Appendix C

Topic Papers

Note: The Topic Papers listed below will support the draft Area Action Plan public consultation 2020 (Regulation 18) consultation and may be updated as AAP goes through its process to reflect any changes.

Topic Papers C1 to C11 below are appended to the committee report as App C:

C1   Anti-poverty and Inequality Topic Paper

C2   Climate Change, Energy and Sustainable Design & Construction Topic Paper

C3   Education Topic Paper

C4   Housing Topic Paper

C5   Open Space Topic Paper

C6   Retail and Commercial Leisure Topic Paper

C7   Skills, Training and Local Employment Opportunities Topic Paper

C8   Smart Infrastructure Topic Paper: Digital Infrastructure

C9   Smart Infrastructure Topic Paper: Environmental Monitoring

C10   Smart Infrastructure Topic Paper: Future Mobility

C11   Waste Management and Collection Topic Paper

The following Topic Papers are not appended to the Committee Report, but are noted in the committee report, and will be finalised in time to support the Reg 18 consultation:

- Community Safety Topic Paper
- Environmental Health Topic Paper
- Health Facilities and Wellbeing Topic Paper
- Internalisation Topic Paper
- Transport Topic Paper

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Appendix C1: Anti-Poverty and Inequality Topic Paper

Introduction

Greater Cambridge is an area of strong economic growth and with high house prices, but along with many successful cities, there are inequalities within the community. The aim of this paper is to set out Cambridge City Council's (CCC) and South Cambridgeshire District Council's (SCDC) shared commitment to tackling poverty and inequality in the context of the North East Cambridge development. This includes considering how the development relates to surrounding neighbourhoods, and spreading the benefits of the development more widely. The evidence has been prepared in liaison with the Council's Equality and Anti Poverty Officer.

Context

National Planning Policy Framework (2019)

The National Planning Policy Framework[1] (NPPF) discusses several issues relating to poverty. Paragraph 61 states: 'The size, type and tenure of housing needed for different groups in the community should be assessed and reflected in planning policies (including, but not limited to, those who require affordable housing, families with children, older people, students, people with disabilities, service families, travellers, people who rent their homes and people wishing to commission or build their own homes)'.

Further, Paragraph 62 states: 'Where a need for affordable housing is identified, planning policies should specify the type of affordable housing required, and expect it to be met on-site unless: a) off-site provision or an appropriate financial contribution in lieu can be robustly justified; and b) the agreed approach contributes to the objective of creating mixed and balanced communities.

Access to jobs is also highlighted within the NPPF with paragraph 72 highlighting that large scale developments should 'ensure that their size and location will support a sustainable community, with sufficient access to services and employment opportunities within the development itself (without expecting an unrealistic level of self-containment)'. Other issues surrounding anti-poverty and inequality in the NPPF include achieving healthy and safe communities. Paragraph 92 promotes 'social interaction, including opportunities for meetings between people who might not otherwise come into contact with each other' alongside ensuring places are 'safe and accessible, so that crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion'.

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[1]National Planning Policy Framework: 2019

The provision of open space and recreation is highlighted in Paragraph 96, complimented by Paragraph 102 where 'high quality places and access to employment, shopping, leisure, education and other activities' is promoted.

Cambridge City Council Corporate Plan (2019-2022)

CCC's vision is "One Cambridge - Fair for All', in which economic dynamism and prosperity are combined with social justice and equality. Part of the description of what this means is of "A city which believes that the clearest measure of progress is the dignity and well-being of its least well-off residents, which prioritises tackling poverty and social exclusion, recognising that greater social and economic equality are the most important pre-conditions for the city's success."

To accompany the vision, the Cambridge City Corporate Plan[2] sets out five strategic-level objectives. Objective one and two reflect the issues highlighted in this topic paper. Objective one: 'Helping people in Cambridge who have the greatest need' aims to implement the current Anti-Poverty Strategy, deliver the Housing Strategy and support vulnerable members of the community. Objective two aims to achieve sustainable development through: 'Planning for growth and ensuring our new communities are successful'.

