Broads Local Plan
Local Infrastructure Report
June 2016

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1. Introduction

The NPPF, at paragraph 162, says:

> *Local planning authorities should work with other authorities and providers to:*
> - *assess the quality and capacity of infrastructure for transport, water supply, wastewater and its treatment, energy (including heat), telecommunications, utilities, waste, health, social care, education, flood risk and coastal change management, and its ability to meet forecast demands*

This report seeks to summarise the needs and approaches to provision of local infrastructure.

2. The Authority's constituent districts and their infrastructure studies

To support their proposals in current Local Development Frameworks and to support future proposals in future Local Plans, our District Council's assess the infrastructure requirements. The Broads' housing need number is included within our district's total housing need and the infrastructure needs of that total number for the entire district will be assessed through these studies. The Authority works closely with its constituent districts as Local Plans are produced.

3. Norfolk Strategic Framework

As part of the Norfolk Strategic Framework (NSF) work is ongoing at a Norfolk-wide level to address the same issues as listed in the NPPF, but from a more strategic view point. The Norfolk Strategic Infrastructure Group is investigating strategic infrastructure issues. Whilst the NSF looks at strategic infrastructure this report summarises infrastructure at a local level.

4. The housing need for the Broads

Whilst the need for the Broads, as calculated through the Central Norfolk Strategic Market Housing Assessment[1], is 320 between 2012 and 2036 over the Broads Authority Executive Area as a whole, at 2016 this figure had been far exceeded.

However, the Broads is part of three different Housing Market Areas. Looking at provision and allocations in each Housing Market Area shows that the need is exceeded in two, but there is a residual amount in one HMA. There is a residual need of around 40 dwellings in the Great Yarmouth Borough Council part of the Broads.

Whilst there is a separate Topic Paper on meeting housing need in the Broads, it is the residual 40 dwellings that this Local Infrastructure Report assesses. It is presumed that all other completions, permissions and allocations (from the 2014 Site Specifics Local Plan) do not result in any extra infrastructure requirements relevant to the Local Plan other than any issues raised at the Planning Application stage.

5. Transport

The NPPG Paragraph 17 says

> - *actively manage patterns of growth to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable*

The NPPF at paragraph 29 recognises the difference between rural and urban areas:

[1] http://www.broads-authority.gov.uk/planning/planning-policies/development/future-local-plan

- *the Government recognises that different policies and measures will be required in different communities and opportunities to maximise sustainable transport solutions will vary from urban to rural areas.*

An important transport consideration is the dualling of the Acle Straight[2]. Whilst on one hand this is local to the Broads, it is also of strategic importance as the road is a Trunk Road. The A47 is the main strategic route linking Norfolk to the midlands and the north (westbound) and central/northern Europe (eastbound) The Authority is considering a policy relating to this in the new Local plan.

New allocations could have local highway network impacts of varying scales. The Authority will work with the relevant Local Highways Authority. Individual allocations will be considered by the Highways Authority. Indeed the Highways Authority will still assess individual planning applications. Please note that those allocations rolled forward from the 2014 Sites Specifics Local Plan are deemed adequate in relation to transport.

Public transport is supported, although it should be noted that the scale of growth and the sites allocated in the Local Plan will not be of a scale to generate the need for a viable changes to bus routes. In relation to rail, the Local Plan seeks to identify and allocate rail stations.

Development allocations and development boundaries are located in more sustainable locations where services and facilities can be accessed by modes other than single occupancy cars.

Some dis-used railways allocated in the Local Plan and safeguarded to enable them to be used as recreation routes.

6. Water

The NPPG asks '*why should planning be concerned with water supply, wastewater and water quality?*'. It goes on to say:

'Adequate water and wastewater infrastructure is needed to support sustainable development. A healthy water environment will also deliver multiple benefits, such as helping to enhance the natural environment generally and adapting to climate change.

The EU Water Framework Directive applies to surface waters (including some coastal waters) and groundwater (water in underground rock). It requires member states, among other things, to prevent deterioration of aquatic ecosystems and protect, enhance and restore water bodies to 'good' status. Local planning authorities must, in exercising their functions, have regard to the river basin management plans on the Environment Agency website that implement the Water Framework Directive. These plans contain the main issues for the water environment and the actions needed to tackle them.'

