

Greater Norwich Call for Sites Submission Form

FOR OFFICIAL USE ONLY	
Response Number:	
Date Received:	

This form is to be filled out by any interested parties who want to promote a site for a specific use or development to be allocated in the Greater Norwich Local Plan.

Only one form should be submitted for each individual site i.e. it is not necessary for a separate form to be completed for each landowner on a single site in multiple ownerships. However, a separate form must be completed for each individual site submitted.

Your completed form should be returned to the Greater Norwich Local Plan team no later than **5pm on Friday 8 July 2016**.

By email: callforsites@gnlp.org.uk

Or, if it is not possible submit the form electronically,

By Post to:

Greater Norwich Local Plan Team
PO Box 3466
Norwich
NR7 7NX

The responses received as part of the Greater Norwich Local Plan Call for Sites will be published and made available for public viewing. By submitting this form you are consenting to the details about you and your individual site(s) being stored by Norfolk County Council and shared with Broadland District Council, Norwich City Council and South Norfolk District Council, and that the details of the site will be published for consultation purposes.

Further advice and guidance can be obtained by visiting the Greater Norwich Local Plan website or by contacting the Greater Norwich Local Plan team directly:

Website: www.greaternorwichlocalplan.org.uk

E-mail: callforsites@gnlp.org.uk

Telephone: 01603 306603

1a. Contact Details	
Title	
First Name	
Last Name	
Job Title (where relevant)	
Organisation (where relevant)	
Address	
Post Code	
Telephone Number	
Email Address	

1b. I am...	
Owner of the site	Parish/Town Council
Developer	Community Group
Land Agent	Local Resident
Planning Consultant	Registered Social Landlord
Other (please specify):	

1c. Client/Landowner Details (if different from question 1a)	
Title	
First Name	
Last Name	
Job Title (where relevant)	
Organisation (where relevant)	
Address	
Post Code	
Telephone Number	
Email Address	

2. Site Details	
Site location / address and post code (please include as an attachment to this response form a location plan of the site on an scaled OS base with the boundaries of the site clearly shown)	
Grid reference (if known)	
Site area (hectares)	

Site Ownership		
3a. I (or my client)....		
Is the sole owner of the site	Is a part owner of the site	Do/Does not own (or hold any legal interest in) the site whatsoever
3b. Please provide the name, address and contact details of the site's landowner(s) and attach copies of all relevant title plans and deeds (if available).		
3c. If the site is in multiple landownerships do all landowners support your proposal for the site?	Yes	No
3d. If you answered no to the above question please provide details of why not all of the sites owners support your proposals for the site.		

Current and Historic Land Uses		
4a. Current Land Use (Please describe the site's current land use e.g. agriculture, employment, unused/vacant etc.)		
4b. Has the site been previously developed?	Yes	No

4c. Describe any previous uses of the site. (please provide details of any relevant historic planning applications, including application numbers if known)

--

Proposed Future Uses

5a. Please provide a short description of the development or land use you proposed (if you are proposing a site to be designated as local green space please go directly to question 6)

--

5b. Which of the following use or uses are you proposing?

Market Housing	Business & offices	Recreation & Leisure
Affordable Housing	General industrial	Community Use
Residential Care Home	Storage & distribution	Public Open Space
Gypsy & Traveller Pitches	Tourism	Other (Please Specify)

5c. Please provide further details of your proposal, including details on number of houses and proposed floorspace of commercial buildings etc.

--

5d. Please describe any benefits to the Local Area that the development of the site could provide.

--

Local Green Space

If you are proposed a site to be designated as Local Green Space please complete the following questions. These questions do not need to be completed if you are not proposing a site as Local Green Space. Please consult the guidance notes for an explanation of Local Green Space Designations.

6a. Which community would the site serve and how would the designation of the site benefit that community.

--

6b. Please describe why you consider the site to be of particular local significance e.g. recreational value, tranquillity or richness in wildlife.
--

--

Site Features and Constraints

Are there any features of the site or limitations that may constrain development on this site (please give details)?
--

7a. Site Access: Is there a current means of access to the site from the public highway, does this access need to be improved before development can take place and are there any public rights of way that cross or adjoin the site?
--

--

7b. Topography: Are there any slopes or significant changes of in levels that could affect the development of the site?
--

--

7c. Ground Conditions: Are ground conditions on the site stable? Are there potential ground contamination issues?
--

--

7d. Flood Risk: Is the site liable to river, ground water or surface water flooding and if so what is the nature, source and frequency of the flooding?
--

--

7e. Legal Issues: Is there land in third party ownership, or access rights, which must be acquired to develop the site, do any restrictive covenants exist, are there any existing tenancies?
--

--

7f. Environmental Issues: Is the site located next to a watercourse or mature woodland, are there any significant trees or hedgerows crossing or bordering the site are there any known features of ecological or geological importance on or adjacent to the site?

--

7g. Heritage Issues: Are there any listed buildings, Conservation Areas, Historic Parklands or Schedules Monuments on the site or nearby? If so, how might the site's development affect them?

--

7h. Neighbouring Uses: What are the neighbouring uses and will either the proposed use or neighbouring uses have any implications?

--

7i. Existing uses and Buildings: are there any existing buildings or uses that need to be relocated before the site can be developed.

--

7j. Other: (please specify):

--

Utilities

8a. Which of the following are likely to be readily available to service the site and enable its development? Please provide details where possible.

	Yes	No	Unsure
Mains water supply			
Mains sewerage			
Electricity supply			
Gas supply			
Public highway			
Broadband internet			

Other (please specify):	
8b. Please provide any further information on the utilities available on the site:	

Availability	
9a. Please indicate when the site could be made available for the land use or development proposed.	
Immediately	
1 to 5 years (by April 2021)	
5 - 10 years (between April 2021 and 2026)	
10 – 15 years (between April 2026 and 2031)	
15 - 20 years (between April 2031 and 2036)	
9b. Please give reasons for the answer given above.	

Market Interest		
10. Please choose the most appropriate category below to indicate what level of market interest there is/has been in the site. Please include relevant dates in the comments section.		
	Yes	Comments
Site is owned by a developer/promoter		
Site is under option to a developer/promoter		
Enquiries received		

Site is being marketed		
None		
Not known		

Delivery	
11a. Please indicate when you anticipate the proposed development could be begun.	
Up to 5 years (by April 2021)	
5 - 10 years (between April 2021 and 2026)	
10 – 15 years (between April 2026 and 2031)	
15 - 20 years (between April 2031 and 2036)	
11b. Once started, how many years do you think it would take to complete the proposed development (if known)?	

Viability			
12a. You acknowledge that there are likely to be policy requirements and Community Infrastructure Levy (CIL) costs to be met which will be in addition to the other development costs of the site (depending on the type and scale of land use proposed). These requirements are likely to include but are not limited to: Affordable Housing; Sports Pitches & Children's Play Space and Community Infrastructure Levy			
	Yes	No	Unsure
12b. Do you know if there are there any abnormal costs that could affect the viability of the site e.g. infrastructure, demolition or ground conditions?			
12c. If there are abnormal costs associated with the site please provide details:			
12d. Do you consider that the site is currently viable for its proposed use taking into account any and all current planning policy and CIL considerations and other abnormal development costs associated with the site?			

12e. Please attach any viability assessment or development appraisal you have undertaken for the site, or any other evidence you consider helps demonstrate the viability of the site.

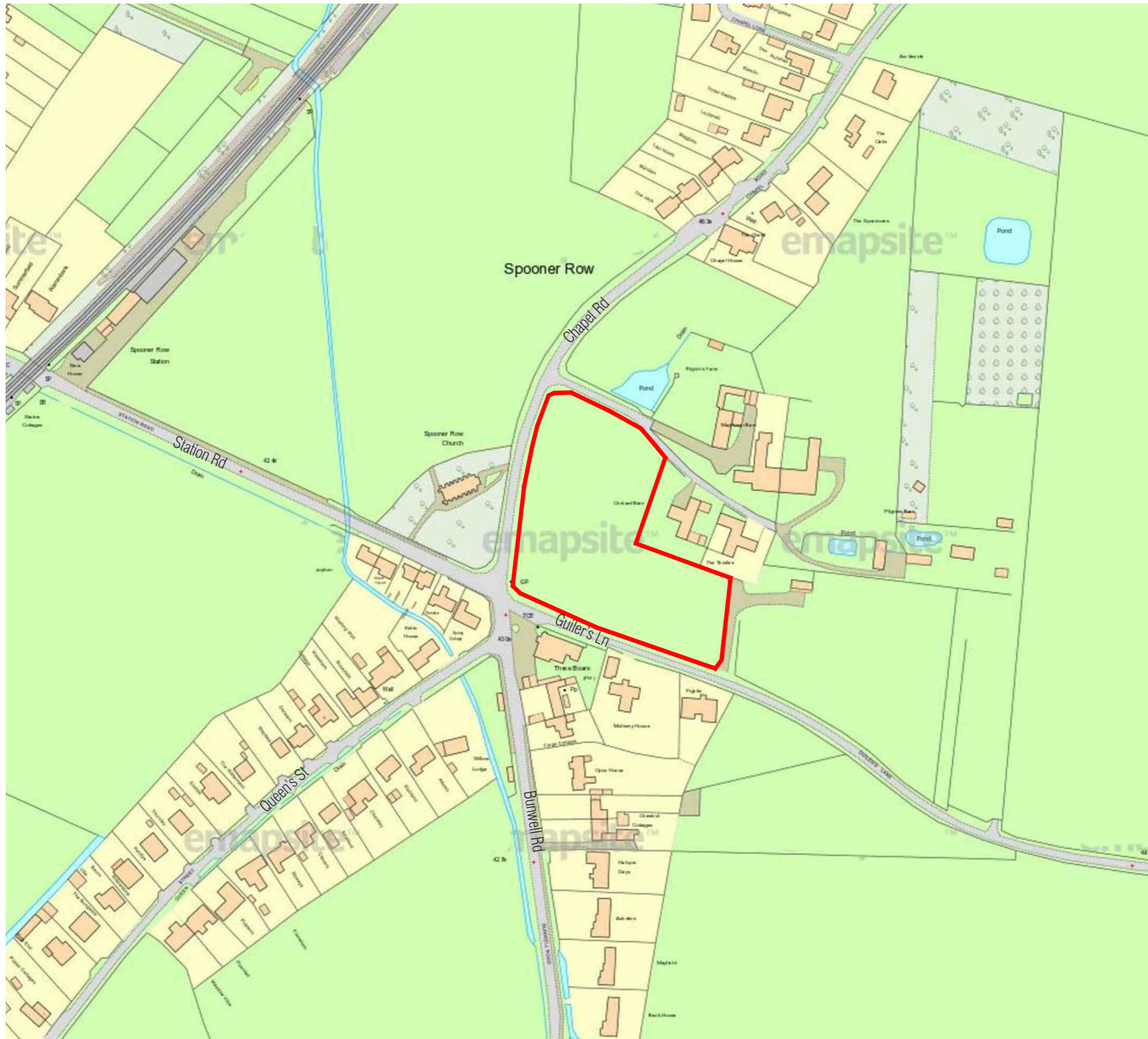
Other Relevant Information

13. Please use the space below to for additional information or further explanations on any of the topics covered in this form

Check List	
Your Details	
Site Details (including site location plan)	
Site Ownership	
Current and Historic Land Uses	
Proposed Future Uses	
Local Green Space (Only to be completed for proposed Local Green Space Designations)	
Site Features and Constraints	
Utilities	
Availability	
Market Interest	
Delivery	
Viability	
Other Relevant Information	
Declaration	

14. Declaration	
<p>I understand that:</p> <p>Data Protection and Freedom of Information</p> <p>The Data Controller of this information under the Data Protection Act 1998 will be Norfolk County Council, which will hold the data on behalf of Broadland District Council, Norwich City Council and South Norfolk District Council. The purposes of collecting this data are:</p> <ul style="list-style-type: none"> • To assist in the preparation of the Greater Norwich Local Plan • To contact you, if necessary, regarding the answers given in your form. • To evaluate the development potential of the submitted site for the uses proposed within the form. <p>Disclaimer</p> <p>The responses received as part of the Greater Norwich Local Plan "Call for Sites" will be published and made available for public viewing. By submitting this form you are consenting to the details about you and your individual sites being stored by Norfolk County Council, and the details being published for consultation purposes. Any information you consider to be confidential is clearly marked in the submitted response form and you have confirmed with the Council(s) in advance that such information can be kept confidential as instructed in the Greater Norwich Local Plan Call for Sites Response Form Guidance Notes.</p> <p>I agree that the details within this form can be held by Norfolk County Council and that those details can be shared with Broadland District Council, Norwich City Council and South Norfolk District Council for the purposes specified in this declaration.</p>	
Name	Date

Total Site Area: 0.94 ha (approx.)



Project
Land at Spooner Row
 South Norfolk
 Drawing Title
Location Plan - Parcel 3

Date	Scale	Drawn by	Check by
06.07.16	1:2000	JL	CA
Project No	Drawing No	Revision	
26248	MA-31	-	

**BARTON
 WILLMORE**

Planning • Master Planning & Urban Design
 Architecture • Landscape Planning & Design • Project Services
 Environmental & Sustainability Assessment • Graphic Design

bartonwillmore.co.uk



Offices at: Reading London Bristol Cambridge Cardiff Ebbsfleet Edinburgh Leeds Solihull



Total Site Area: 0.94 ha (approx.)