Cambridge City Anti-Poverty Strategy (2017-2020)

The Executive Councillor for Finance and Resources approved the first Cambridge City Council Anti-Poverty Strategy[3] 2017-2020 in 2015. The report presents a revised approach to addressing poverty in Cambridge. It aims to improve the standard of living and daily lives of residents in Cambridge experiencing poverty through several objectives to address poverty alongside 57 actions to be carried out by City Council services. The key areas of focus include:

- Supporting residents to access benefits and responding to the impacts of welfare reform.
- Supporting residents in fuel and water poverty to reduce their energy and water bills.
- Working with partners to support low income residents into higher paid employment and raise skills, attainment and life chances.
- Constructing new Council homes and working with social landlords and developers to deliver more affordable homes.
- Providing housing, employment and skills support for homeless people in Cambridge.

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[2] Cambridge Corporate Plan: 2019-2020

[3] Cambridge City Council Anti-Poverty Strategy: 2017-2020

- Delivering a range of projects to support groups of people that are more likely to experience poverty, including women, children and young people, older people, people with disabilities, and BAME people.

South Cambridgeshire District Council Business Plan (2020-25)[4]

South Cambridgeshire District Council's Business Plan includes a commitment of "building homes that are truly affordable to live in". It states that SCDC will "Build vibrant communities in locations where people have good access to facilities and transport links, so they can genuinely afford to lead a happy and healthy life." The plan includes a list of measures that will be undertaken to help achieve this.

Cambridge Local Plan (2018)

Within Cambridge City Council's Local Plan[5], 15 strategic objectives are set out. The objectives aim to create and maintain inclusive communities alongside promoting social cohesion through provision of sports, recreation, community and leisure facilities. Other objectives discuss the promotion of affordable housing, accessible innovative economic areas whilst ensuring centres and shopping facilities are within reach for people living, working and studying in the city.

Section Three of the Local Plan discusses City Centre, Areas of Major Change, Opportunity Areas and Site Specific Proposals. Policy 14 highlights the general principles of new development, stating that new sites should 'create active and vibrant places that encourage social interaction and meeting, and foster a sense of community'.

Section Five: Supporting the Cambridge Economy addresses the need to connect new developments to digital infrastructure in Policy 42. It states that integrating high quality broadband into developments will 'help communication for business and residents' and 'help address isolation'.

Section Six: Maintaining a Balanced Supply of Housing raises concern for the need to meet housing needs through several policies. Policy 45: Affordable housing and dwelling mix supports the delivery of 40% affordable housing on sites of more than 15 residential units, whilst delivering a mix of housing types, sizes and tenures.

Policy 56: Creating successful places supports development that is designed to be accessible, inclusive and safe and fosters a sense of community. Policies including Policy 73: Community, sports and leisure facilities, Policy 74: Educational facilities and Policy 75: Healthcare facilities, also demonstrate the Council's support for amenity provision that are equally accessible to all.

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[4] https://www.scambs.gov.uk/media/15107/business-plan-2020-to-2025.pdf
[5] Cambridge Local Plan: 2018

South Cambridgeshire Local Plan (2018)

The SCDC's Local Plan[6] sets out the vision in Policy S/1 alongside the objectives of the plan in Policy S/2. The six objectives highlight the need to deliver land for housing with a range of types, sizes, tenures and costs. The objectives also present the need to support economic growth and education while providing a range of services and facilities for residents.

Policy S/5: Provision of New Jobs and Homes identifies the need for provision of housing including affordable housing in order to respond to high level needs in South Cambridgeshire.

Policy H/9: Housing Mix and Policy H/10: Affordable Housing further address the need to provide housing to 'meet the needs of different groups in the community including families with children, older people, those seeking starter homes, people wishing to build their own homes, people seeking private rented sector housing and people with disabilities'. Policy H/10 states that all developments of 11 dwellings or more should achieve 40% affordable housing on site.