Water is a particularly important consideration in the Broads. Abstraction to serve development and wastewater can potentially have a profound impact on the quality of the system. Development and activities within the catchment can impact on the Broads, for example agricultural practices, even if located some way from the Broads, can lead to sediment and chemicals washing downstream to the Broads which can lead to reduced water depth, turbidity and impact on the aquatic system through excess nutrients . These are all matters which planning can influence potentially with close cooperation with neighbouring Local Planning Authorities.

1. <u>Water supply</u>

[2] More information can be found here: http://www.highways.gov.uk/roads/road-projects/a47-corridor-improvement-programme/

The following table summarises water supply in the Broads Authority Executive Area:

Document	Description	What it says about the Broads Executive Area
The Water Stressed Areas Classification (Environment Agency, 2013)[3].	This identifies areas of serious water stress where household demand for water is (or is likely to be) a high proportion of the current effective rainfall available to meet that demand.	The summary table shows that the area of Essex and Suffolk Water and Anglian Water are water stressed.
Essex and Suffolk Water Resource Management plan (2014)[4]	Essex and Suffolk Water and Anglian Water Services have a statutory duty to prepare and maintain a Water Resources Management Plan (WRMP) under the Water Resources Management Plan Regulations 2007. These set out how the companies plan to maintain the balance between supply and demand over the next 25 years.	Some of the Broads are in the Northern and Central Water Resource Zone. Demand in the WRZ is heavily influenced by the large population centres of Lowestoft and Great Yarmouth. Essex and Suffolk Water were contacted to clarify the following. No Water Resource Zones in Essex and Suffolk Water's area are in deficit. Currently, they are not supportive of 110 l/h/d mainly because of the area not being in deficit but also customer experience of using water facilities and the customer could become frustrated and replace the efficient water fittings. They consider 125 l/h/d to be reasonable
Anglian Water Services Water Resource Management Plan (2014)[5]		North Norfolk Coast and Norwich and the Broads Water Resource Zone. North Norfolk Coast: No deficits are forecast in the North Norfolk Coast RZ. No significant climate change or levels of service sensitivities have been identified. One likely sustainability reduction has been included for a maximum quantity of 1.3Ml/d in 2024/25. Norwich and the Broads: Large AMP6 deficits are forecast in the Norwich and the Broads RZ. These result from a sustainability reduction and at the end of the forecast period are equivalent to 51.9Ml/d under dry year annual average conditions and 57.6Ml/d under critical period conditions. Excluding the WFD no-deterioration and worst

[3] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/244333/water-stressed-classification-2013.pdf
[4] https://www.eswater.co.uk/your-home/environment/water-res-man-plan.aspx
[5] http://www.anglianwater.co.uk/environment/our-commitment/our-plans/water-resource-management.aspx

Document	Description	What it says about the Broads Executive Area
		case climate change risks, the plan for maintaining the supply-demand balance combines source relocation with water efficiency, enhanced metering and additional leakage control. In the long-term, additional supplies will also be required.
Anglia District River Basin Management Plan (2009)[6].	This describes the river basin district and the pressure that the water environment faces. These include information on where water resources are contributing to a water body being classified as 'at risk' or 'probably at risk' of failing to achieve good ecological status, due to low flows or reduced water availability.	According to some maps, the status of the Broads area varies generally, depending on type of assessment: • Groundwater quantitative status – poor. • Abstraction and other artificial flow pressures (rivers) – varies from 'not at risk' to 'probably at risk'. • Abstraction and Flow Regulation - Impact on surface water (groundwater) – at risk. • Abstraction and Flow Regulation - Impact on water balance (groundwater) – probably at risk.

Another source of information is existing water cycle studies completed by our districts:

District	Evidence	Policy	Future plans
Broadland	WCS (2007) was produced for Norwich, SN, BDC, Norfolk County Council and the Broads Authority. 2015 version of the GNGB Water Efficiency Guidance Note	The study resulted in JCS policy 3 being produced, which set more demanding standards for water efficiency in new development than the Building Regulations. However the government has recently required that the most demanding standards be dropped (former code level 6 i.e. 80 litres per person per day for development as of 500 dwellings+) on the grounds that this approach is too expensive. The policy is still valid for developments of less than 500 dwellings and for all of its other aspects.	Likely to be considered through the Norfolk Strategic Framework Infrastructure Group.
Norwich			
South Norfolk			
North Norfolk	Not aware of any evidence.	Core Strategy and Development Management DPD policy relates to Code for Sustainable Homes.	
GYBC	The Water Cycle Scoping Study was a stage 1 report and was completed in 2009. This was not taken any further as the issues raised in the Scoping study were not	No policy on reducing water usage to 110 l/h/d. General reference to using water wisely.	
Waveney		Following the changes to National Policy, Waveney DC have produced a position	Likely to commission

[6] https://www.gov.uk/government/publications/anglian-district-river-basin-management-plan

District	Evidence	Policy	Future plans
	significant to development plans at the time. This did include the Broads Authority Executive Area.	statement:: http://www.waveney.gov.uk/site/scripts/download_info.php?fileID=6779	new study in 2016.