- 1 Vehicle Access
- 2 Meadow / Attenuation Features
- 3 Village Shop
- 4 Footpath along Guiler's Lane
- 5 Footpath along Chapel Road
- 6 Housing Development



Project
Land at Spooner Row
 South Norfolk
 Drawing Title
Illustrative Framework - Parcel 3

Date 06.07.16	Scale 1:2000	Drawn by JL	Check by CA
Project No 26248	Drawing No MA-32	Revision -	



Planning • Master Planning & Urban Design
 Architecture • Landscape Planning & Design • Project Services
 Environmental & Sustainability Assessment • Graphic Design

bartonwillmore.co.uk



Offices at: Reading London Bristol Cambridge Cardiff Ebbsfleet Edinburgh Leeds Solihull

Prepared on behalf of:

THE LANDOWNERS &

Titchmarsh & Co
PROPERTY CONSULTANTS

LAND AT SPOONER ROW, SOUTH NORFOLK – Parcel 3 – Chapel Road/ Guiler's Lane

VIABILITY APPRAISAL REPORT

July 2016



Titchmarsh & Co
PROPERTY CONSULTANTS

Prospect House | Sovereign Street | Leeds | LS1 4BJ

T: 0113 398 4179 | F: 0113 242 5818 | E: info@titchmarshandco.co.uk |
www.titchmarshandco.co.uk

Disclaimer

The contents of this report do not constitute a valuation, in accordance with Valuation Standards 1.1 of the RICS Global and UK Valuation Standards (March 2012), and should not be relied upon as such. This report is addressed to the Applicant only and its contents should not be reproduced in part or in full without our prior consent.

Confidentiality

This report is provided to Harrogate Borough Council on a confidential basis. We request that the report not be disclosed to any third parties under the Freedom of Information Act (Sections 41 and 43 (2)).

COPYRIGHT | DISCLAIMER

COPYRIGHT © Titchmarsh & Co Ltd. All rights reserved. No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Titchmarsh & Co. It is based on material that we believe to be reliable. Whilst every effort has been made to ensure its accuracy, we cannot offer any warranty that it contains no factual errors. We would like to be told of any such errors in order to correct them.

CONTENTS

	Page No.
INTRODUCTION AND SITE OVERVIEW	4
GENERAL MARKET OVERVIEW, AND LOCAL MARKET COMPARABLE EVIDENCE	5
APPRAISAL INPUTS	7
CONCLUSION	9
APPENDIX 1	Indicative master plan



1 INTRODUCTION AND SITE OVERVIEW

Titchmarsh & Co Ltd., in conjunction with the landowners, are promoting the subject site for residential development within the Call for Sites as part of the Greater Norwich Local Plan. The subject site forms part of a Development Framework consisting of a total of 5 parcels of land.

The aim of this report is to determine the subject site is a viable residential development opportunity.

A number of financial appraisals have been undertaken using Aperio's Prime Developer software package. All the appraisal's used are based on an accepted industry methodology, tested by key stakeholders from both the private and public sectors, and is based on up-to-date, local information.

This report is not intended to appear on the public file.

SITE OVERVIEW

The subject site extends to 0.94 Ha (2.32 acres), consisting of flat scrubland land in the main. The land is located to the centre of Spooner Row, on the corner of Chapel Road and Guiler's Lane. The land abuts the former Chapel Farm to its north (Chapel Farm is now a small development of 5 dwellings), and is bound by the roads to its western and southern boundary's, with residential dwellings beyond. The land abuts fields to its east

Spooner Row is a village located approximately 12km south west of Norwich, and benefits from rail and bus links to the wider area. It is located 400m from a main junction on the A11, and sits approximately 4 km south west of Wymondham, and 5km east of Attleborough.

2.0 GENERAL MARKET OVERVIEW, AND LOCAL MARKET COMPARABLE EVIDENCE

The UK residential market remains the subject of considerable, often widely conflicting, analysis by a wide range of commentators. According to the RICS Residential Market Surveys the New Year brought an increase in new sales listings for only the third time in the previous 18 month period, and this continued into February. However combined with the increase in enquiries and prolonged period of falling supply the demand supply imbalance continues.

Whilst the London market (and that of the South East) clearly distorts those statistics and averages applied to the national market, and even regional averages cannot accurately be applied to local markets, it is generally recognised that most areas of the market have improved since the financial crisis of 2008/2009.

The availability of mortgages is essential to support housing market activity. During February 2016 there were 73,870 approvals, a slight decrease from January 2016 which saw 74,581 approvals. Interest rates have remained at an all-time low of 0.5% for seven years in a row, and the Chancellor's recent budget suggests that this level may continue for 12 months or more. Some economists suggest that the rate may even fall.

According to the Home Builders Federation & Glenigan's New Housing Pipeline Report for Q3 2015 (published March 2016) planning was granted (taken as being when the first 'reserve matter' or 'condition' attached to the outline consent is discharged) for 59,875 homes during that quarter, an increase of 6,466 units from the same period the previous year. The report states that permission was granted for 242,819 dwellings in the 12 months to October - the highest rolling annual total since early 2008.

Whilst these additional new homes will be helpful in addressing the supply problem, a substantial proportion of those units identified within the report are some way off from start of construction, having to complete the planning process.

The report advises that 181,310 new homes were built in 2014/15, a 22% increase on the previous year, and broadly equating to the number of permissions granted 2 – 3 years ago.

The full impact of the recent BREXIT referendum is yet to be fully witnessed in the housing market. However, we believe there will be a period where the market will settle, and sales slow in light of the uncertainty brought about by the decision to leave the EU. However, we believe the long term prognosis for the residential market is good, with fundamental factors driving the market such as the acute under supply being resistant to political decisions.

Local Market Commentary

According to the Land Registry, the average selling price in Spooner Row is £298,500, compared with a national average price of £209,054. Since January 2015, houses have transacted for between £166,000 and £360,000. The latest house sold, a 4 bed detached located on Chapel Loke, sold for £360,000, equating to £212/ sq. ft.

With regards new build comparable evidence, Spooner has not seen any new build development in recent years. However, there are a number of new developments currently under construction in the wider area:

Wymondham

- Becketts Grove - Persimmon
- Oakwood Park – Charles Church
- Birch Gate – Bovis Homes

Attleborough

- Grosvenor Park – Taylor Wimpey

The above schemes offer a wide variety of new homes, ranging from 2 – 5 bedroom houses, and prices ranging from £145,000 - £385,000 that equate to £220 - £263/ sq. ft. All developers report strong interest, with achieved sales rates between 2.5 – 3 units/ month.

From analysing both the second hand market in Spooner Row, and the wider new build market, it is clear there is a good level of demand for new build properties in the market area. Potential sales rates are at a level that will deliver the required return for viable new build housing developments in the village.

We have adopted an average selling price of £230/ sq. ft. as proposed selling process within our appraisal, a conservative approach in light of the comparable evidence analysed, but also reflective of the larger, more 'select' development envisaged.

3.0 APPRAISAL INPUTS AND FINANCIAL VIABILITY

The residual land appraisal produced has been prepared in accordance with the indicative master plan prepared by Barton Willmore, seen at Appendix 1. We have assumed a development that will deliver 8,750 sq. ft. of accommodation, a low density scheme of 5 units averaging 1,750 sq. ft. each as reflected in the master plan. It is envisaged these will be larger units set in larger plots to reflect the immediate surroundings. We have assumed no value for the additional building identified in the master plan as a potential village shop/ community building.

Construction costs

Our appraisal provides an 'all in' build cost equating to £100/ sq. ft.. This includes all prelims, site set-up costs, internal roads, sewers, standard service connections, standard strip foundations and house build costs. This also includes all external works such as garages, and provides for a high quality internal specification including upgraded kitchens and bathrooms.

Abnormal Costs (inc. demolition)

At this stage a detailed cost plan has not been produced, as the proposed development schemes are yet to be finalised. However, we are aware there will be some abnormal development costs associated with the sites redevelopment, including SuDs systems, and as such we have allowed a provisional sum equating to £100,000 for additional costs, over and above this included in the construction costs.

Professional fees

In line with market practice and having consideration for the nature of the site (brownfield) we have assumed professional fees at 8% of construction costs. In addition, we have allowed £500/ unit for NHBC inspection fees.

Contingency

In line with market practice, we have provided for a contingency of 5% of construction costs.

Interest

We have adopted an interest rate of 6%, with no additional allowance for fees, which we consider to be a realistic assumption for a development of this nature in the current market. It should be noted that although a bank would not provide 100% of the funding required for the Proposed Scheme, it is conventional to assume finance on all costs in order to reflect the opportunity cost (or in some cases the actual cost) of committing equity to the project.

Developer's Profit

When considering the changing economic climate, financial institutions have tightened their requirement for profit returns on schemes. Banks have raised their expectations in terms of risk and required returns that new developments offer. Whilst different developers will have varying target rates our market experience is that the market remains cautious and we do not consider that any proposals predicting a return of less than 20% on Gross Development Value (GDV) would be considered acceptable.

The concept of a developer return of this level is now widely agreed in the majority of guidance and a number of appeal decisions. Furthermore, in October 2014, on behalf of the Housebuilding Federation (HBF), Savills published a briefing note that presented evidence on what represents a competitive return to a willing developer. The conclusions of this report are clear that minimum profit level used within viability testing should be 20% of GDV. This report has been referenced and its conclusions accepted in recent appraisals by other Local Authorities, including Wakefield, West Yorkshire, represented by Cushman & Wakefield.

Marketing and disposal costs

We have adopted the following costs of sales:

- Agent's sales fees – 3% of GDV (this includes marketing material costs, furnishing of show home, sales agents fees etc.)
- Legal fees at 1% of GDV

Planning Gain

Our appraisal provides for CIL, equating to £75/ sq. m.

Project timetable

We have adopted the following assumed timings for construction and sales:

- 3 month lead-in from start on site to commencement of construction (this period allows for site preparation and earthworks, and construction of the access)
- Sales commence in month 6 following construction start
- Sales rate of 1 units/ month
- Total cashflow of 12 months, from build start to finish

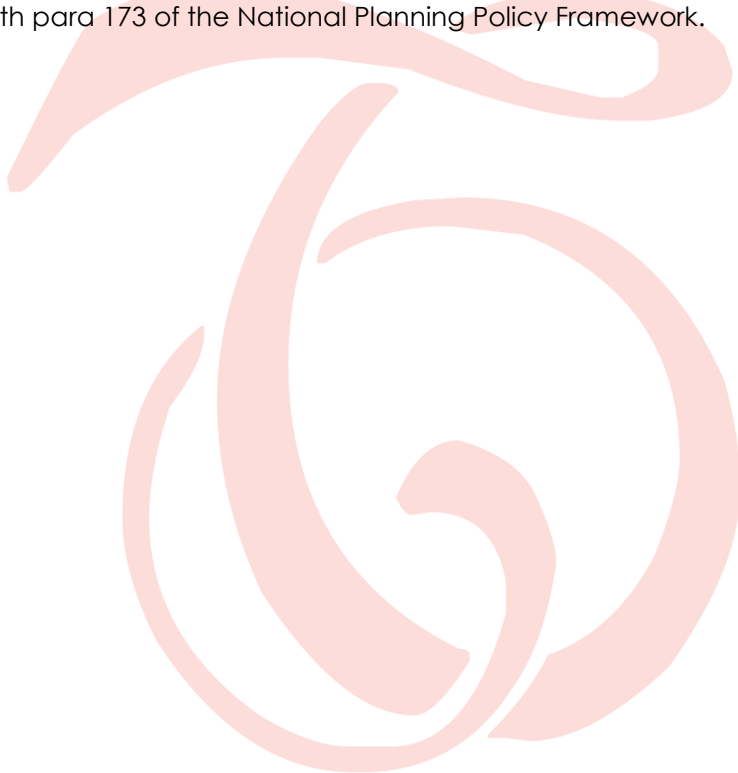
4 CONCLUSION

Having analysed in detail both the second hand and new build residential market in Spooner Row and its surrounding area, we conclude a residential development in line with the proposed master plan will be viable.

We believe our viability represents a robust development scenario, allowing for all known development costs and making provision for significant abnormal development costs including SuDs systems and Planning Gain.

We have appraised the site adopting profit margins and returns acceptable to both institutional funders and house builders.

As such we conclude the proposed development will provide “competitive returns to a willing landowner and willing developer to enable the development to be deliverable”, in accordance with para 173 of the National Planning Policy Framework.



APPENDICE 1 – INDICATIVE SITE LAYOUT

Please note the below is not to scale, and is for illustrative purposes only.





CONTACT

Matthew Bagley
Director

T: 0113 398 4179

M: 07912 952 502

E: matthew@titchmarshandco.co.uk

Prospect House | Sovereign Street | Leeds | LS1 4BJ

T: 0113 398 4179 | F: 0113 242 5818 | E: info@titchmarshandco.co.uk |
www.titchmarshandco.co.uk

Spooner Row

VILLAGE GROWTH FRAMEWORK AND VISION

BARTON WILLMORE

7 Soho Square, London. W1D 3QB

tel: 020 7446 6888

fax: 020 7446 6889

www.bartonwillmore.co.uk

Issue date	July 2016	July 2016	July 2016	
Document status	Draft	Draft	Submission	
Revision	A	B	C	
Author	Various	Various	Various	
Prepared by	JL	JL	JL	
Checked by	CA	CA	CA	

J:\26000-26999\26200-26299\26248 - Spooner Row\A5 - Reports & Graphics\Reports

1. INTRODUCTION

2. PLANNING POLICY CONTEXT

3. VILLAGE ASSESSMENT

4. OPPORTUNITIES & CONSTRAINTS

5. CONCEPT

6. ILLUSTRATIVE FRAMEWORK

7. TECHNICAL BACKGROUND

8. CONCLUSION

1. Introduction

This Development Framework and Vision has been prepared on behalf of Titchmarsh & Co and relates to 5 separate parcels of land in Spooner Row, South Norfolk.