Policy SC/4: Meeting Community Needs highlights the need for a range of services and facilities to be provided for new communities including Primary and secondary schools, meeting places, health facilities, libraries, sports facilities, local shops and cafes and provision for faith groups.

Measuring poverty in the UK and Cambridge

According to Cambridge City Council's Anti-Poverty Strategy[7] identifying measures of poverty within Cambridge remains a significant challenge as there is no official measure of poverty for the UK. The strategy finds that the most common measure in the UK is relative income poverty (households with less than 60% contemporary median income after taxes and benefit). Other measures identified in the Joseph Rowntree Foundation UK Poverty report[8] (2018) identify other possible causes of poverty as insecurity in job roles, low-paid jobs, low skills or education, ineffective benefits system, discrimination, weak family relationships, childhood poverty and abuse or trauma. As a result, effects of this poverty include housing problems, homelessness, crime, health problems, drug or alcohol problems, teenage parenthood, relationship and family problems and lower educational achievements. Although the Council's Anti-Poverty Strategy recognises that some of the indicators including pay, benefits, qualifications and fuel poverty have improved over the period of the first two Anti-Poverty strategies, a number of indicators of poverty remain prevalent in Cambridge.

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[6] South Cambridgeshire District Council Local Plan: 2018

[7] Cambridge City Council Anti-Poverty Strategy: 2017-2020

[8] https://www.jrf.org.uk/report/uk-poverty-2018

Particularly, unemployment, health and housing indicators have declined since 2014. Unemployment was shown to have increased from 4.2% in 2014 to 4.8% in 2019, the gap in life expectancy also increased. For women between the most and least deprived areas of the city the gap increased from 9.6 year in 2014 to 10.1 years in 2018. However, the gap between men reduced slightly from 10.0 years to 9.9 from 2014 to 2018. The affordability of housing continues to be a key issue for those on low incomes with The Centre for Cities[9] presenting Cambridge as the third most unaffordable housing in the UK in 2018 (based on the ratio of average house prices to average earnings). According to data presented in the Anti-Poverty Strategy, the lower quartile house prices were 16.3 times lower quartile earning in March 2018 (up from 14.6 times lower quartile earnings in March 2014). The lower quartile monthly private rents increased from £563 in 2014 to £950 in 2018.

Who is the new community for?

The North East Cambridge Area Action Plan aims to provide a policy framework guiding mixed-use development delivering significant housing, employment and local facilities to support the creation of a new community. The development will provide land uses expected to enable social and physical infrastructure for new residents as well as existing local residents in adjoining areas. This will allow for a lively, pedestrian and cycle friendly district comprising leisure facilities, shops and green spaces. The AAP aims to deliver thousands of new homes and jobs designed to meet existing and future needs of people living and working in the area.

The North East Cambridge will provide office and research space and offer potential for workshops and light industrial units to provide for a wide range of employment. The re-provision, intensification and diversification of the range of existing business uses will provide opportunity for a wider variety of business and industrial use in the area. The area to the east of Milton Road will predominantly be a housing-led mix of uses, including space for business uses, and for the relocation of existing industrial uses where they can be suitably located. A range of housing typologies will be provided to allow for a mix of residents such as local workers, first time buyers, renters and homeowners with genuinely affordable housing.

In existing new communities in Cambridgeshire, it has been found that there are many people of different ethnicities (for example, in the Southern Fringe developments 48 languages are spoken). The fact that there are people from a large number of different ethnicities means that there may be greater need for support to welcome them to new communities and support them in understanding how access to public services works (for instance, in other areas it has been assumed that people from other countries know about school holiday dates that has caused issues for households that work). To help welcome people of different ethnicities in one of the new developments on the Southern Fringe hosting an international café was

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[9] https://www.centreforcities.org/reader/cities-outlook-2018/

found to be effective. This worked as a 'one-stop shop' for people to meet one another to develop social networks and ask any questions they have about living in the new community.