Some of our constituent districts considered water usage to be an issue warranting strong water resource policies in their LDFs. However, new studies will be commissioned in the near future. Future work will be monitored as progress is made and as the next version of the Local Plan is produced. The Broads Authority, at this stage, is exploring the potential to reduce water usage in new development beyond Building Regulations.

2. Waste water and treatment

Water quality is a key consideration in the Broads and the Local Plan will look into drainage. With regards to how wastewater is transferred from a property, due to the low lying nature of the area and remoteness of some settlements connection to a public sewer is not always possible in the Broads. The alternative disposal methods employed can have a significant local impact on water quality.

Anglian Water is implementing a series of first time sewerage projects of some villages in the Broads Area. Stokesby for example is one area that has benefitted from this project recently.

As the Sites Specifics Local Plan was nearing completion, it became apparent through discussions with North Norfolk District Council, Anglian Water Services and the Environment Agency that there were capacity issues at the Horning Knackers Wood Water Recycling Centre. This Water Recycling Centre discharges to the River Bure and contributes nutrient loads to the downstream watercourses as well as the Bure Broads and Marshes Site of Special Scientific Interest (SSSI), a component of the Broads Special Area of Conservation (SAC)/ Broadland Special Protection Area (SPA). Both Anglian Water and the Environment Agency agree that the Horning Knackers Wood Water Recycling Centre (WRC) does not currently have capacity to accommodate further foul flows. Anglian Water Services (AWS) have undertaken investigations to identify why the WRC is receiving excessive flows. This work has indicated infiltration from groundwater into the sewer network as the main reason. AWS have developed a scheme to address the infiltration, and by relaying and relining sewers should resolve the issue and provide modest capacity for further foul flows. This scheme was completed in March 2015 and at the time of writing had not worked as anticipated. Further work was ongoing (at the time of writing) to address this issue. The Authority will monitor the situation.

There are also other treatment works, identified in the Norfolk[7] and Suffolk[8] Minerals and Waste planning documents that are of relevance to the Broads. The list of relevant Norfolk ones is below:

SITE NAME	OPERATOR	TYPE
Acle	Anglian Water Services Ltd	Wastewater Consultation Area
Acle	Anglian Water Services Ltd	Wastewater
Belaugh	Anglian Water Services Ltd	Wastewater Consultation Area
Belaugh	Anglian Water Services Ltd	Wastewater
Horning	Anglian Water Services Ltd	Wastewater Consultation Area
Horning	Anglian Water Services Ltd	Wastewater

[7] https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/minerals-and-waste-planning
[8] https://www.suffolk.gov.uk/planning-and-environment/planning-applications/minerals-and-waste-development-planning/

SITE NAME	OPERATOR	TYPE
Stalham	Anglian Water Services Ltd	Wastewater Consultation Area
Stalham	Anglian Water Services Ltd	Wastewater
West Caister	Anglian Water Services Ltd	Wastewater Consultation Area
Whitlingham	Anglian Water Services Ltd	Wastewater Consultation Area

The Authority will address water quality in the Local Plan. The Authority will investigate going further than building regulation in relation to water use. The Authority will keep updated regarding Horning Knackers Wood Water Recycling Centre.

7. Energy

The NPPG says that:

> *'When drawing up a Local Plan local planning authorities should first consider what the local potential is for renewable and low carbon energy generation.'*

See separate Renewable Energy Topic Paper.

8. Telecommunications

i) Mobile coverage

In 2015, 93% of the UK population owned/use a mobile phone, with two-thirds of the population having a smartphone. Whilst there remain many mobile "not-spots" in Norfolk and Suffolk (some rural areas and parts of the coast in particular), the use of smartphones to access the internet has increased hugely; in 2015, smartphones overtook the use of laptops as the number one device to access the internet in the UK, with smartphone users now spending an average of two hours per day online, twice as long as on PCs and laptops[9].

ii) Broadband

Not all urban areas are well-connected; as an example, new residential development rarely has broadband connectivity installed up-front. This is because these are commercial decisions, and unless BT and Virgin Media are confident that a profit can be made, they will only install such a network later on, once a critical mass of homes exists. Rural areas are often less well-served by broadband, and the low speed of connectivity can be an issue in both urban and rural areas.