This document sets out the principles and concept for overall village growth which envisions a better equipped service village, then identifies and illustrates development frameworks for the 5 parcels represented separately for the Call for Sites process.

The Village Assessment maps out the existing settlements, services and facilities and the walkable village extent. The Opportunities and Constraints section identifies existing conditions in the village such as flood zones, listed buildings, existing vegetation, landscape designations and landscape characteristics in order to identify potential housing growth areas and public open space.

The Concept drawings establishes principles of village growth and sets out the physical structure of the growth strategy which would inform a sustainable and sensitive village growth.

The Illustrative Framework shows potential development of the 5 parcels amongst the identified growth areas and proposed public open space.

This document is informed by preliminary studies including transport / highway assessment, flood risk assessment and landscape and visual assessment considerations.



HOLY TRINITY CHURCH



BUNWELL ROAD



CHAPEL ROAD



STATION ROAD



AERIAL VIEW OF SPOONER ROW

2. Planning Policy Context

The village of Spooner Row is situated within the district of South Norfolk. The current development plan for South Norfolk consists of the following documents:

- Joint Core Strategy
- Site Specific Allocations and Policies Document
- Wymondham Area Action Plan
- Development Management Policies Document
- Long Stratton Area Action Plan

LOCAL PLAN

The Joint Core Strategy (JCS) has been developed by the Greater Norwich Development Partnership (GNDP) (of which South Norfolk Council is a member) and sets out the overarching strategy for growth across Norwich, Broadland and South Norfolk for the period 2008 - 2026.

Following adoption in 2011 a legal challenge was made and as a result, parts of the text and some associated maps and diagrams relating to housing growth in Broadland were remitted by High Court Order. Subsequent to further consultation and an examination in 2013, the proposals for the Broadland part of the Norwich Policy Area were found sound. The complete adopted Joint Core Strategy for Broadland, Norwich and South Norfolk therefore comprises the JCS document

adopted in March 2011, as amended by the Broadland Part of the Norwich Policy Area: Local Plan, adopted in January 2014.

The adopted JCS identifies the need to provide 36,820 new homes of which approximately 33,000 will be in the Norwich Policy Area (NPA). The NPA has been defined to provide a focus for planning and coordinating Norwich related growth. The NPA includes the city of Norwich, part of South Norfolk (including the village of Spooner Row), and part of Broadland District.

Policy 15 of the Joint Core Strategy (JCS) identifies Spooner Row as a Service Village in which land will be allocated for small-scale housing growth in the period 1 April 2008 to 31 March 2026, within the range of 10-20 dwellings, subject to form, character and servicing constraints. Settlements identified in this policy that are also within the Norwich Policy Area may be considered for additional development, if necessary, to help deliver the 'smaller sites in the NPA' allowance.

Service Villages are defined based on having a good level of services/facilities. The services considered to be the most important are:

- primary school
- food shop
- journey to work public transport service (to Norwich, a Main Town, a Key Service Centre, or a comparable centre outside the plan area)
- village hall

The Site Specific Allocations and Policies Document (Oct 2015) identifies two allocations in Spooner Row which equate to a total of 15 dwellings over the total plan period.

STRATEGIC HOUSING MARKET ASSESSMENT (JAN 2016)

Recently, a Strategic Housing Market Assessment (SHMA) was undertaken to establish the Objectively Assessed Need (OAN) for housing for the local authorities which form part of the GNDP. The report concluded that on the basis of market signals and the need to balance workers and jobs, the OAN for the HMA should be increased. Therefore the SHMA identifies an OAN for 70,483 dwellings over the 24-year period 2012-36, an annual average of 2,937. This represents a 20% increase above the demographic trends for the area which is largely due to the impact of the additional jobs planned as part of the City Deal for Greater Norwich. With regards to South Norfolk, the breakdown of OAN is 10,998 which equates to an annual average of 458.

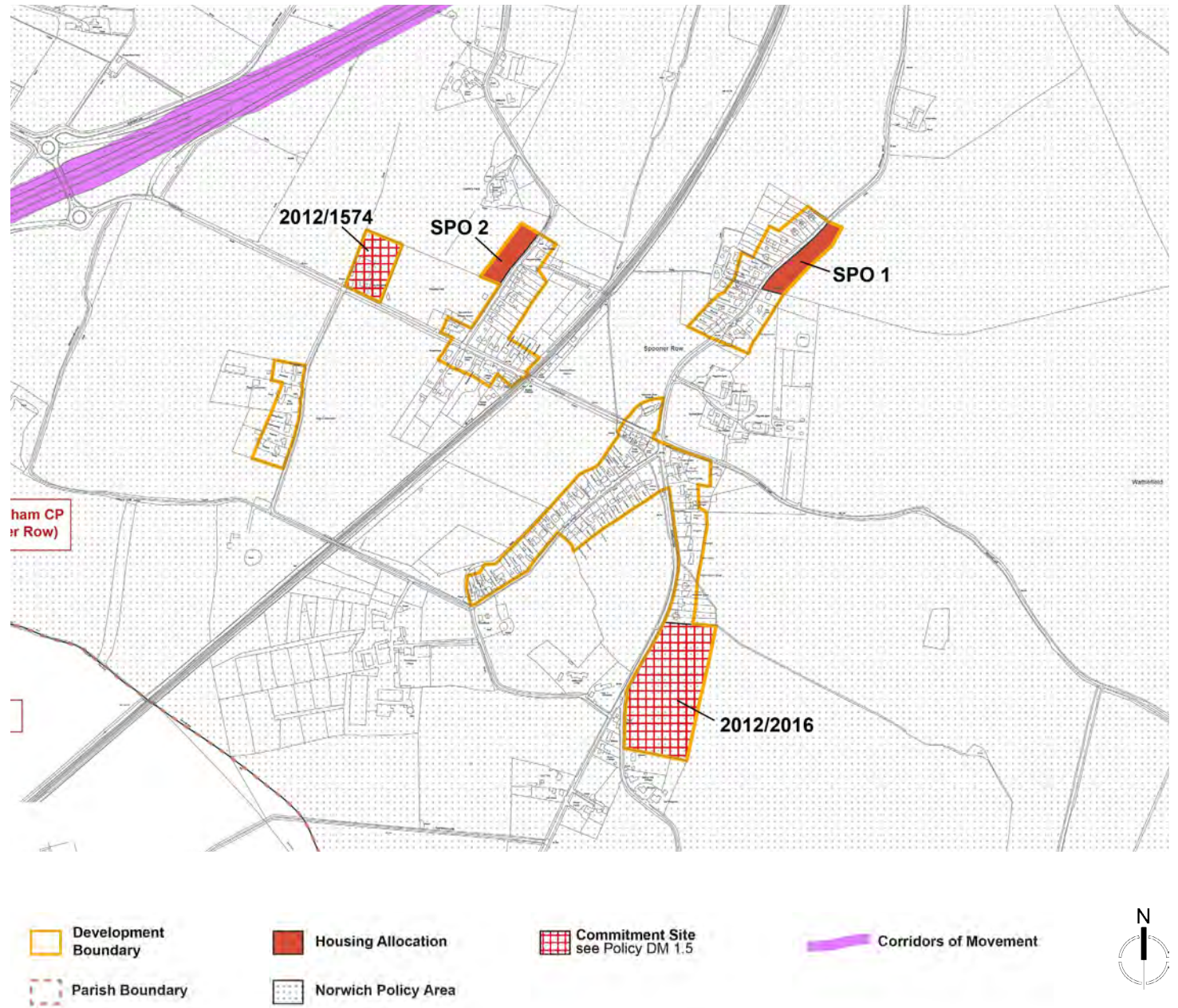
5 YEAR HOUSING SUPPLY

The NPPF (2012) requires Local Planning Authorities to; "ensure that their Local Plan meets the full, objectively assessed needs for market and affordable housing in the housing market area" and "identify the scale and mix of housing and the range of tenures that the local population is likely to need

over the plan period which meets household and population projections, taking account of migration and demographic change” (paragraphs 47 and 159).

The Council’s 5 year land supply is identified in the 2014/15 Annual Monitoring Report as 4.39 years for the Norwich Policy Area. However, in view of the recent SHMA which has now increased the overall housing requirement by 20%, it is expected that the 5 years supply will now decrease to take into account the additional requirement. It is also recognised that the Liverpool approach is used by the Greater Norwich authorities to calculate their housing supply despite advice within the Planning Practice Guidance (PPG) which states that the Sedgefield approach should be applied. Furthermore, the Councils are now in a position of recognising that there has been persistent under delivery in the NPA, and consequently it may be necessary to apply the 20% buffer. Taking into account the Council’s current position, we anticipate that as a result housing delivery rates will need to increase to address housing market problems.

It is noted that the Council is committed to an early review of the South Norfolk Local Plan, which has already effectively begun with the publication of the SHMA and the current Call for Sites exercise.



3. Village Assessment

EXISTING SETTLEMENT AREAS AND SERVICES

The village is served by a railway station, a primary school, a village hall, a church and a public house which are connected by Station Road within a 400 meter distance section. This service corridor forms a 'village heart'. Currently the village lacks any shop.

The existing settlement areas are present around the 'village heart' within a walkable distance but separated by open space including arable land and the railway.

ROAD CONNECTIONS

Wymondham and Attleborough lie within a 10 minute drive distance. The A11 provides a vehicle connection to Norwich.

PUBLIC TRANSPORT

The railway station and the bus stops are present in the village heart.



PUBLIC HOUSE



SPOONER ROW PRIMARY SCHOOL



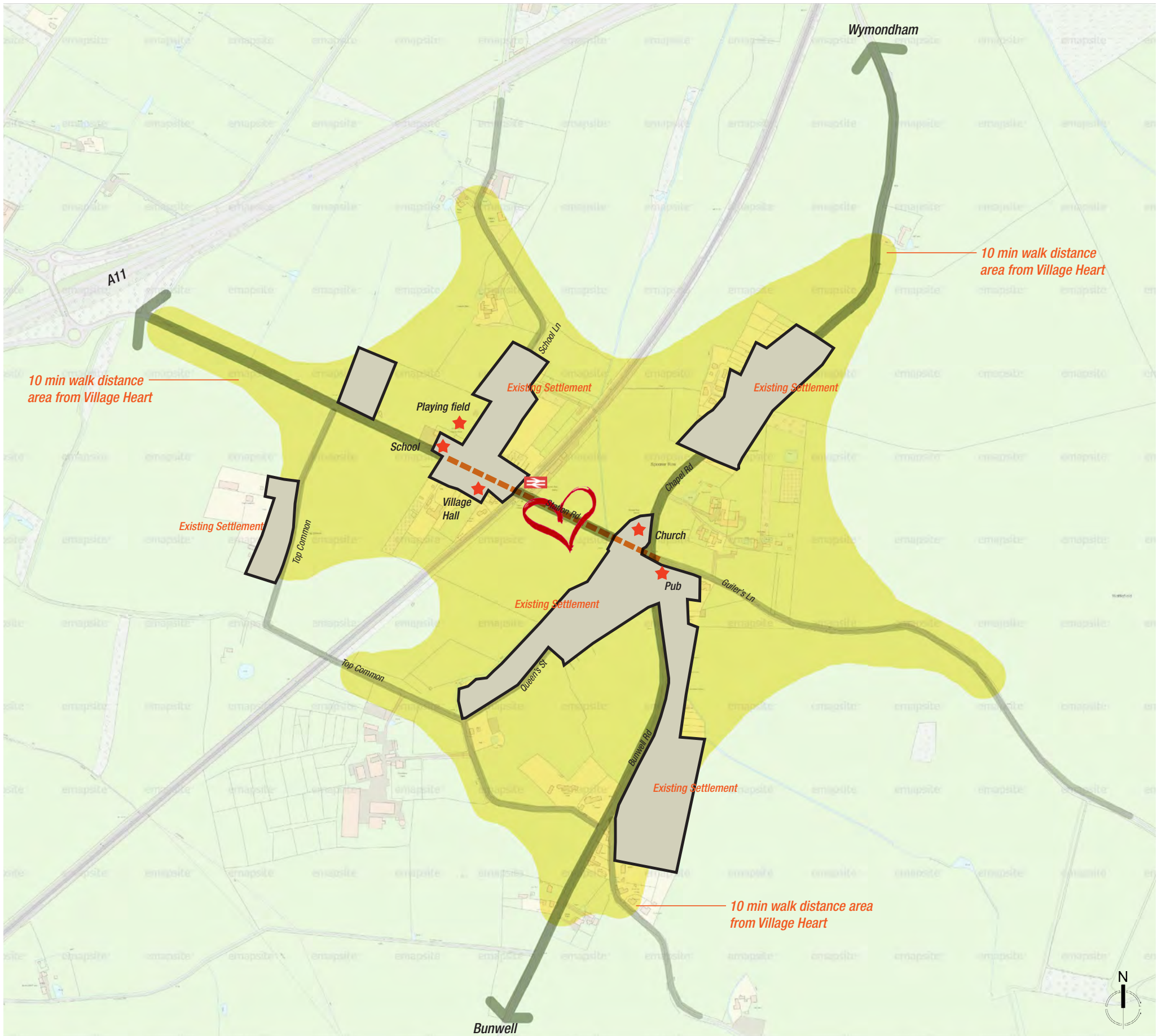
PLAY AREA



TRAIN STATION

Legend

Settlement	
Railway Station	
Village service and facilities	
Main movement corridor	
Minor movement corridor	
Village Heart	
10 minutes walk distance area from Village Heart	



EXISTING SETTLEMENT AREAS AND SERVICES

4. Opportunities & Constraints

The village layout presents a number of opportunities for enhancing the amenities and sustainability of the village whilst acknowledging constraints.