Spatial Inequalities in Cambridge City and their relation to North East Cambridge

The collection of district-level data on poverty in existing new communities in Cambridgeshire remains limited, however the current data from the latest 2019 Index of Multiple Deprivation[10] (IMD) shows that the ten most deprived Lower Super Output Areas (LSOAs) in Cambridge lie in the North and North East of the city, in Abbey, Arbury, East and West Chesterton and Kings Hedges wards. The North East Cambridge development is in close proximity to East Chesterton and King's Hedges. Two of Abbey's LSOAs were in the most deprived 20% of LSOAs in the country in 2019, according to the IMD. In 2015, there were also 2 LSOAs in the most deprived 20% of LSOAs nationally, in King's Hedges ward.

The proposed boundary for the North East Cambridge development adjoins the Fen Road community on the eastern side of the railway line that includes 209 Traveller pitches [11].

Gypsies and Travellers have the lowest rate of economic activity of any ethnic group, at 47 per cent, compared with 63 per cent for England and Wales overall. The Office for National Statistics states that the most common reasons for Gypsy or Irish Travellers being economically inactive were looking after the home or family (27%) and due to long term sickness or disability (26% - the highest proportion across all ethnic groups). Question 83 of the Issues and Options consultation allowed feedback on potential positive and negative equalities issues related to the development of the area. Some representations highlighted that a new road access to the north end of Fen Road would make a valuable positive impact on that community with regards access to the emergency services, travel and employment opportunities, currently limited by the Fen Road level-crossing.

The Cambridge City Council Equality and Anti Poverty Officer advised that people from low-income areas of the city, including Gypsy, Roma and Traveller people, have felt excluded from the city centre and can often stay within the boundaries of their own wards or neighbourhoods. There is an opportunity to seek input from communities in King's Hedges and East Chesterton especially, on the development of North East Cambridge to help prevent social and economic exclusion of these communities and thus contribute towards achieving the vision for the new

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[10] Ministry of Housing, Communities and Local Government: English Indices of Deprivation 2015
[11] Source: Cambridgeshire, King's Lynn & West Norfolk, Peterborough and West Suffolk Gypsy and Traveller Accommodation Assessment 2016

development. Actively engaging the Gypsy and Traveller community on Fen Road with the support from individual public sector workers who have positive relations with the community will likely result in positive impacts for community cohesion.

Moreover, some accommodation is likely to be built close to the existing Fen Road developments. This needs to be considered throughout the process of developing the AAP to mitigate impacts on the amenity of surrounding existing communities.

Affordable Housing Needs

Data from Savills Greater Cambridge Report[12]2017 highlights the lack of affordable new housing for households on income below £45,000. It finds that the lower quartile house prices are 13 x the lower quartile income compared to the national average of 7. The report states that there is an increase in PRS and renting rather than buying with 28% of households in Cambridge in PRS. As a result of the decreasing affordability of housing and a lack of appropriate new homes for lower income households, more professional couples and families are moving into the PRS.

The 2018 Local Plans plan for 33,500 new homes. Currently Cambridge City Affordable Housing Programme[13] aims to deliver a minimum of 500 new homes for council rent by March 2022. This is in recognition of the growing 'affordability gap' where even middle-income households are being forced out of the market with limited housing options for low-cost home ownership or the private rented sector. Of the 8,000 new homes in North East Cambridge, the AAP identifies that 40% will be affordable housing, split between, including social housing and other affordable housing options. The AAP will provide mix of different sizes for different sized households.

A further issue in the city is the lack of temporary accommodation for people who have been made homeless who often must reside in Peterborough before they are assigned social housing. Cambridge City Council is aiming to focus on moving from short-term hostel accommodation to supporting homeless people and rough sleepers in provision of one-to-one support and re-enablement services including skills and employment through Housing First. This uses independent, stable housing as a platform to enable individuals with multiple and complex needs to begin recovery and move away from homelessness.