Better Broadband for Norfolk[10] has extended the fibre broadband network to homes and businesses across the county where it wasn't economically viable for commercial companies to provide access. Funded through Norfolk County Council, BT and BDUK (Broadband delivery UK), the project is expected to have a huge positive impact on the economic and social development of Norfolk.

In the first phase of the project NCC, the Department of Culture, Media and Sport and BT committed £41m to make sure that by the end of 2015 more than 80% of Norfolk's premises can access superfast broadband

[9] http://media.ofcom.org.uk/news/2015/cmr-uk-2015/
[10] http://www.betterbroadbandnorfolk.co.uk/

(24 Megabits per second and above). This almost doubled the number who could do so before the project launched in 2012, which stood at 43%.

A second phase of the project has committed more than £12m – from central government, the New Anglia Local Enterprise Partnership and Norfolk County Council, with further investment to come- to help reach the national target of making high-speed broadband available to at least 95% of UK homes and businesses by March 2018.

In Suffolk[11], there are commercial broadband upgrades (e.g. BT's Infinity Broadband, the Virgin Media presence). However, these services are generally constrained to the urban areas, where telephone lines are short and densely packed together, providing easy areas to upgrade commercially. This unfortunately means that around a third of Suffolk does not represent a sustainable commercial business case for upgrades, hence the Better Broadband for Suffolk Programme. Therefore, the Better Broadband for Suffolk Programme, run by Suffolk County Council, secured around £24m of public money (SCC and Central Government), which was been used to leverage further private sector investment from BT through a public procurement process.

Not all properties in a rural county – particularly isolated farmhouses and small hamlets - will be feasible financially to connect up to a broadband network, although there are some examples of the residents of small villages working together to pool funding to secure and deliver fibre broadband.

Existing areas where the existing broadband connection speed is less than 2Mbps, and which are not scheduled to receive improvements in the immediate future, can apply for a subsidy towards the installation and setup of a satellite broadband solution. The satellite broadband solution is a national scheme, set up in partnership with Broadband Delivery UK. Some Norfolk district councils are going further. For example, South Norfolk Council's Cabinet agreed in February 2016 to commit more than £500,000 to the Superfast Extension Programme of BBfN to help an additional 3,000 premises in the district to be covered by high speed broadband.

iii) 5g

The capacity of 4G services is rapidly being taken up by the increased use of mobile devices for online activities, as well as the continued expansion of the "internet of things" – houses and businesses with individual devices connecting online (fridges, central heating systems, alarm systems etc). This capacity crunch has been reflected in the increase in cost of "all you can eat" mobile data contracts.

The next generation of mobile networks will be 5G[12]. Whilst there is no agreement as to the precise standards of 5G, it will probably encompass the following:

- Be much faster than 4G, perhaps 60-100 times, to enable download of a HD film in under 10 seconds
- Latency (speed to playback when downloading) will be about 1 millisecond – so, in effect, instantaneous

[11] http://www.betterbroadbandsuffolk.com/
[12] https://5g.co.uk/

- 5G will provide sufficient bandwidth to enable the multitude of internet-connected devices to communicate effectively
- Near-enough perception of 100% coverage and availability
- The user experience will therefore be that of limitless bandwidth and continuous availability

5G will need to use higher frequency radio bands, but these higher frequency signals travel less well than 4G, and can be disturbed by buildings, trees, weather etc. More base stations, booster stations and new antenna technologies will all be required.

EE is beginning 5G trials in the UK in 2016, with the first pilot networks in the world expected in 2018. The rollout of 5G commercially is expected to commence in 2020, and take several years (as for 4G).

There is a policy that relates to telecommunications infrastructure emphasising the importance of addressing impacts on landscape in the Broads.

9. Utilities

In relation to gas and electricity, no providers who were consulted raised any concerns with regards to the Objectively Assessed Housing Need for the Broads.

The residual 40 dwellings in the Great Yarmouth area, if allocated in the Local Plan, will likely be addressed through numerous sites, rather than all 40 dwellings in one place. This could limit any impact the 40 dwellings have on utility infrastructure by spreading the gas and electricity demand around the Borough.

