero carbon objective during detailed design. • Proposed lakeland park provides good basis for SUDS strategy.		• Strategic development option promotes sustainable lifestyles and travelling by means other than the car. • Strategic development option provides the required flexibility to achieve the low/zero carbon objective during detailed design. • Proposed lakeland park provides good basis for SUDS strategy.	
4	**COMMUNITY** Create a place with a distinct sense of community and character that respects and preserves the identity of neighbouring settlements. Deliver a balanced range of facilities to create diversity and 'sense of place'. • Create variety through providing different densities and mixes of development to establish neighbourhoods that reflect and respond to the sites conditions and character; • Encourage social integration, cohesion and strong physical links with existing communities; • Encourage interaction, community spirit and a sense of identity and ownership; • Provide an integrated mix of housing types and tenure that responds to local needs and affordability; • Promote healthy and happy communities, facilitating a healthy lifestyle and enjoyment of the outdoors for the local business and residential community;	• Good green infrastructure and amenity provision through the country park and lakeland park promote a healthy lifestyle and enjoyment of the outdoors. • Several key features will provide the community with a strong sense of identity.		• Good green infrastructure and amenity provision through the country park and lakeland park promote a healthy lifestyle and enjoyment of the outdoors. • Several key features will provide the community with a strong sense of identity.		• Good green infrastructure and amenity provision through the country park and lakeland park promote a healthy lifestyle and enjoyment of the outdoors. • Several key features will provide the community with a strong sense of identity. • Strong links with the existing community of Alphington particularly with the provision of additional facilities and school.	
5	**GREEN SPACES** Create a place that makes the most of its natural and cultural assets to provide a network of multi-functional 'green' corridors that link new residential areas and existing communities to open countryside. • Utilising open spaces as a valuable community resource; • Ensure open spaces and greenways achieve a range of compatible functions and roles such as leisure and recreation, food production, drainage and flood risk management and biodiversity enhancement; • Ensure green spaces are linked up and connected to wider Green Infrastructure networks and open countryside; • Utilise and respect the sites natural assets and historical features integrating these elements positively into the community.	A strong proposed green infrastructure network will allow a network of green spaces with various functions to be linked. The development recognises and integrates the sites key landscape and historical features.		A strong proposed green infrastructure network will allow a network of green spaces with various functions to be linked. The development recognises and integrates the sites key landscape and historical features.		A strong proposed green infrastructure network will allow a network of green spaces with various functions to be linked. The development recognises and integrates the sites key landscape and historical features.	
6	**URBAN ENVIRONMENT** Create a place with a high net density of mixed use development which is within easy access of high quality public open spaces, community facilities and the surrounding countryside. • Develop a compact, high density, legible urban environment that also delivers an attractive living environment with easy access to public open space and the surrounding countryside; • Create a place recognised for its quality environment and a desirable place to live and work; • Create well defined, high quality streets and spaces; • Build high quality architecture that reflects local identity.	• Location of secondary school reduces the compactness of the neighbourhood and density around the centre. • Lack of mixed use developement in the northern neighbourhood.		• Location of secondary school reduces the compactness of the neighbourhood and density around the centre. • Lack of mixed use developement in the northern neighbourhood.		• Location of secondary school maximises the compactness of the neighbourhood and density around the centre. • Improved mixed use facilities including school in the northern neighbourhood.	

STRATEGIC DEVELOPMENT OPTIONS ASSESSMENT

The three strategic development options illustrated in this appendix were assessed against the objectives and vision set in section 5.0.

Although all three were achievable development options the assessment against the objectives indicates that option 3 would likely produce a development that would meet the vision for south west Exeter. The key advantages of option 3 are:

- The secondary school to the north of then A379 fitting well with the green infrastructure and ensuring compact development to the south and around the district centre
- The extended public transport link and proposed park and ride

These key aspects provide several important advantages over the other options and these are set out in assessment table opposite and below.

Development Objectives		Assessment Against Objectives					
No.	Objective	Option 1		Option 2		Option 3	
		Comment	Score	Comment	Score	Comment	Score
7	**BIODIVERSITY/ECOLOGY** Create a place that promotes biodiversity, protects sensitive ecological areas and provides a network of wildlife corridors via Green Infrastructure designations. • Ensure appropriate management and integration of existing wildlife corridors and habitats into new areas of built environment where possible retaining them within the public realm; • Retain and appropriately managing the County Wildlife Sites and ecological designations within the site; • Retain and incorporate existing hedgerows and woodlands integrating them into wider continuous wildlife corridors and linking to surrounding key habitats including the Exminster Marshes.	• A strong green infrastructure network has been developed which integrates and improves existing wildlife corridors and accommodates all county wildlife sites. • Existing mature vegetation will be integrated where appropriate.		• A strong green infrastructure network has been developed which integrates and improves existing wildlife corridors and accommodates all county wildlife sites. • Existing mature vegetation will be integrated where appropriate.		• A strong green infrastructure network has been developed which integrates and improves existing wildlife corridors and accommodates all county wildlife sites. • Existing mature vegetation will be integrated where appropriate.	
8	**EMPLOYMENT** Create a place that enables people to live close to where they work. • Develop strong links to other existing and potential employment locations; • Provide new employment opportunities in a high density integrated environment with the potential to create a new gateway to Exeter; • Create employment sites and units that are of a flexible design that respects the surrounding environment and that relate well to residential and other community uses; • Ensure that employment sites and communities have good access to ICT resources promoting flexible working and the potential to work from home	• Location of secondary school reduces the availability of land for employment close to the centre and transport hub. • Centre has the ability to become an employment hub for new and existing communities.		• Location of secondary school reduces the availability of land for employment close to the centre and transport hub. • Centre has the ability to become an employment hub for new and existing communities.		• Location of secondary school improves the availability of land for employment close to the centre and transport hub. • Centre has the ability to become an employment hub for new and existing communities.	
9	**DELIVERABILITY** Ensuring the masterplan provides a flexible framework for growth capable of delivering a strong sense of place in a phased way. • Develop a phased approach to delivery which allows development to be delivered flexibly and incrementally, avoids the need for large up-front infrastructural contributions and encourages place making; • Establish a collaborative approach to delivery involving the local community in decision making; • Establish a delivery plan that sequences development creating a positive cash flow and generating value where possible; • Establish a system for effectively capturing planning gain to invest back into the community; • Provide management and governance structures up-front to ensure the maintenance of open space and public realm	• The secondary school location reduces the opportunity to grow housing around the new centre which could affect viability of early phases and possibly viability of centre as a major hub. • Additional EPT infrastructure costs could be balanced by the additional value added to the neighbourhood by its presence and access to it. • Archaeology across the site could impact on viability of the development. • Location of centre could allow development of a viable stand alone mixed use centre prior to residential development.		• The secondary school location reduces the opportunity to grow housing around the new centre which could affect viability of early phases and possibly viability of centre as a major hub. • Reduced EPT infrastructure costs could improve viability of early phases but could result in reduced value of the neighbourhood beyond the centre. • Archaeology across the site could impact on viability of the development. • Location of centre could allow development of a viable stand alone mixed use centre prior to residential development.		• The secondary school location does not affect early phases and site can be left until required or developed with housing if not required without reducing viability of the development. School location could also improve the viability of the secondary centre. • Additional EPT infrastructure costs could be balanced by the additional value added to the neighbourhood by its presence and access to it. • Archaeology across the site could impact viability of the development. • The secondary school location contains one of the SAM's, removing this from residential land should improve viability of this land. • Location of centre could allow development of a viable stand alone mixed use centre prior to residential development.	

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