Fuel Poverty

A household is considered to be fuel poor if they have fuel costs that are above average (the national median level) and were they to spend that amount, they would be left with a residual income below the official poverty line. The latest data for the

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[12]Savills Greater Cambridge Partnership: Affordability Analysis Report 2017
[13]Cambridge City Council: Affordable Housing Programme

city of Cambridge is that 11.1% of the population or just above 5,500 households are in fuel poverty, above the national average of 10.3% (Annual Fuel Poverty Statistics in England, 2020 (2018 data) published by BEIS).

The three drivers of fuel poverty are energy efficiency, energy prices and incomes. Two of these issues are covered some detail in other topic papers (with a desire to encourage a good range of job opportunities in the local area and the requirement to build new homes to high levels of energy efficiency). But there are points to highlight around both energy efficiency and energy prices and their interrelationship.

In the drive to embed resource efficiencies which support the transition to zero carbon living - combining low-tech green solutions with high-tech smart city technology - it is critical that any interfaces must be simple and user-friendly to ensure easy access and operation for all residents. Across the UK, the very limited number of households connected to heat networks in particular, means very few people have experience of these space/water heating technologies, their operation or the types of billing employed. This does lead to inequitable disparities in energy costs. The following points should be carefully considered for NEC:

- A recognition that affordable housing must be affordable from both the aspect of basic housing costs (rent or mortgage and service charges) and essential living costs (energy and water bills).

- The increased emphasis on electricity-based heating systems (and the move away from fossil fuels) should not lead to higher home energy bills.

- The inability of low-income households connected to communal heating systems to access grants or funds or financial support available to those purchasing energy directly from a supplier should be recognised.

- The installation of high-spec heating, ventilation and control systems should be undertaken using a clear design process to ensure from the initial specification that their usability by any future residents is considered and that these systems will not therefore lead to inequalities in energy costs being paid either between different residents in the NEC area or in NEC and the wider city.

Health Inequalities

Health inequalities are marked in the city with as there is a life expectancy gap of nearly 10 years between the richest and poorest wards in the city. Moreover, in existing new communities in Cambridgeshire, it has been found that there is an increased need for public services compared to neighbourhoods that have existed for a long time. Therefore, it is very important that health services are prioritised and available before people move into the area. Other means to prevent ill-health for existing communities surrounding the new development and for people in the new development itself are to provide open space and potentially free exercise

equipment, and in the development of well-placed and accessible pedestrian and cycle lanes.

Of importance relating to existing communities surrounding new developments is the stark health inequalities between Gypsy and Traveller people especially and settled communities – where life expectancy gap is between 10 and 12 years. Several submissions to the Women and Equalities Select Committee[14] stated that Gypsy, Roma and Traveller people, especially travelling families, tend to use emergency services such as A&E rather than any structured approach to healthcare, due to previous poor experiences. This leads to disrupted health provision and makes preventative care very difficult to administer. Accessibility to GP services is a key priority to improve the health of people living along Fen Road.

Finally, in existing new communities mental health issues have been commonplace due to feelings of isolation because it can take a while for people to develop social networks of support. Services supporting people's mental health and wellbeing are very important as well as means of tackling isolation by providing amenities that are cheap and/or free for people to use for purposes of socialising. It is essential that a community centre be available for people – with a maximum of 15 minutes' walk to this in line with Cambridge's policy on planning community centre provision in the rest of the city.

Educational Inequalities

Cambridge has the highest proportion of working age people with qualifications at NVQ level 4 and above of any UK city. But we have amongst the lowest levels of social mobility in the country, and there are significant inequalities in educational attainment. Less than a third of pupils from low income families achieved 5 GCSE grades A*-C, compared to two thirds of children from other income groups. In addition, of importance to the North East Cambridge development given the proximity of the Fen Road site, national research has found that after key stage 4 a quarter of Gypsy, Roma and Traveller children go into neither education nor employment.

There are opportunities for the North East Cambridge development to reduce educational inequalities. The AAP proposes 3 Primary Schools (inclusive of nursery provision) and safeguarded land for a secondary school that will be accessible to new housing on site and surrounding residential areas.