Furthermore, Great Yarmouth Borough Council's Infrastructure Study[13] says:

i) Gas

National Grid owns and operates the national transmission system throughout Great Britain which connects to eight regional networks. In the borough, National Grid also own and operate the local gas distribution network and are therefore also responsible for distributing gas to the borough. National Grid has a duty to develop and maintain an efficient, co-ordinated and economical transmission system for the conveyance of gas and respond to requests for new gas supplies in certain circumstances. Bacton Gas terminal is a large gas terminal located on the north Norfolk coast with an underground pipeline connecting the terminal with the gas power station in South Denes in Great Yarmouth. There are likely to be no future supply issues with gas provision. Improvements to the gas distribution network are generally carried out as a result of significant growth in overall regional demand rather than site specific requirements.

ii) Electricity

The electricity distributor for the borough of Great Yarmouth is UK Power Networks, which is known as a Distribution Network Operator (DNO), covering 29,000sq km of London, the south east and the east of England. Their role is to take electricity at high voltages from the National Grid and transform it down to voltages suitable for commercial and domestic use. UK Power Networks are responsible for ensuring that the infrastructure that brings power to homes, businesses, hospitals, schools and other public services continues to deliver reliable, safe and sustainable electricity at all times.

[13] http://www.great-yarmouth.gov.uk/CHttpHandler.ashx?id=1235&p=0

UK Power Networks have commented on future electricity distribution in the borough in response to consultations on the (then) emerging Great Yarmouth Core Strategy. Their comments note that the 33kV and 132kV electricity distribution networks supplying the borough currently have reasonable headroom and as such, the proposed development in the borough should not trigger any upstream reinforcement issues. Housing developments of the size proposed in Great Yarmouth's Core Strategy (which effectively covers the need of the Broads Authority) are usually supplied by local distribution substations, fed at 11kV and supplying 230v to domestic housing. It is likely that dedicated local substations will be required to supply some developments, the costs of which vary depending on the amount of 11kV cable required to connect to the existing 11kV network. Costs for the substation work are typically in the region of £40-50k, with cable requirements being dependent upon individual cases. A typical substation will supply in the region of 250 domestic dwellings, dependent upon housing type and distance from the substation. The provision of existing 11kV substations within the locations being considered would suggest that due to the presence of existing 11kV network, extension of these networks would not be a major issue. This would be subject to a detailed network study to determine any spare capacity on existing 11kV circuits and the extent of any network extension requirements

There are likely to be no future gas supply issues in the Borough of Great Yarmouth. Regarding electricity, the 33kV and 132kV electricity distribution networks supplying the borough currently have reasonable headroom. New local distribution substations, fed at 11kV and supplying 230v to domestic housing could be required for the larger developments proposed in the Great Yarmouth Core Strategy.

10. Waste

The National Planning Policy for Waste states:

'Positive planning plays a pivotal role in delivering this country's waste ambitions'

The NPPG states:

'While such authorities may not have the planning functions in respect of the preparation of Local Plans covering waste, or dealing directly with waste planning applications, they must have regard to national planning policy for waste and are expected to help deliver the Waste Hierarchy'

The Authority's constituent districts are responsible for collecting waste from domestic properties while Norfolk and Suffolk County Council are the Waste Disposal Authorities and are therefore responsible for disposing of refuse.

There were no comments received as part of the Issues and Options consultation relating to the collection and disposal of waste.

i) Norfolk County Council

The Norfolk Core Strategy and Minerals and Waste Development Management Policies DPD 2010-2026 (the 'Core Strategy') was adopted in September 2011. The Norfolk Minerals Site Specific Allocations DPD and the Norfolk Waste Site Specific Allocations DPD were both adopted in October 2013. The Core Strategy will be reviewed five years after adoption; by the end of 2016. The Minerals Site Specific Allocations DPD and the Waste Site Specific Allocations DPD will also be reviewed five years after adoption; by the end of 2018. The following table identifies the safeguarded mineral sites and waste management sites (including waste water treatment works) where either the site itself or the consultation area for the site falls within the Broads Authority Executive Area.