The current village heart is well located in the physical centre of the village within a walkable distance with potential for further service facilities such as village shop, new or upgraded village hall, allotment or community orchard and sports ground. The delivery of these could be phased in accordance with the growth of the village

Within the walkable distance, the village presents a number of sites free from major landscape and visual impact concerns or ecological designations.

The Flood Zone across the village needs to be retained as open space. However it has the potential to become public open space and ecological habitat. This would contribute to the character of settlement areas separated by green space.

Growth of the village may also promote an increase in public transport provision.

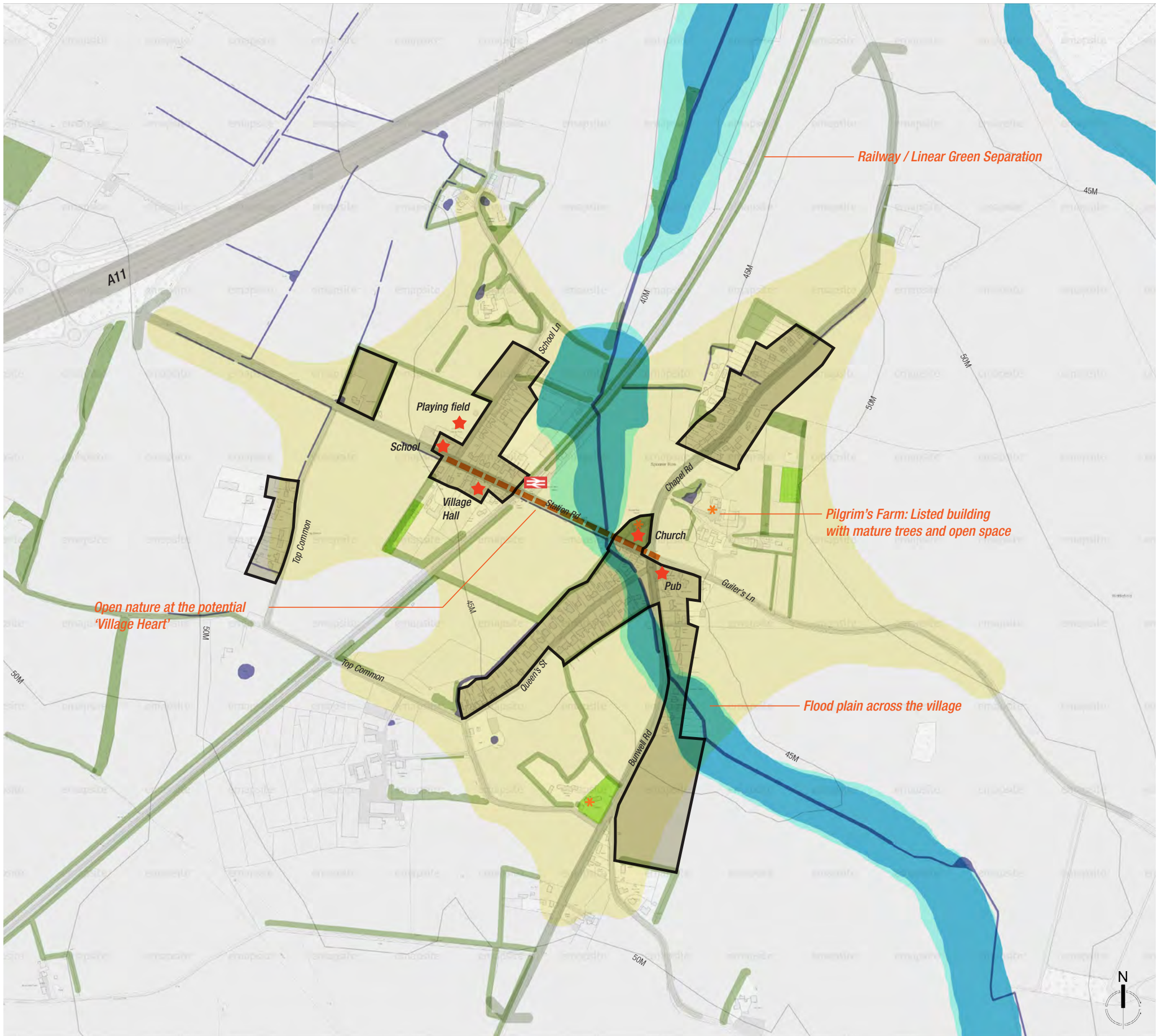


FARM LAND AND SETTLEMENT TO THE SOUTH OF STATION ROAD



RIVER AND FLOOD PLAIN

Legend	
Settlement	
Railway Station	
Village service and facilities	
Main movement corridor	
Minor movement corridor	
Village Heart	
10 minutes walk distance area from Village Heart	
Listing Buildings	
Watercourse	
Flood Zone 2 & 3	
Traditional Orchards	
Hedgerows and trees	



5. Concept

The concept diagram identifies potential growth areas and safeguarded open space for public use, food production, habitats and flood mitigation within the 'Walkable Village' extent as set out in the Opportunities and Constraints section. The concept is structured mainly by open space strategy as follows:

1. VILLAGE HEART GREEN

The Village Heart Green would keep the open nature of Station Road whilst enhancing footpath connections and adding ecological value to the existing farmland and meadows. Well landscaped attenuation features would add interest to the public open space and biodiversity to the green space.

USE: Public Open Space, Wetland Habitat, Footpath Connection between Station and Chapel Rd, Flood Attenuation Features and Potential car park extension for the station

2. PILGRIM'S FARM GREEN

The Chapel Road frontage of Pilgrim's Farm would stay open to maintain the open character and the visual presence of the listed building to the pub junction. Improved pedestrian space can be provided along the existing hedgerow and Chapel Road.

The open space at the junction corner can provide footpath access and visual presence of a potential village shop (or any other suitable services).

USE: Public Open Space, Flood Attenuation Feature, Grassland and Potential Village shop

3. BUNWELL ROAD MEADOW

The floodplain along the existing watercourse forms a new public open space fronted by existing Bunwell Road houses and potential new development in the southern part of the parcel, providing SUDs features, meadow and small play area with improved footpath connections along Bunwell Road

USE: Public Open Space, Flood Attenuation Feature, Play area

4. COMMUNITY ORCHARD





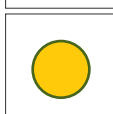

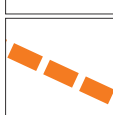

The proposed community orchard would reinforce the settlement gap along the railway green corridor whilst diversifying the use of public open space in the village heart.

USE: Community Orchards and Structural Planting

5. POTENTIAL SCHOOL EXTENSION / ALLOTMENTS

The land to the north of the existing school will be reserved for potential growth of the school and village allotments served from School lane with improvements of the existing lane if required.

USE: School expansion, allotments or potential sports/leisure field.

Legend	
Existing Settlements	
Potential Growth Areas	
Village service and facilities	
Village Shop	
Public Open Space	
Village Heart	
Improved Village Heart Walk	
Minor roads and footpath connection	



6. Illustrative Framework

The illustrative framework plan shows the possible development of five parcels, amongst the identified village growth areas. The indicative schedules and land uses are as follows:

PARCEL 1

- Site Area: 3.64 ha
- Net Developable Area: 2.45 ha for residential development
- Public Open Space: 1.19 ha for SUDs, play area and meadow

PARCEL 2

- Site Area: 4.08 ha
- Net Developable Area: 2.16 ha for residential development
- Public Open Space: 1.92 ha for community orchards, SUDs and play area

PARCEL 3

- Site Area: 0.94 ha
- Net Developable Area: 0.45 ha for residential development with a potential village shop
- Open Space: 0.49 ha for public open space and private land kept as open grass land and necessary SUDs features.

PARCEL 4

- Site Area: 6.84 ha
- Net Developable Area: 2.93 ha for residential development
- Public Open Space: 3.91 ha for wetland habitats, flood attenuations features, potential car park for the station

PARCEL 5

- Site Area: 4.13 ha
- Net Developable Area: 1.50 ha for residential development
- Attenuation Green, Potential School Expansion and Allotments: 2.63 ha

- Wetland habitat with footpath/ deck access across 1
- Flood attenuation features 2
- Play area 3
- Community Orchards 4
- New pedestrian space 5
- Meadow 6
- Avenue planting 7
- Station car park 8
- Potential school expansion 9
- Allotments 10
- Retained and enhanced hedges 11
- Proposed hedges and structural planting 12

INDICATIVE SCHEDULE OF ACCOMMODATION

Parcel	Parcel 1	Parcel 2	Parcel 3	Parcel 4	Parcel 5
Total Site Area	3.64 Ha	4.08 Ha	0.94 Ha	6.84 Ha	4.13 Ha
Net Developable Area	2.45 Ha	2.16 Ha	0.45 Ha	2.93 Ha	1.5 Ha
Net Density	18~25 DPH	18~25 DPH	-	20~30 DPH	18~25 DPH
Homes	44~61 Homes	39~54 Homes	4~5 Homes plus Shop	59~88 Homes	27~38 Homes





Parcel 5

Parcel 4

Parcel 3

Parcel 2

Parcel 1

8. Technical Background

LANDSCAPE AND VISUAL CONSIDERATIONS

The Site is located within a village which is characterised by separate small scale settlement clusters, divided by the Norwich to Ely railway line and agricultural fields. The Site is covered by published Landscape Character Area B2 Tiffey Tributary Farmland which is noted for its flat to gently undulating landform, small hidden streams and wooded horizons. The Site is also noted as being within a strategically important area, as one of the main points of entry into the South Norfolk District as a result of the existing road and rail infrastructure.

The Site is considered to reflect these published landscape characteristics, being generally flat common place fields, enclosed by trees or hedgerows and with a small hidden stream crossing either side of Station Row road. As a result of the generally flat landform and existing vegetation, the inter-visibility between the Site and the wider landscape is very localised, with views being from close range existing road networks and residential properties, for which there are existing views of built form and the railway line.

The Site therefore provides the opportunity for development as it is well contained from the wider landscape, being enclosed by its low lying position and existing vegetation. The proposed development provides an opportunity to respond positively to published landscape guidelines, including for relating to the scale of the existing settlement patterns to retain the rural character of the village; respect the setting of the Holy Trinity Church and improve access to the stream by enhancing the recreational value of the Site by providing potential linkages adjacent to the stream as part of a high quality multi-functional area of connected green spaces, in an area of existing limited public access. The proposed built form would also reflect the existing scale and mass of existing development within the village, to avoid the introduction of new features which would disturb the visual balance and would be set within a robust landscape framework.

HIGHWAY / TRANSPORT

It is proposed that development on the various sites would have a combination of direct frontage access and simple priority T-junctions onto the local highway network

The internal highway network would be designed in-line with relevant design standards as set out by NCC and SNDC, and in-line with guidance set out within Manual for Streets. Parking would be provide in-line with anticipated demand, and relevant local and regional standards.

Improvements to the pedestrian and cycle network would be provided where possible, improving links to Spooner Row Railway Station.

Improvements to bus facilities and operation would also be considered, with discussions undertaken with local bus operators, NCC and SNDC.

In view of the above we consider that this site is suitable for allocation for a mixed-use development in transport terms.

FLOOD RISK AND DRAINAGE

The masterplan for each site will be carefully devised to ensure that the residential properties are strategically positioned so that they do not conflict with the floodplain extent and are therefore considered to be within the Flood Risk Zone 1 area of the site.

The finished floor levels will be set above the 1:100 year peak fluvial event (including an allowance for climate change) to ensure no flood-water encroachment occurs to any property.

Buffer zones would be provided from the top of the designated main river's banks to ensure future maintenance works can be carried out. Any existing ordinary watercourse/ditches would also be retained where possible or compensatory lengths provided instead to ensure no net loss.

There is no risk of flooding from any nearby reservoir.

A means of dry/safe escape will be available to all residents in the event of an extreme flooding event to enable the occupants to vacate their premises or allow emergency vehicles to access the site.

An application for each of the sites will be accompanied by a detailed site-specific Flood Risk Assessment where the land is designated as being in a Flood Risk Zone 2 and/or 3, or the application area exceeds one developable hectare, to comply with the requirements of the NPPF.

No public sewers will need to be diverted or protected.

A suitable SuDS strategy will be devised which will seek to utilise infiltration drainage techniques or outfall to the designated main river/ordinary watercourse. Each SuDS system will be hydraulically designed to ensure the network can withstand the impact of a 1:100 year rainfall event (including an allowance for climate change). Suitable features such as basins, ponds, swales etc. will be included in the scheme to attenuate the resultant volumes of run-off.