The planning of access routes, amenities and open space could also help ensure that space around the already existing businesses is used that can raise awareness of opportunities and raise aspirations and prevent these spaces from being quiet at weekends that may mean they are subject to anti-social behaviour.

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[14] House of Commons Women and Equalities Committee 2019: Tackling inequalities faced by Gypsy, Roma and Traveller communities Seventh Report of Session 2017–19

Preferred Approach

To ensure the North East Cambridge development meets the needs of the new communities and supports surrounding communities while minimising poverty and inequality, the AAP requires a number of considerations. Social and community infrastructure (both indoor and outdoor) provision is key in enabling accessibility to places that benefit health and wellbeing of communities. Provision in the form of community centres, libraries, outdoor space and play areas as well as health services and schools on site will allow for accessibility and prevention of health and education inequalities.

The AAP for the new development could tackle social exclusion of low-income groups by considering:

- Placement of transport links, including pedestrian and cycle paths, from already existing communities into the development such as the Fen Road site.
- Location of housing to ensure that there is a mixture of tenure types in any given area.
- Provision of affordable local shops, and places to socialise, which were key areas of dissatisfaction for residents of the Southern Fringe new communities in a recent resident survey.[15]
- Provision of on-site community and cultural infrastructure for communities to use that are multi-functional for different ages and abilities. The community facilities including flexible indoor and outdoor spaces will facilitate and encourage social activity, reducing a range of inequalities.

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[15] Cambridgeshire County Council: 'Cambridgeshire Southern Fringe: A survey of residents' 2019

Appendix C2: Climate Change, Energy and Sustainable Design and Construction Topic Paper

Introduction

Development at North East Cambridge provides an opportunity to design for a new community that has responding to the climate emergency at its heart. NEC will deliver a low environmental impact urban district where:

- Development forms will support the transition to zero carbon and embed the challenge of climate change resilience
- It will be a new model for low car dependency by maximising the use of and integration with walking, cycling and public transport infrastructure
- It will be inherently 'walkable' and allow easy transitions between sustainable transport modes (walking, cycling & public transport) with density linked to accessibility
- Green infrastructure will enable everyone to lead healthy lifestyles, and will protect and enhance biodiversity.
- Low-tech green solutions will couple with high tech smart city technology in achieving future-proofed and climate adaptable buildings and spaces.

In October 2018, the Intergovernmental Panel on Climate Change (IPCC) released a report highlighting the significance of limiting global warming to just 1.5°C in line with the Paris Agreement[1] and the potential climatic implications of exceeding this. In order to prevent further global warming beyond this level, the IPCC concluded that global net human-caused emissions of carbon dioxide (CO_2) need to fall by about 45% from 2010 levels by 2030, reaching 'net zero' around 2050. Even by limiting emissions, we will still see some global warming, with the UK Climate Projections 2018 study noting that even under a lower emissions scenario, the UK will still see higher average yearly temperatures and an increase in extreme weather events. However, under a scenario

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[1] [Intergovernmental Panel on Climate Change: Global Warming Report](#)

with the highest emissions, summer temperatures could be up to around 5°C hotter by 2070 with an increase in the frequency and magnitude of extreme weather events.

The IPCC's report has led to local governments across 16 countries declaring climate emergencies, and in May 2019, the UK Government declared a climate emergency, amending the 2008 Climate Change Act to set a target for emissions in the UK to become net zero by 2050. Both Cambridge City Council and South Cambridgeshire District Council have pledged to support net zero through the development of planning policy, as well as other areas over which the Councils have influence.

Net zero means the complete decarbonisation of the economy: emissions cannot exceed zero. The work of the IPCC and other organisations such as the Committee on Climate Change, recognises that it won't be possible to phase out all carbon emitting activities, for example in agriculture. Instead, net zero proposes that in addition to phasing out fossil fuels and the role of renewable energy and energy reduction measures, there is also a role for balancing a certain measured amount of carbon released with negative emission carbon offsets, for example, tree planting or carbon capture and storage.