SITE NAME	OPERATOR	TYPE
Aldeby	Waste Recycling Group	Waste management site Consultation Area
Caister	May Gurney	Waste management site Consultation Area
Great Yarmouth A	M T Skips	Waste management site Consultation Area
Great Yarmouth-MT Skips	M T Skips	Waste management site
West Caister	Norfolk County Council	Waste management site Consultation Area

ii) Suffolk County Council

The Waste Core Strategy including Development Management Policies was adopted in March 2011. The County Council will be likely to review the above document not earlier than the end of 2017. Waste Core Strategy does not propose any minerals or waste sites in the Broads area. In addition, there are no existing waste or minerals management facilities in the Broads.

iii) The Local Plan and waste

Discussions were had with Norfolk County Council relating to how the Broads Local Plan can assist in waste issues. It was decided that rolling forward the current references to waste in Development Management policies DP4, DP16 and DP25 will suffice. It was generally agreed that the waste elements of these policies should be rolled forward. The issue of construction waste could be addressed in a sustainable development policy.

The Suffolk Waste Partnership (SWP) is currently in the early process of developing a waste Supplementary Planning Document (or similar document should another approach be preferable) with the support of the Suffolk Joint Planning Officer Group. The aims of the document are provisionally as follows:

- To create a unified pan-Suffolk set of waste service requirements for incorporation into any future planning process.
- To embed the waste hierarchy into the planning process.
- To allow the SWP a mechanism to discuss alterations from the standard service model with housing developers.

In Norfolk, rolling forward the current policy approach on waste will suffice. This would benefit Suffolk as well who are producing guidance relating to waste which the Authority could adopt.

11. Health and social care

The NPPG says:

> *Local planning authorities should ensure that health and wellbeing, and **health infrastructure** are considered in local and neighbourhood plans and in planning decision making*

NHS England is not currently aware of a specific need for additional health facilities within the Broads Executive Area. There is currently sufficient capacity to cope with the existing populations in the area. Additionally there is not at present, due to capacity reasons, a need to expand the health facilities outside the Broads Executive Area into the Broads Executive Area.

Should housing or population growth increase from the current levels, NHS England in conjunction with the relevant Clinical Commissioning Groups (CCGs) would need to review the growth or projected growth to ensure that suitable facilities are available to meet the needs of patients within the areas. Where significant growth occurs, this could result in the requirement of future expansion of existing premises or the procurement of new facilities. Discussions

would take place with existing practices. A business case would need to be reviewed based upon the information and proposals at the time.

Where significant housing growth is planned the NHS would be looking to secure appropriate Section 106 and or CIL contributions to assist in mitigating the cost of providing such additional health infrastructure.

The Norfolk HUDU model provides estimates, based on different housing growth scenarios, for the additional health care needs required in Norfolk and Waveney to 2036 to take account of projected growth. The figures are high level and contribute to understanding the potential strategic needs for CCG areas, and are not intended to set requirements for specific developments.

At the time of writing, this was available in draft format only and final work was ongoing. The Broads Authority will work with other parties to fully understand the needs of the proposed housing numbers for Norfolk and Waveney.

At this stage, it is not proposed to have a specific policy on health facilities.

12. Education

The NPPF says:

72. 'The Government attaches great importance to ensuring that a sufficient choice of school places is available to meet the needs of existing and new communities. Local planning authorities should take a proactive, positive and collaborative approach to meeting this requirement, and to development that will widen choice in education. They should:

- ***give great weight to the need to create, expand or alter schools**; and*
- *work with schools promoters to identify and resolve key planning issues before applications are submitted.'*

Discussions with Suffolk and Norfolk County Councils indicate that there is not likely to be a requirement for any schools to expand into the Broads Authority Executive Area in this plan period. We will liaise with the Education Authorities in future versions of the Local Plan regarding any residential allocations proposed in response to meeting the Objectively Assessed Housing need. Future development proposals will be assessed as they emerge and seek S106 developer contributions if justified and satisfy the CIL 122 Regulations.

At this stage, it is not proposed to have a specific policy on education establishments.

13. Flood Risk and Defences

i) <u>Flood Risk</u>

Approximately 95% of the Broads Authority area is at some risk of flooding. This includes more than 2000 properties and almost 30,000 hectares. The Broads Authority boundary is tightly drawn around the edge of the floodplain.

The flood risk in the Broads is mainly from both fluvial and tidal sources and the whole character and development in the Broads over many hundreds of years has been closely associated with the water environment and flood risk. Much of the Broads area is defended by flood defence embankments, which are maintained by the Environment Agency to reduce flooding. The flood defences, where they exist, only reduce the risk of flooding and will never eliminate it; this has been the historic case within the Broads.