8. Conclusion

Through this Development Framework and Vision it has been demonstrated that the village has potential for growth in terms of residential development with appropriate provision of service facilities and public open space. The growth principles are summarised as follows:

- The growth will be contained within the Walkable Village distance extent.
- The new residential development will form natural extensions to the existing settlement areas.
- The gaps between the existing settlements will be safeguarded by provision of new public open space and habitats.
- Through growth, the village can become a better equipped service village with more diverse village service facilities and high quality public open space.
- The proposed development will utilise water features and flood plains in enhancing

the quality of public open space and biodiversity in green space in the village.

- The proposed development will enhance pedestrian connections across the village.
- The proposed development will reserve space for potential school expansion following the growth of the village.
- Access to the development can be adequately provided without negative impact on the surrounding highway network.
- The identified parcels are considered suitable to accommodate residential development without detriment to the landscape character, features, or visual amenity of the area.
- The development parcels have enough room for flood attenuation features to mitigate flood risks.

This document assesses and illustrates a possible development of multiple sites in the village which could strengthen the village's service and amenity offer. However the individual parcels of land identified for development are capable of being developed independently of each other.

LAND AT SPOONER ROW,
VILLAGE GROWTH FRAMEWORK AND VISION
JULY 2016

LAND ALLOCATION REPRESENTATIONS AT
SPOONER ROW, SOUTH NORFOLK

HIGHWAYS/TRANSPORT, FLOOD RISK AND
DRAINAGE POSITION STATEMENT

REPORT REFERENCE NO. 161620-01
PROJECT NO. 161620
JULY 2016

LAND ALLOCTI ON REPRESENTATIONS
AT SPOONER ROW, SOUTH NORFOLK

HIGHWAY/TRANSPORT, FLOOD RISK AND
DRAINAGE POSITION STATEMENT

Ardent Consulting Engineers
Suite 207
One Alie Street
LONDON
E1 8DE
Tel: 020 7680 4088
Fax: 020 7488 3736
enquiries@ardent-ce.co.uk

REPORT REF. 161620-01
PROJECT NO. 161620
JULY 2016

CONTENTS

	Page
1.0 INTRODUCTION	1
2.0 EXISTING SITUATION	2
3.0 DEVELOPMENT PROPOSALS	9
4.0 TRIP GENERATION/ATTRACTION, MODAL SPLIT & TRAFFIC IMPACT	12
5.0 FLOOD RISK AND DRAINAGE	18
6.0 SUMMARY AND CONCLUSIONS	27

APPENDICES

Appendix A	Illustrative Framework (Parcels 1 to 5)
Appendix B	TRICS Outputs
Appendix C	Census Outputs
Appendix D	Public Sewer Asset Record Plans

DOCUMENT CONTROL SHEET

REV	ISSUE PURPOSE	AUTHOR	CHECKED	APPROVED	DATE
-	1 st draft for project team review	KM/SJB	SJB	DRAFT ONLY	01/07/16
-	2 nd draft	KM/SJB	KM	SJB	06/07/16
-	Final	KM/SJB	KM/ML	SJB	07/07/16

1.0 INTRODUCTION

- 1.1 Ardent Consulting Engineers (ACE) is appointed by to advise on highway/transport, flood risk and drainage aspects relating to the proposed allocation of several parcels of land at Spooner Row, Norfolk, for residential use.
- 1.2 South Norfolk District Council (SNDC) is the local planning authority, while Norfolk County Council (CCC) is the local highway authority responsible for all roads in the area, except the A11, which falls under the jurisdiction of Highways England (HE) as a trunk road.
- 1.3 This report considers five separate parcels of land within the village of Spooner Row, as shown on the plan included in Appendix A of this report.
- 1.4 This statement has been prepared in support of allocating each of these development sites represented in the Call for Sites process, and should be read in conjunction with the Spooner Row Development Framework and Vision Document.
- 1.5 Following this introduction, the remainder of the report is structured as follows:
- Section 2.0 describes existing conditions;
 - Section 3.0 outlines the proposed development allocation;
 - Section 4.0 sets out the expected trip generation/attraction and modal split associated with the proposals
 - Section 5.0 outlines the level of flood risk and drainage principles;
 - Section 6.0 provides a summary and identifies conclusions.

2.0 EXISTING SITUATION

2.1 Each parcel of land's respective locations are shown below and at Appendix A, with each site currently undeveloped farmland in arable use.

Parcel 1

2.2 (3.64 hectares) is located to the west of Bunwell Road, and to the south of residential properties on the southern side of Queen's Street. An existing field gate access is provided from Bunwell Road towards the north of the site.



Plate 1: Parcel 1

Parcel 2

- 2.3 (4.08 hectares) is bounded by the railway line to the west and Station Road to the north. An existing field gate access is currently provided from Station Road to the north-west of the site.



Plate 2: Parcel 2

Parcel 3

- 2.4 (0.94 hectares) is bounded by Chapel Road to the west and Guiler's Lane to the south. Access is currently provided via the shared access to the north and east of the site.



Plate 3: Parcel 3

Parcel 4

- 2.5 (6.84 hectares) is bounded by the railway line to the west, Station Road to the south, and Spooner Row Church and Chapel Road to the east. To the south of the site, a vehicle crossover is provided centrally on the southern boundary of the site onto Station Road.

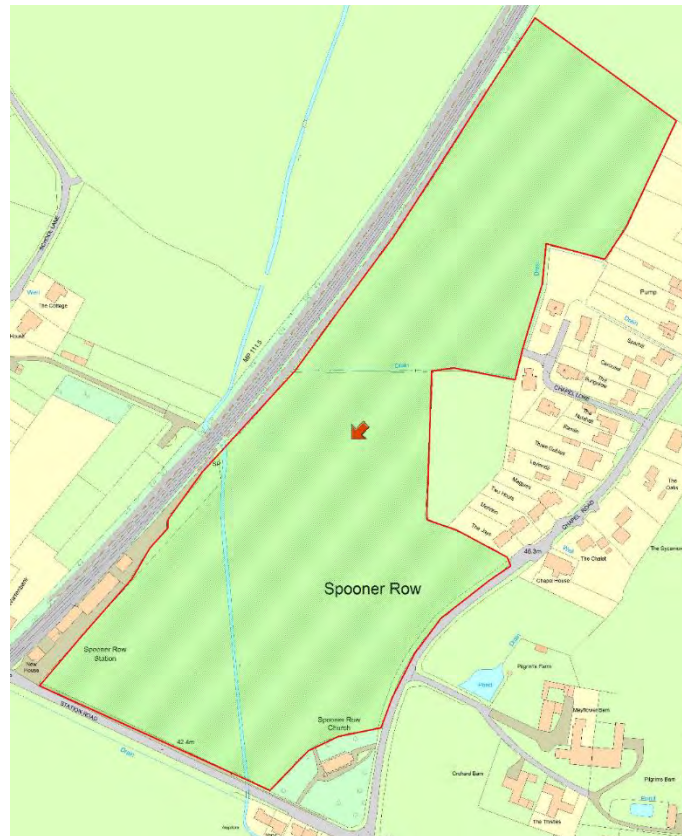


Plate 4: Parcel 4

Parcel 5

- 2.6 (4.13 hectares) As shown on the site plans included in Appendix A, direct vehicular access in the form of a field gate is provided from the highway known as School Lane.



Plate 5: Parcel 5

Local Highway Network

- 2.7 As shown on the site plans included in Appendix A, direct vehicular access is provided from each site onto the local highway network.

Station Road

- 2.8 Station Road is a single carriageway road which serves Spooner Row village, and provides a link to the A11 trunk road to the north.
- 2.9 Station Road benefits from a gateway feature to the north of Spooner Row comprising pinch points, with priority for vehicles travelling northbound, away from Spooner Row.
- 2.10 Within the village, Station Road benefits from a footway on its northern side, and is subject to a 30mph speed limit. It provides direct frontage access to residential dwellings with in-curtilage parking. A footway is provided on the northern side of Station Road from Spooner Row Primary School to the west to the junction with Chapel Road to the east.

- 2.11 Station Road has a level crossing to the south which benefits from recently-installed automatic barriers covering the full width of the carriageway on both approaches.
- 2.12 A level crossing is located on Station Road, which benefits from full width barriers, CCTV monitoring by a signaller, train signalling protection, road traffic light ("wig-wag") signals, audible alarm and signage. The level crossing is designated within the *ABC Railway Guide* as having an individual risk rating of I (low), which is the risk to individual users; and a collective risk rating of 6 (moderate).
- 2.13 To the east of Spooner Row Station forms the minor arm of a priority crossroads junction with Bunwell Road, Chapel Road and Guiler's Lane.

Chapel Road

- 2.14 Chapel Road forms the major arm of a priority crossroads junction with Station Road, Guilder's Land and Bunwell Road to the east of Holy Trinity Church, and is a single carriageway road with a footway on its western side.
- 2.15 From the crossroads to the south, Chapel Road is subject to a 30mph speed limit, which transitions to the national speed limit where the road name changes to Wymondham Road.

Wymondham Road

- 2.16 Wymondham Road is a single carriageway road subject to the national speed limit, which provides a link northwards towards Wymondham, passing under the A11.

Bunwell Road

- 2.17 Bunwell Road is a single carriageway road providing a link southwards towards Black Carr. A speed calming feature comprising a narrowing reducing the carriageway to one-way operation, with priority given to southbound vehicles. To the north of this speed calming feature Bunwell Road is subject to the 30mph speed limit, and to the south it is subject to a 40mph limit.

Public Transport

- 2.18 Rail services are available from Spooner Row Station, which is located approximately 400m (5 minute walk) from the site. Limited services are provided with two daily morning services to Norwich, with a return to Cambridge running late afternoon. On Saturday there is one train in each direction, with trains calling on request. However, two trains per hour in each direction pass through without stopping, including an hourly Cambridge to Norwich stopping service which also serves Ely, Thetford, Attleborough and Wymondham, currently operated by Abellio Greater Anglia.
- 2.19 The route 805 bus service is also available from the bus stop adjacent to the Village Hall providing a service between Wymondham and Wreningham on a Friday departing towards Wreningham at 13:10 and towards Wymondham at 10:40.

 Travel to Work data

2.20 2011 Census Travel to Work data for the resident population of Lower Layer Super Output Area – South Norfolk 007B is set out in Table 2.2, together with that for South Norfolk and the East of England Region for comparison. Full data is included in Appendix A.

Table 2.1: Travel to Work modal split data for South Norfolk 007B (source: 2011 Census)

Mode	Area and mode share		
	South Norfolk 007B	South Norfolk	East of England Region
Train	2%	1%	9%
Bus	4%	5%	4%
Taxi	1%	0%	0%
Motorcycle	1%	1%	1%
Car driver	78%	76%	66%
Car passenger	4%	5%	5%
Cycle	3%	3%	4%
Walk	7%	7%	11%

Conclusion

2.21 Spooner Row is served by public transport with bus and rail connectivity facilitating trips by non-car modes, although due to their current service frequencies a high proportion of trips are by private car. However, it is considered the site is located in a sustainable location for residential development, and has the potential for an increase in public transport provision to be provided in the future (see section 3.0). As such development at the site's detailed above are considered to be located in accordance with current national government policy as set out in the *National Planning Policy Framework*.

3.0 DEVELOPMENT PROPOSALS

3.1 An allocation for the following is are sought for each of the sites, as shown in the indicative plan attached at Appendix A, and summarised below:

- Parcel 1: 44 - 61 Residential Units
- Parcel 2: 39 - 54 Residential Units
- Parcel 3: 4 - 5 Residential Units and Local Shop
- Parcel 4: 59 - 88 Residential Units
- Parcel 5: 27 - 38 Residential Units
(potential school expansion and allotments)

Vehicular Access

3.2 Indicative vehicular access arrangements are shown on the plans at Appendix A, these would provide suitable visibility splays in-line with those calculated from observed vehicular speeds.

3.3 Vehicular access for Parcel 1 would be provided via a priority T-junction onto Chapel Road, with all units served internally within the site.

3.4 Vehicular access for Parcel 2 would be provided via a priority T-junction onto Station Road, with all units served internally within the site.

3.5 Vehicular access for Parcel 3 would be provided directly onto Guilder's Lane for the proposed residential dwellings. A small parking area would be provided for any local shop, with access provided from Chapel Road.

- 3.6 Vehicular access for Parcel 4 would be provided via a priority T-junction onto Chapel Road, with all units served internally within the site.
- 3.7 Vehicular access for Parcel 5 would be provided via a priority T-junction onto School Lane, for the units to the north of School Lane; with direct frontage access provided for the units to the south of School lane. Access for allotments and any potential school expansion would be provided through the proposed site.

Internal Layout and Parking Provision

- 3.8 The proposals will be designed in line with NCC's (Norfolk County Council's) highways design guidance, which currently states that *residential developments in Norfolk need to meet the standards set out in the document Manual for Streets (MFS)*.
- 3.9 On-site parking will be provided in accordance with NCC's maximum parking standards (or the most relevant guidance at the time an application is submitted), to meet the operational needs of the development and overcome the need for inappropriate on-street parking, whilst at the same time avoiding providing large amounts of parking for non-essential users that would encourage car use.
- 3.10 National planning policy guidance set out in the *NPPF* states that parking standards should take account of expected car ownership. As such, predicted car ownership would also be considered to ensure provision is also in-line with forecast demand.
- 3.11 Cycle parking will also be provided in-line with local and regional standards, to encourage the use of active modes of travel of that of the private car.
- 3.12 Secondary emergency, cycle and pedestrian links would also be provided where necessary, ensuring suitable connectivity is provided

to local facilities, and for existing residents of Spooner Row to access through these sites to increase permeability of the village and reduce journey times to key services and facilities.