Working, living and visiting the Broads have been, and will continue to be, activities that have co-existed with the risk of flooding. However, any new development (which includes change of use, etc) must be in line with government policy and minimise flood risk. In the Broads area, this means identifying the risks from flooding and ensuring that they are at as low a level as possible compatible with the wetland and water-based environment.

The Broads is not subject to open sea conditions (relating to tidal range and wave action). Therefore, although parts of the Broads are tidally influenced, for flood risk assessment purposes the river flooding probabilities are used to define the Flood Zones.

The SFRA shows that coastal flooding and flooding associated with defence failure are likely to produce the most significant consequences and greatest hazard because of the speed of onset of the flood, the high water velocities and the deep water. Settlements towards the east of the Broads which are at risk of flooding from failure of the coastal defences are indicated on the Environment Agency maps.

The flood probability mapping carried out within the SFRA does not represent the degree of hazard likely to be experienced in the Broads Authority area, especially in the more upstream catchment areas and those areas not at risk of breaching of coastal defences, because it does not quantify depth or water velocity.

Hazard is very site specific and could vary greatly over a relatively small area due to the presence of drains, dykes, quay-headings, flood banks, etc., all of which could be masked by turbid floodwaters. The effect of climate change on hazard was also not assessed in the SFRA.

The flood probability mapping indicates in some areas that the functional floodplain extends to the boundary of the Broads Authority area. Intuition, or engineering judgement, indicates that this is likely to be the case in reality, with the functional floodplain as defined as the 1 in 20 year event.

It is suggested in the SFRA that if hazard mapping were to be carried out in order to quantify depth and water velocity at the various flood events (hazard, or “danger to people”, is a function of depth and velocity) it would quite likely indicate that both flood depth and velocity are not great. As a result of this, hazard is generally likely to be low. However, site specific factors significantly contribute to risk and a site-specific Flood Risk Assessment will need to quantify this.

The SFRA suggests flooding from the tidally influenced Broads’ river systems is likely to be less hazardous because of the slower onset. This may be an oversimplification due to the interaction of site specific factors and the condition of winds and tides. The above notwithstanding, hazard and risk does tend to be predictable on the Broads and this has implications for how these are managed.

Fluvial flooding associated with upstream areas of individual catchments within the Broads is not normally “flashy” and the hazard from these floods, excepting unusual meteorological conditions, is least onerous. Consideration of the flood risk at a particular location should also take account of climate change as highlighted in section x below.

The typical Broads river has a permeable catchment, is groundwater dominated, and is a slow responding watercourse with a slow increase and decrease of flow in response to rainfall. Although tidal surges can develop rapidly within 6-12 hours as a result of the movements of weather systems in the North Sea, the Environment Agency Flood Warning System covers the whole of the Broads area which could provide some measure of early warning, however, uptake of the service is voluntary and is not enforceable within the context of planning.

It is also the case that existing flood defences in the Broads area offer a very low standard of defence (typically up to a 1 in 7 year standard) so that overtopping events, or events in which defences are outflanked or breached, are likely to produce a slow speed of approach of the flood, slow water velocities, shallow depth and low hazard. The majority of people living and working within the Broads are historically familiar with the water environment and are unlikely to be surprised or alarmed by the prospect of floods or rising water levels. Measures will need to be in place to ensure effective communication with visitors - an issue which is already addressed on many sites locally.

Any development encroaching within any of the plotted Flood Zones may increase flood risk to adjacent areas, and the effect on flood risk of a number of small encroachments is cumulative. If the requirements of the NPPF and NPPG are met in full, then additional development should not increase flood risk elsewhere.

ii) Broadland Flood Alleviation Project[14]

The Broadland Flood Alleviation Project (BFAP) is a long-term project to provide a range of flood defence improvements, maintenance and emergency response services within the tidal areas of the Rivers Yare, Bure, Waveney and their tributaries.

Appointed by the Environment Agency Broadland Environmental Services Ltd deliver these services and, in partnership with the Agency, it is now implementing the 20-year programme of works. This contract was awarded in May 2001 as a Public Private Partnership Programme.

The main aim of project work has been to strengthen existing flood defences and restore them to a height that existed in 1995 (a level defined by the Environment Agency) and make additional allowances for sea level rise and future settlement of the floodbanks.

- The improvement works are being implemented through a phased programme through:
- Strengthening the existing floodbanks, restoring them to agreed levels where excessive settlement has occurred
- Replacing existing erosion protection that is in a poor condition using more environmentally acceptable methods wherever possible
- Providing new protection where erosion is currently threatening the integrity of the flood defences
- Carrying out works at undefended communities

The NPPF, current and new Local Plan policies and the current and future Flood Risk SPD enable flooding and flood risk to be addressed.