Walking and Cycling

- 3.13 In conjunction with development on these sites, it is envisaged that pedestrian links to the railway station would be improved, which would also benefit existing residents of the village.

Buses

- 3.14 Discussions would be undertaken with NCC and local bus operators regarding the opportunity to increase frequency of existing services, or provide new services which would benefit both new and existing residents.

Rail

- 3.15 The proposals would be discussed with Network Rail, particularly regarding any increase in vehicular and pedestrian movements at the level crossing, and regarding any potential improvements which could be provided. It is likely that with development in the village, Abellio Greater Anglia (or its successor) would want more Cambridge-Norwich trains to call at Spooner Row, with the potential to provide an hourly service in each direction.

Travel Plan

- 3.16 A Travel Plan would be required to be implemented in conjunction with any development on the site in order to promote the use of sustainable modes of transport (walking, cycling, public transport and car sharing) by those living there. This would be prepared in accordance with good practice guidelines in force at the time of any planning application submission.

4.0 TRIP GENERATION/ATTRACTION, MODAL SPLIT & TRAFFIC IMPACT

Trip Generation/Attraction

- 4.1 The proposed unit numbers for each parcel of land, as detailed within Section 3.0, have been used to determine the anticipated trip generation for the proposed residential use using the industry-standard TRICS (Trip Rate Information Computer System). TRICS is a database of surveys used to obtain trip rates for all modes of travel by land use.
- 4.2 For the purposes of this assessment, the maximum anticipated number of units for each parcel of land has been used to ensure the assessment is robust.
- 4.3 The sites assessed within the TRICS database are deemed comparable with regards to size, location, and accessibility to public transport. The category *Mixed Private/Affordable Houses* has been used to calculate the anticipated person trips associated with the development.
- 4.4 The full outputs of the TRICS sites used are attached at Appendix B.
- 4.5 A local shop may be provided at Parcel 3, whilst Parcel 5 allows for allotments and a potential expansion of the school. However, it is not anticipated these land uses would result in any additional vehicular trips on the wider highway network with any trips associated with these uses largely comprising linked and pass-by trips, as such, trips associated with this use have not been considered as part of this assessment.
- 4.6 The modal split of a development is influenced by a range of factors, namely location and proximity to local services, pedestrian and cycle facilities and public transport, and even topography in the case of walking and cycling.

- 4.7 To determine modal split, 2011 Census Travel to Work data has been derived. This data, specific to the local area for the *South Norfolk 007B Output Area*, gives details of the actual modal split of journeys by people currently living and working in the immediate area, and thus a good indicator of likely future travel behaviour associated with occupants of future development.
- 4.8 The 2011 Census Travel to Work data is included at Appendix C. This approach gives a robust estimate of car trips as a proportion of home-based trips associated with other uses, especially education trips in the weekday morning peak period, as these are more likely to be on foot
- 4.9 Table 4.1 sets out the adopted person trip rates derived from the TRICS analysis, and the resultant anticipated person trips associated with each land parcel.
- 4.10 Tables 4.2 to 4.5 then apply the anticipated modal split from the census data to determine the anticipated multi-modal trips associated with each land parcel.

Table 4.1: Parcels 1 to 5 - Predicted weekday peak hour person trips (source: TRICS)

	Weekday am peak hour (08:00-09:00)			Weekday pm peak hour (17:00-18:00)		
	<i>In</i>	<i>Out</i>	<i>2-way</i>	<i>In</i>	<i>Out</i>	<i>2-way</i>
Person trip rates (per dwelling)	0.265	0.833	1.098	0.588	0.348	0.936
Parcel 1 (61 units)	9	44	53	30	14	44
Parcel 2 (54 units)	8	39	47	27	13	39
Person Trips						
Parcel 3 (5 units)	1	4	4	2	1	4
Parcel 4 (88 units)	13	64	76	43	21	64
Parcel 5 (38 units)	6	30	36	20	10	30

Note: Errors due to rounding

Table 4.2: Parcel 1 - Predicted weekday peak hour multi-modal trips (source: TRICS/Census)

Parcel 1 (61 Units)	Weekday am peak hour (08:00-09:00)			Weekday pm peak hour (17:00-18:00)		
	<i>In</i>	<i>Out</i>	<i>2-way</i>	<i>In</i>	<i>Out</i>	<i>2-way</i>
	TOTAL PERSON TRIPS	9	44	53	30	14
Vehicle trips (79%)	7	35	42	24	11	35
Car passenger trips (4%)	0	2	2	1	1	2
Train passenger trips (2%)	0	1	1	1	0	1
Bus passenger trips (4%)	0	2	2	1	1	2
Pedal cycle trips (3%)	0	1	2	1	0	1
Walking trips (7%)	1	3	4	2	1	3

Note: Errors due to rounding

Table 4.3: Parcel 2 - Predicted weekday peak hour multi-modal trips (source: TRICS/Census)

Parcel 2 (54 Units)	Weekday am peak hour (08:00-09:00)			Weekday pm peak hour (17:00-18:00)		
	<i>In</i>	<i>Out</i>	<i>2-way</i>	<i>In</i>	<i>Out</i>	<i>2-way</i>
	TOTAL PERSON TRIPS	8	39	47	27	13
Vehicle trips (79%)	6	31	37	21	10	31
Car passenger trips (4%)	0	2	2	1	1	2
Train passenger trips (2%)	0	1	1	1	0	1
Bus passenger trips (4%)	0	2	2	1	1	2
Pedal cycle trips (3%)	0	1	2	1	0	1
Walking trips (7%)	1	3	3	2	1	3

Note: Errors due to rounding

Table 4.4: Parcel 3 - Predicted weekday peak hour multi-modal trips (source: TRICS/Census)

Parcel 3 (5 Units)	Weekday am peak hour (08:00-09:00)			Weekday pm peak hour (17:00-18:00)		
	<i>In</i>	<i>Out</i>	<i>2-way</i>	<i>In</i>	<i>Out</i>	<i>2-way</i>
	TOTAL PERSON TRIPS	1	4	4	2	1
Vehicle trips (79%)	1	3	3	2	1	3
Car passenger trips (4%)	0	0	0	0	0	0
Train passenger trips (2%)	0	0	0	0	0	0
Bus passenger trips (4%)	0	0	0	0	0	0
Pedal cycle trips (3%)	0	0	0	0	0	0
Walking trips (7%)	0	0	0	0	0	0

Note: Errors due to rounding

Table 4.5: Parcel 4 - Predicted weekday peak hour multi-modal trips (source: TRICS/Census)

Parcel 4 (90 Units)	Weekday am peak hour (08:00-09:00)			Weekday pm peak hour (17:00-18:00)		
	<i>In</i>	<i>Out</i>	<i>2-way</i>	<i>In</i>	<i>Out</i>	<i>2-way</i>
	TOTAL PERSON TRIPS	13	65	78	44	21
Vehicle trips (79%)	10	52	62	35	17	52
Car passenger trips (4%)	1	3	3	2	1	3
Train passenger trips (2%)	0	1	2	1	0	1
Bus passenger trips (4%)	1	3	3	2	1	3
Pedal cycle trips (3%)	0	2	3	1	1	2
Walking trips (7%)	1	4	5	3	1	4

Note: Errors due to rounding

Table 4.6: Parcel 5 - Predicted weekday peak hour multi-modal trips (source: TRICS/Census)

Parcel 5 (38 Units)	Weekday am peak hour (08:00-09:00)			Weekday pm peak hour (17:00-18:00)		
	<i>In</i>	<i>Out</i>	<i>2-way</i>	<i>In</i>	<i>Out</i>	<i>2-way</i>
	TOTAL PERSON TRIPS	5	28	33	19	9
Vehicle trips (79%)	4	22	26	15	7	22
Car passenger trips (4%)	0	1	1	1	0	1
Train passenger trips (2%)	0	1	1	0	0	1
Bus passenger trips (4%)	0	1	1	1	0	1
Pedal cycle trips (3%)	0	1	1	1	0	1
Walking trips (7%)	0	2	2	1	1	2

Note: Errors due to rounding

4.11 As shown above, it is anticipated the majority of trips associated each parcel of land would be vehicular, although there would also be some increase public transport, walk and cycle trips. The combined trip generation for all four parcels of land combined is shown in Table 4.7 on the following page.

Table 4.7: Parcels 1 to 5 - Predicted weekday peak hour multi-modal trips (source: TRICS/Census)

Parcels 1-5	Weekday am peak hour (08:00-09:00)			Weekday pm peak hour (17:00-18:00)		
	<i>In</i>	<i>Out</i>	<i>2-way</i>	<i>In</i>	<i>Out</i>	<i>2-way</i>
	TOTAL PERSON TRIPS	35	178	214	122	57
Vehicle trips (79%)	28	141	170	96	45	142
Car passenger trips (4%)	2	8	9	5	3	8
Train passenger trips (2%)	1	4	5	3	1	4
Bus passenger trips (4%)	1	7	9	5	2	7
Pedal cycle trips (3%)	1	6	7	4	2	6
Walking trips (7%)	2	12	15	8	4	12

Note: Errors due to rounding

Vehicle trip distribution/assignment

- 4.12 The distribution of the anticipated increase in trips would be derived using Census Travel to Work Origin-Destination (O-D) data for the resident population, and assigned onto the local highway network based on anticipated journey times. It is anticipated that the majority of trips would travel to/from the north, with vehicles joining the A11 at the B1172 junction, and travelling northwards towards Wymondham and Norwich via Wymondham Road. Some trips are also anticipated to travel southwards towards Diss and the A140 on Bunwell Road.

Capacity Assessment

- 4.13 Traffic surveys would be undertaken on the local highway network to determine background traffic, suitable growth would then be applied to this with this approach agreed with highway officers at NCC.
- 4.14 Junction capacity assessment would be undertaken at junctions on the local highway network as agreed with NCC, it is anticipated capacity assessment would be undertaken at the following junctions, the scope of which would be agreed with NCC during pre-application discussions:

- Each site access onto the local highway network;
- Chapel Road/Station Road/Guiler's Lane crossroad junction;
and
- School Lane/Station Road junction.

4.15 Discussions would also be undertaken with HE regarding the requirement for any capacity assessment of the junctions accessing the A11.

4.16 If it is shown the proposed development results in a severe impact on the local highways network, the opportunity to provide suitable mitigation measures would be discussed with the highway officers at NCC, and HE, if necessary.

5.0 FLOOD RISK AND DRAINAGE

5.1 From a review of the Environment Agency's mapping, Parcel 3 is not shown to lie within the indicative undefended floodplain of any designated main river and is therefore considered to be at a low risk of fluvial flooding, as defined by the latest legislation (National Planning Policy Framework – NPPF, published in March 2012), as illustrated below:



Plate 6: Indicative Floodplain Mapping (Parcel 3)

5.2 The four other sites (Parcels 1, 2, 4 and 5) also seeking allocation are shown to partially lie within the indicative undefended floodplain of the nearby designated main river which is known as a contributor to the River Yare, as illustrated below:

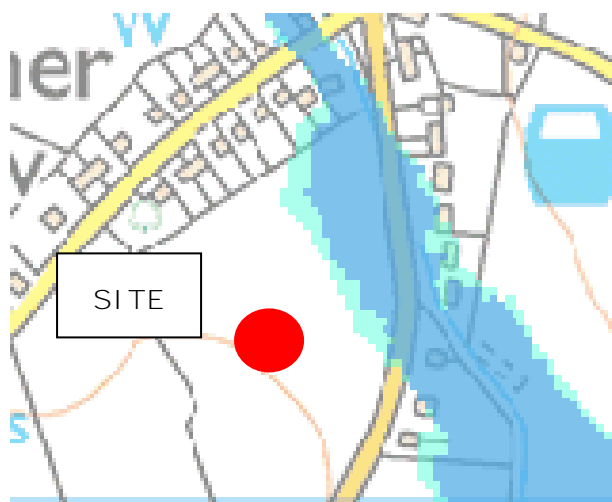


Plate 7: Indicative Floodplain Mapping (Parcel 1)

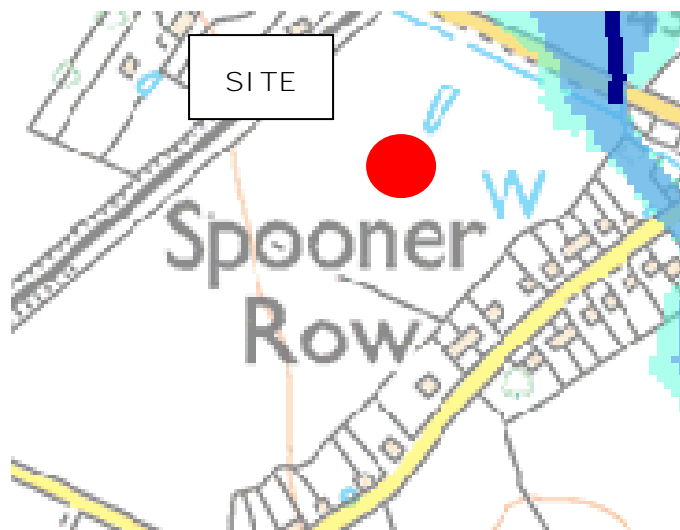


Plate 8: Indicative Floodplain Mapping (Parcel 2)

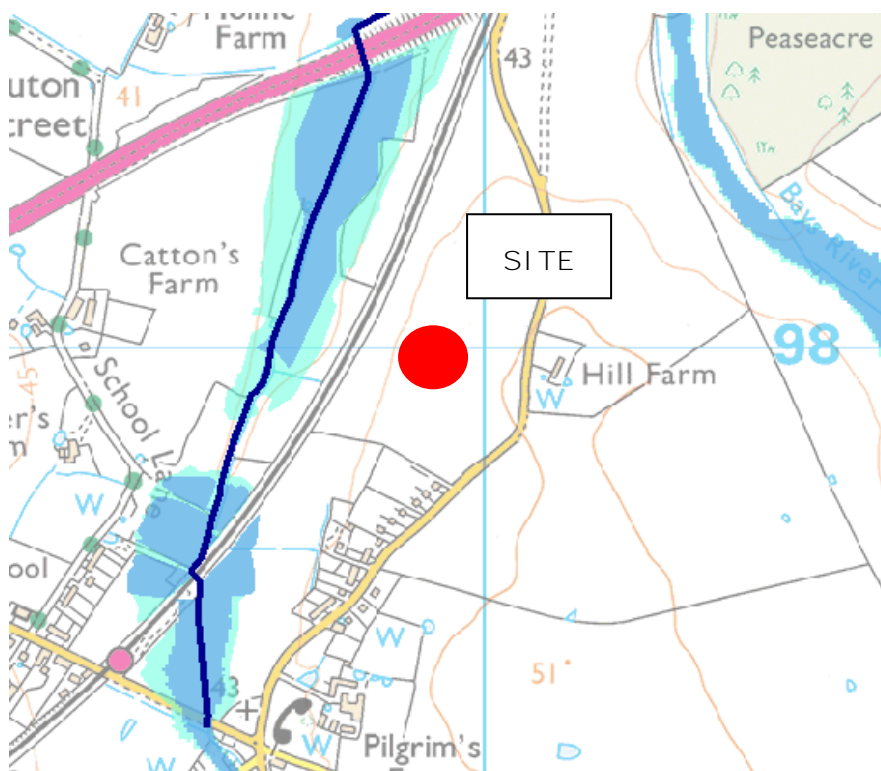


Plate 9: Indicative Floodplain Mapping (Parcel 4)

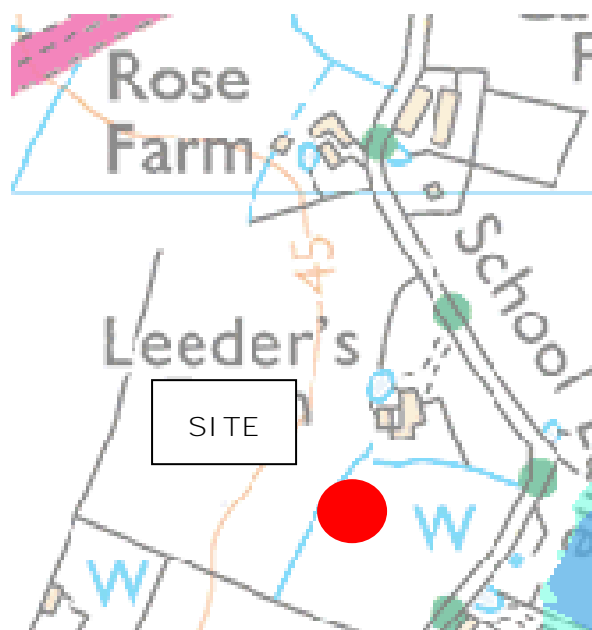


Plate 10: Indicative Floodplain Mapping (Parcel 5)

- 5.3 Sites which are deemed to be at a low probability of fluvial flooding are described as land having less than 1 in 1,000 annual probability of river or tidal flooding and classified as a Flood Risk Zone 1 site. Whereas, sites which are deemed to be at a medium or high probability of fluvial flooding are classified as being within a Flood Risk Zone 2 and 3 area.
- 5.4 The NPPF uses the concept of sequential testing and risk based approach to flood risk and development. The sequential test aims to steer new development to areas with the lowest probability of flooding. Referring to Table 2 outlined on the NPPF's Planning Practice Guidance web-portal, development schemes which include residential dwellings are deemed to be a 'more vulnerable' land class usage, in terms of flood risk, as illustrated on the following page.

More Vulnerable

- Hospitals
- Residential institutions such as residential care homes, children’s homes, social services homes, prisons and hostels.
- Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels.
- Non-residential uses for health services, nurseries and educational establishments.
- Landfill* and sites used for waste management facilities for hazardous waste.
- Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

5.5 Table 3 on the NPPF’s Planning Practice Guidance web-portal confirms that ‘more vulnerable’ land class usages such as residential schemes are considered appropriate in Flood Risk Zone 1 and 2 areas, as illustrated in the table below:

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	X	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	X	X	X	✓*

Key:

- ✓ Development is appropriate
- X Development should not be permitted.

5.6 In view of the above classification, Parcel 3 will comply with the requirements of the NPPF. To demonstrate compliance for Parcels 1, 2, 4 and 5 the masterplan for each site will be carefully devised to ensure the residential units are sequentially positioned on the land so that they are situated outside the floodplain extent of the designated main river.

5.7 To ensure that none of the units experience any floodwater inundation from the designated main river, the finished floor levels

will be set above the peak 1:100 year fluvial floodwater level, including an allowance for any potential climate change impact, as per the requirements of the NPPF.

- 5.8 In addition to the above, each of the sites is not considered to be at risk of flooding from any nearby reservoir:

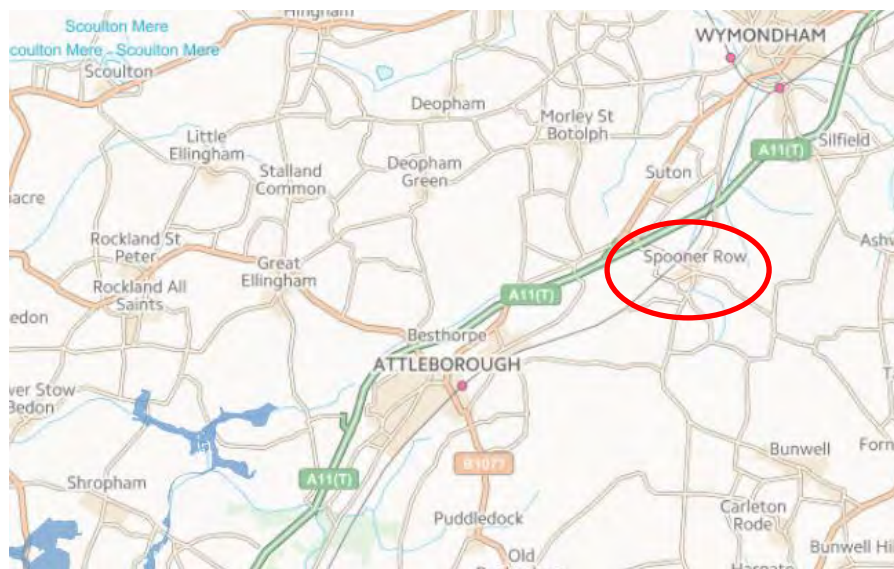


Plate 11: Extent of Local Reservoir Flooding

- 5.9 For Parcels 1, 2, 4 and 5, these sites will endeavour to provide a vehicular access outside the floodplain extent to offer the residents a dry and safe means of escape, or a secondary emergency access will be provided to fulfil this criteria.
- 5.10 Where the designated main river traverses a particular parcel of land, a buffer zone will be provided so that future maintenance operations can be successfully undertaken.
- 5.11 Any existing ordinary watercourses/ditches will also be retained where possible or compensatory lengths provided instead to ensure there is no net loss.
- 5.12 Should a planning application for each site be forthcoming, the submission will be supported by a site-specific Flood Risk

Assessment (FRA), (assuming the application's red-line boundary area exceeds one hectare), to avoid a default objection being raised by the Local Planning Authority.

5.13 The FRA report will be able to confirm that:

- The development scheme is at a low risk of flooding;
- The development scheme and its occupants will not be at an increased risk of flooding;
- The development scheme will not increase the risk of flooding elsewhere; and
- The development scheme can be drained in a sustainable manner.

SuDS/Surface Water Strategy Principles

5.14 The Drainage Authority for the area is Anglian Water and a copy of the public sewer record plan has been obtained and provided in Appendix D of this report for further reference.

5.15 No public sewers are shown to fall within any of the site's boundaries and therefore no diversion or protection works are required to accommodate the development proposals for each parcel of land.

5.16 To dispose of the surface water run-off generated by each development, a SuDS drainage strategy will be provided which seeks to offer a range of varying techniques which adopt the principles outlined within the latest guidance such as the SuDS Manual (Report C753) produced by CIRIA and other emerging publications and legislation.

5.17 CIRIA’s SuDS Manual contains a table (Table 7.1) which outlines the typical forms of SuDS features that can be adopted, as illustrated below:

TABLE 7.1 SuDS component delivery of design criteria

Component type	Description	Collection mechanism	Design criteria						Further information (Chapter ref)
			Water quantity (Chapter 3)			Water quality (Chapter 4)	Amenity (Chapter 5)	Biodiversity (Chapter 6)	
			Peak runoff rate	Runoff volumes					
				Small events (interceptions)	Large events				
Rainwater harvesting systems	Systems that collect runoff from the roof of a building or other paved surface for use	P	●	●		●			11
Green roofs	Planted soil layers on the roof of buildings that slow and store runoff	S	○	●		●	●	●	12
Infiltration systems	Systems that collect and store runoff, allowing it to infiltrate into the ground	P	●	●	●	●	●	●	13
Proprietary treatment systems	Subsurface structures designed to provide treatment of runoff	P				●			14
Filter strips	Grass strips that promote sedimentation and filtration as runoff is conveyed over the surface	L		●		●	○	○	15
Filter drains	Shallow stone-filled trenches that provide attenuation, conveyance and treatment of runoff	L	●	○		●	○	○	16
Swales	Vegetated channels (sometimes planted) used to convey and treat runoff	L	●	●	●	●	●	●	17
Bioretention systems	Shallow landscaped depressions that allow runoff to pond temporarily on the surface, before filtering through vegetation and underlying soils	P	●	●	●	●	●	●	18
Trees	Trees within soil-filled tree pits, tree planters or structural soils used to collect, store and treat runoff	P	●	●		●	●	●	19
Pervious pavements	Structural paving through which runoff can soak and subsequently be stored in the sub-base beneath, and/or allowed to infiltrate into the ground below	S	●	●	●	●	○	○	20
Attenuation storage tanks	Large, below-ground voided spaces used to temporarily store runoff before infiltration, controlled release or use	P	●						21
Detention basins	Vegetated depressions that store and treat runoff	P	●	●		●	●	●	22
Ponds and wetlands	Permanent pools of water used to facilitate treatment of runoff – runoff can also be stored in an attenuation zone above the pool	P	●			●	●	●	23

Plate 12: Table 7.1 SuDS Manual (CIRIA Report 753)

5.18 In the first instance, the use of infiltration drainage techniques will be investigated to determine whether any of the surface water run-

off can be directed to the underlying soil stratum, providing suitable ground conditions exist.

5.19 To inform the SuDS design, it is anticipated that an assessment of the soil's suitability to support the use of infiltration drainage techniques will be carried to determine:

- The soil's precise infiltration rate;
- Depth to the groundwater table; and
- Whether any material is contaminated (identifying any necessary mitigation/remedial measures).

5.20 To dispose of the surface water run-off, it is anticipated that the development scheme could potentially adopt the following SuDS techniques (subject to further assessment):

- Balancing pond/detention basin provided within the open areas;
- Swales;
- Infiltration drainage devices (providing suitable soil conditions exist);
- Permeable paving construction to private driveway and parking courtyard areas (to delay the rate of inundation to the site's drainage network downstream).

5.21 An alternative option could be to direct the surface water run-off to the nearby main river also and will require the discharge rate to be controlled/limited to a commensurate greenfield run-off rate.

5.22 Each SuDS scheme would be designed to demonstrate that a 1:100 year rainfall event (including an allowance for climate change) can be accommodated within the network. The SuDS schemes would also be designed to offer a range of treatment trains to ensure that

the receiving systems are not contaminated as a result of the development's implementation.

- 5.23 Detailed consultations will be held with the Environment Agency and/or Local Lead Flood Authority to discuss the principles of the SuDS strategy and to secure any necessary discharge consents etc.

Foul Water Strategy Principles

- 5.24 Consulting with the public sewer asset record plans illustrates that there are no foul water sewers in close proximity to each of the sites. In this respect, no diversion/protection works are required to accommodate the development proposals.
- 5.25 To dispose of the foul water flows generated by each parcel of development, it is anticipated that separate package treatment works will be provided which offers a high level of performance to allow the discharge to be directed to a receiving source. There is the option for Parcel 5 to direct foul water flows to the nearby public sewer network as an alternative, subject to consultation with Anglian Water.
- 5.26 Detailed consultation will be held with the Environment Agency and Council to agree the appropriate level of treatment required for each device.

6.0 SUMMARY AND CONCLUSIONS

6.1 is seeking an allocation of several parcels of land at Spooner Row to accommodate a largely residential led development represented in the 'Call for Sites' process.