14. Local Coastal Changes

The Broads Authority has a small stretch of coast in the Executive Area (Winterton/Horsey area). The Kelling to Lowestoft Ness Shoreline Management Plan[15] unit 6.13 covers Eccles to Winterton Beach Road. The general approach to coastal erosion along this stretch is to hold the line. This is dependent on the option continuing to be technically and economically deliverable.

'Due to the considerable assets at risk and the uncertainty of how the coastline could evolve, the policy option from the present day is to continue to hold the line of the existing defence. This policy option is likely to involve maintenance of existing seawalls and reef structures, replacing groynes as necessary and continuing to re-nourish beaches with dredged sand. This policy option will provide an appropriate standard of protection to all assets behind

[14] http://www.bfap.org/
[15] http://www.great-yarmouth.gov.uk/CHttpHandler.ashx?id=1239&p=0

the present defence line, and, with the recharge, a beach will be maintained as well as a supply of sediment to downdrift areas.'

There is a policy relating to the coast which generally supports the Shoreline Management Plan's approach.

15. Places of Worship, Local Services (shops, pubs, post offices, etc) and Community Facilities

The Local Plan will have a general policy for determining changes to and new community, visitor and recreation facilities.

Pubs will be allocated in the Local Plan (as they are currently adopted in the Sites Specifics local Plan 2014).

Open space, allotment, play and sport field need is assessed by the Broads' constituent districts. They assess the entire district, including that which is the Broads. The need is translated into standards for open space and a policy in the Local Plan will defer to these policies.

Regarding the shopping area in Oulton Broad, this has been assessed as part of Waveney District Council's retail work[16]. It is intended that a joint approach with Waveney, for this area (which is part in the Broads and part in Waveney District) will be included in the Local Plan.

Regarding shopping areas at Potter Heigham Bridge and Horning, discussions are ongoing (at the time of writing) with the intention to have a joint approach with North Norfolk District Council regarding these retail areas.

There are some policies on specific local services and facilities. Other policies in the Local Plan will help determine applications for other uses and facilities.

16. Police

Whilst the Objectively Assessed Housing Need for the Broads Executive Area is 320 dwellings, in reality, most of that has been delivered, permitted or allocated. There is a residual need for around 40 dwellings in the Great Yarmouth part of the Broads.

Norfolk and Suffolk Police were contacted, through the Architectural Liaison Officers to confirm if the 40 residual dwellings which could be planned for in the Local Plan raised any policing concerns.

Norfolk Constabulary stated in April 2016 *'I suggest the potential impact on operational policing requirements for an additional 50 dwellings built within the GT Yarmouth area would be insignificant'.*

There is no requirement for the Local Plan to address operational policing requirements.

17. Summary and conclusion

[16] http://www.waveney.gov.uk/planning/local-plans/waveney-district-local-plan/new-waveney-local-plan/supporting-documents/retail-and-leisure-needs-assessment/

i) The Authority will address water quality in the Local Plan. The Authority will investigate going further than building regulation in relation to water use. The Authority will keep updated regarding Horning Knackers Wood Water Recycling Centre.
ii) There is a policy that relates to telecommunications infrastructure emphasising the importance of addressing impacts on landscape in the Broads.
iii) There are likely to be no future gas supply issues in the Borough of Great Yarmouth. Regarding electricity, the 33kV and 132kV electricity distribution networks supplying the borough currently have reasonable headroom. New local distribution substations, fed at 11kV and supplying 230v to domestic housing could be required for the larger developments proposed in the Great Yarmouth Core Strategy.
iv) In Norfolk, rolling forward the current policy approach on waste will suffice. This would benefit Suffolk as well who are producing guidance relating to waste which the Authority could adopt.
v) At this stage, it is not proposed to have a specific policy on health facilities.
vi) At this stage, it is not proposed to have a specific policy on education establishments.
vii) The NPPF, current and new Local Plan policies and the current and future Flood Risk SPD enable flooding and flood risk to be addressed.
viii) There is a policy relating to the coast which generally supports the Shoreline Management Plan's approach.
ix) There are some policies on specific local services and facilities. Other policies in the Local Plan will help determine applications for other uses and facilities.
x) There is no requirement for the Local Plan to address operational policing requirements.