6.2 It is proposed that development on the various sites would have a combination of direct frontage access and simple priority T-junctions onto the local highway network

6.3 The internal highway network would be designed in-line with relevant design standards as set out by NCC and SNDC, and in-line with guidance set out within Manual for Streets. Parking would be provide in-line with anticipated demand, and relevant local and regional standards.

6.4 Improvements to the pedestrian and cycle network would be provided where possible, improving links to Spooner Row Railway Station. There is potentially scope for more trains to stop at Spooner Row with more housing likely to encourage operator to do this with potential for hourly service each way

6.5 Improvements to bus facilities and operation would also be considered, with discussions undertaken with local bus operators, NCC and SNDC.

6.6 In view of the above we consider that this site is suitable for allocation for a residential led development in transport terms.

6.7 The masterplan for each site will be carefully devised to ensure that the residential properties are strategically positioned so that they do not conflict with the floodplain extent and are therefore considered to be within the Flood Risk Zone 1 area of the site.

- 6.8 The finished floor levels will be set above the 1:100 year peak fluvial event (including an allowance for climate change) to ensure no floodwater encroachment occurs to any property.
- 6.9 Buffer zones would be provided from the top of the designated main river's banks to ensure future maintenance works can be carried out. Any existing ordinary watercourse/ditches would also be retained where possible or compensatory lengths provided instead to ensure no net loss.
- 6.10 There is no risk of flooding from any nearby reservoir.
- 6.11 A means of dry/safe escape will be available to all residents in the event of an extreme flooding event to enable the occupants to vacate their premises or allow emergency vehicles to access the site.
- 6.12 An application for each of the sites will be accompanied by a detailed site-specific Flood Risk Assessment where the land is designated as being in a Flood Risk Zone 2 and/or 3, or the application area exceeds one developable hectare, to comply with the requirements of the NPPF.
- 6.13 No public sewers will need to be diverted or protected.
- 6.14 A suitable SuDS strategy will be devised which will seek to utilise infiltration drainage techniques or outfall to the designated main river/ordinary watercourse. Each SuDS system will be hydraulically designed to ensure the network can withstand the impact of a 1:100 year rainfall event (including an allowance for climate change). Suitable features such as basins, ponds, swales etc. will be included in the scheme to attenuate the resultant volumes of run-off.

Appendix A



- 1 Wetland habitat with footpath/deck access across
- 2 Flood attenuation features
- 3 Play area
- 4 Community Orchards
- 5 New pedestrian space
- 6 Meadow
- 7 Avenue planting
- 8 Station car park
- 9 Potential school expansion
- 10 Allotments
- 11 Retained and enhanced hedges
- 12 Proposed hedges and structural planting

Project
 Land at Spooner Row
 South Norfolk
 Drawing Title
 Illustrative Framework

Date 07.07.16	Scale 1:1250 @A1	Drawn by JL	Check by CA
Project No 26248	Drawing No sk-070716-1	Revision -	



BARTON WILLMORE

Planning • Master Planning & Urban Design
 Architecture • Landscape Planning & Design • Project Services
 Environmental & Sustainability Assessment • Graphic Design

bartonwillmore.co.uk

Offices at Reading London Bristol Cambridge Cardiff Ebbw Vale Edinburgh Leeds Solihull

Reproduced from the Ordnance Survey Map with the permission of the controller of HMSO. Crown copyright reserved. Licence No. 100012292.

Appendix B

LIST OF SITES relevant to selection parameters

1	ES-03-M-05	HOUSES & FLATS	EAST SUSSEX
	A26 CROWBOROUGH RD		
	FIVE ASH DOWN VILLAGE		
	NEAR UCKFIELD		
	Neighbourhood Centre (PPS6 Local Centre)		
	Village		
	Total Number of dwellings:	138	
	Survey date: MONDAY	30/06/14	Survey Type: MANUAL
2	SC-03-M-02	HOUSES & FLATS	SURREY
	DEEPCUT BRIDGE ROAD		
	DEEPCUT		
	NEAR FRIMLEY		
	Neighbourhood Centre (PPS6 Local Centre)		
	Village		
	Total Number of dwellings:	342	
	Survey date: WEDNESDAY	10/02/10	Survey Type: MANUAL

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING
 MULTI-MODAL VEHICLES
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	240	0.063	2	240	0.254	2	240	0.316
08:00 - 09:00	2	240	0.115	2	240	0.440	2	240	0.555
09:00 - 10:00	2	240	0.127	2	240	0.212	2	240	0.339
10:00 - 11:00	2	240	0.098	2	240	0.117	2	240	0.215
11:00 - 12:00	2	240	0.115	2	240	0.152	2	240	0.267
12:00 - 13:00	2	240	0.135	2	240	0.154	2	240	0.289
13:00 - 14:00	2	240	0.146	2	240	0.133	2	240	0.279
14:00 - 15:00	2	240	0.152	2	240	0.183	2	240	0.335
15:00 - 16:00	2	240	0.273	2	240	0.198	2	240	0.471
16:00 - 17:00	2	240	0.267	2	240	0.165	2	240	0.432
17:00 - 18:00	2	240	0.350	2	240	0.169	2	240	0.519
18:00 - 19:00	2	240	0.338	2	240	0.127	2	240	0.465
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.178			2.304			4.482

Parameter summary

Trip rate parameter range selected: 138 - 342 (units:)
 Survey date range: 01/01/08 - 04/11/15
 Number of weekdays (Monday-Friday): 2
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 2

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING
 MULTI-MODAL TOTAL PEOPLE
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	240	0.081	2	240	0.331	2	240	0.412
08:00 - 09:00	2	240	0.144	2	240	0.725	2	240	0.869
09:00 - 10:00	2	240	0.192	2	240	0.306	2	240	0.498
10:00 - 11:00	2	240	0.150	2	240	0.181	2	240	0.331
11:00 - 12:00	2	240	0.158	2	240	0.202	2	240	0.360
12:00 - 13:00	2	240	0.206	2	240	0.202	2	240	0.408
13:00 - 14:00	2	240	0.200	2	240	0.183	2	240	0.383
14:00 - 15:00	2	240	0.196	2	240	0.256	2	240	0.452
15:00 - 16:00	2	240	0.560	2	240	0.252	2	240	0.812
16:00 - 17:00	2	240	0.408	2	240	0.221	2	240	0.629
17:00 - 18:00	2	240	0.494	2	240	0.233	2	240	0.727
18:00 - 19:00	2	240	0.415	2	240	0.167	2	240	0.582
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.204			3.259			6.463

Parameter summary

Trip rate parameter range selected: 138 - 342 (units:)
 Survey date range: 01/01/08 - 04/11/15
 Number of weekdays (Monday-Friday): 2
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 2

Appendix C



Morley
St Botolph

WYMONDHAM

Suton

Silfield

Wrenningham

Ashwellthorpe

Spooner
Row

Fundenhall

Besthorpe

1.9km

Neighbourhood Statistics



Original URL: <http://www.neighbourhood.statistics.gov.uk/dissemination/LeadTableView.do?a=7&b=6308743&c=south+norfolk&d=141&e=61&f=32084&q=6450355&i=1001x1003x1032x1004x1005&l=2567&o=362&m=0&r=1&s=1467892051759&>

Method of Travel to Work, 2011 (QS701EW)

Period: Mar11

Area: South Norfolk 007B (Lower Layer Super Output Area)

Variable	Measure	South Norfolk 007B	South Norfolk (Non-Metropolitan District)	East of England	England
All Usual Residents Aged 16 to 74 (Persons) ¹	Count	1,061	89,337	4,245,544	38,881,374
Work Mainly at or From Home (Persons) ¹	Count	74	4,436	161,428	1,349,568
Underground, Metro, Light Rail, Tram (Persons) ¹	Count	1	80	33,110	1,027,625
Train (Persons) ¹	Count	14	805	205,077	1,343,684
Bus, Minibus or Coach (Persons) ¹	Count	27	2,666	106,303	1,886,539
Taxi (Persons) ¹	Count	4	146	13,227	131,465
Motorcycle, Scooter or Moped (Persons) ¹	Count	6	644	22,475	206,550
Driving a Car or Van (Persons) ¹	Count	527	42,276	1,757,121	14,345,882
Passenger in a Car or Van (Persons) ¹	Count	30	2,800	143,749	1,264,553
Bicycle (Persons) ¹	Count	22	1,909	100,651	742,675
On Foot (Persons) ¹	Count	46	4,140	288,663	2,701,453
Other Method of Travel to Work (Persons) ¹	Count	4	431	17,708	162,727
Not in Employment (Persons) ¹	Count	306	29,004	1,396,032	13,718,653

Last Updated: 30 January 2013
Source: Office for National Statistics

Notes

¹ National Statistics

This material is Crown Copyright. You may re-use this information (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence. To view this licence, visit www.nationalarchives.gov.uk/doc/open-government-licence Information Policy Team, The National Archives, Kew, London TW9 4DU, or email: psi@nationalarchives.gsi.gov.uk. When reproducing this material, the source should be acknowledged.

Appendix D



0m 250m 500m 750m
 Date: 23/06/16 Scale: 1:1250 Map Centre: 609603.297248 Data updated: 01/02/16 Our Ref: 189709 - 1 Wastewater Plan A0

(C) Crown copyright and database rights 2016 Ordnance Survey 10002432
 This plan is provided by Anglian Water pursuant to obligations under the Water Industry Act 1991 sections 198 or 199. It must be used in conjunction with any health and safety notices. The information on this plan is based on data currently reported but position must be regarded as approximate. Service pipes, or other drains and drains are generally not shown. Users of this map are strongly advised to commission their own survey of the area shown on the plan before carrying out any works. The actual position of all apparatus MUST be established by real tools. No liability whatsoever, including liability for negligence, is accepted by Anglian Water for any error or inaccuracy in this plan, including the fact that the location of any sewer man (exchange pipe, sewer or disposal man or any form of apparatus. This information is valid for the date printed. This plan is produced by Anglian Water Services Limited (C) Crown copyright and database rights 2016 Ordnance Survey 10002432. This map is to be used for the purposes of viewing the location of Anglian Water plant only. Any other uses of the map data or further copies is not permitted. This notice is not intended to exclude or restrict liability for death or personal injury resulting from negligence.

	Foul Sewer		Outfall
	Surface Sewer		Inlet (Colour denotes effluent type)
	Combined Sewer		Manhole (Colour denotes effluent type)
	Final Effluent		Sewage Treatment Works
	Rising Main		Pumping Station
	Private Sewer		
	Disconnection		
	Decommissioned Sewer		

	sburton@ardent.co.uk
	Spooners Row



Map Centre: 609603.297248
 Data updated: 01/02/16

Our Ref: 189709 - 1
 Wastewater Plan A0

Manhole Reference	Easting	Northing	Liquid Type	Cover Level	Invert Level	Depth to Invert
5601	609519	297631	E	-	-	-
4800	609411	297667	F	-	-	-
4801	609476	297639	F	-	-	-
5600	609502	297626	F	-	-	-

Manhole Reference	Easting	Northing	Liquid Type	Cover Level	Invert Level	Depth to Invert
-------------------	---------	----------	-------------	-------------	--------------	-----------------

Manhole Reference	Easting	Northing	Liquid Type	Cover Level	Invert Level	Depth to Invert
-------------------	---------	----------	-------------	-------------	--------------	-----------------

Manhole Reference	Easting	Northing	Liquid Type	Cover Level	Invert Level	Depth to Invert
-------------------	---------	----------	-------------	-------------	--------------	-----------------

Manhole Reference	Easting	Northing	Liquid Type	Cover Level	Invert Level	Depth to Invert
-------------------	---------	----------	-------------	-------------	--------------	-----------------

Manhole Reference	Easting	Northing	Liquid Type	Cover Level	Invert Level	Depth to Invert
-------------------	---------	----------	-------------	-------------	--------------	-----------------



(C) Crown copyright and database rights 2016 Ordnance Survey 10002432 Date: 23/06/16 Scale: 1:1250 Map Centre: 609717,288193 Data updated: 01/02/16 Our Ref: 189709_2 Wastewater Plan A0

This plan is provided by Anglian Water pursuant to obligations under the Water Industry Act 1991 sections 198 or 199. It must be used in conjunction with any health and safety notices attached. This information is based on data currently reported but position must be reported as appropriate. Service pipes, other sewers and drains are generally not shown. Users of this map are strongly advised to commission their own survey of the area shown on the plan before carrying out any works. The actual position of all apparatus MUST be established by field notes. No liability whatsoever, including liability for negligence, is accepted by Anglian Water for any error or omission or consequence, including the failure to accurately record or record at all, the location of any asset, manhole, discharge pipe, sewer or disposal man or any item of apparatus. This information is valid for the date printed. This plan is produced by Anglian Water Services Limited (C) Crown copyright and database rights 2016 Ordnance Survey 10002432. This map is to be used for the purposes of locating the location of Anglian Water plant only. Any other uses of the map data or further copies is not permitted. This notice is not intended to exclude or restrict liability for death or personal injury resulting from negligence.

	Foul Sewer		Outfall (Colour denotes effluent type)
	Surface Sewer		Inlet (Colour denotes effluent type)
	Combined Sewer		Manhole (Colour denotes effluent type)
	Final Effluent		Sewage Treatment Works
	Rising Main (Colour denotes effluent type)		Pumping Station
	Force Mains (Colour denotes effluent type)		
	Discharge Pipe (Colour denotes effluent type)		



aburtn@ardent.co.uk
Spooners Row (B)