Planning is not just concerned with buildings themselves but place making and as such has the potential to be a powerful tool in the response to the climate emergency. Achieving net zero status cuts across all elements of place making; not just through how homes and buildings are designed and constructed, but also by ensuring new development is in places where it is or can be well served by low carbon transport links like public transport, cycling and walking as well as renewable and low carbon energy. The proximity of North East Cambridge to the Cambridge North Railway Station, Guided Bus route, Waterbeach Greenway and Public Transport Corridor, the Cambridgeshire Autonomous Metro (CAM) and the Chisholm Cycle Trail, combined with the mixed use nature of the site, present an exciting opportunity to deal with transport related emissions, designing places around active travel and minimising the need to travel for homes, work and leisure.   Green infrastructure also has a role to play, supporting fauna and flora to enhance biodiversity and offering opportunities to capture any remaining emissions as well as helping our communities adapt to our changing climate through flood storage and helping to cool our cities, towns and villages. Planning can also help ensure we make the best use of the many natural assets the area has to offer, as well

as considering issues such as efficient use of resources including water. Development at North East Cambridge should, therefore, help to support the transition to a zero carbon society.

The World Green Building Council's Advancing Net Zero campaign calls on all new buildings to be net zero carbon in operation by 2030. The UK Green Building Council, as part of its work to develop a framework definition for Net Zero Carbon Buildings, have developed two definitions for net zero carbon buildings, focussing separately on the operation and construction of the building.

Definitions

Net zero carbon – operational energy is defined as: "When the amount of carbon emissions associated with the building's operational energy on an annual basis is zero or negative. A net zero carbon building is highly energy efficient and powered from on-site and/or off-site renewable energy sources, with any remaining carbon balance offset".

Net zero carbon – construction is defined as: "When the amount of carbon emissions associated with a building's product and construction stages up to practical completion is zero or negative, through the use of offsets or the net export of on-site renewable energy".

Key Evidence Documents

Evidence that we already have:
- Carbon Neutral Cambridge (2019). Zero Carbon Futures Symposium. Event Report. Available online at: https://carbonneutralcambridge.org/wp-content/uploads/2019/08/Zero-Carbon-Futures.pdf
- CUSPE (October 2019) Net Zero Cambridgeshire: What actions must Cambridgeshire County Council take to reach net zero carbon emissions by 2050. Available online at:

  https://cambridgeshire.cmis.uk.com/CCC_live/Document.ashx?czJKcaeAi5tUFL1
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- The University of Manchester and Tyndall Centre for Climate Change Research (October 2019). Setting Climate Commitments for Cambridge. Quantifying the implications of the United Nations Paris Agreement for Cambridge. Available online at: https://carbonbudget.manchester.ac.uk/reports/E07000008/print/

- The University of Manchester and Tyndall Centre for Climate Change Research (October 2019). Setting Climate Commitments for South Cambridgeshire. Quantifying the implications of the United Nations Paris Agreement for South Cambridgeshire. Available online at:
https://carbonbudget.manchester.ac.uk/reports/E07000012/print/

- Element Energy and Terence O'Rourke Ltd (2010). Decarbonising Cambridge Study: A renewable and low carbon energy study for Cambridge. Available online at: https://www.cambridge.gov.uk/media/2529/rd-cc-250.pdf

- Cambridgeshire Horizons – Cambridgeshire Renewables Infrastructure Framework:
  - 1st Report: Baseline Data, Opportunities and Constraints (2012). Available online at: https://files.cambridge.gov.uk/public/ldf/coredocs/RD-CC/RD-CC-050.pdf
  - Final Report: Finance, Delivery and Engagement (2012). Available online at: https://files.cambridge.gov.uk/public/ldf/coredocs/rd-cc-040.pdf

- Cambridgeshire Horizons – Carbon Offset Fund for Cambridgeshire:
  - Scoping Report: Feasibility of a Carbon Offset Mechanism for Cambridgeshire (2010). Available online at: https://files.cambridge.gov.uk/public/ldf/coredocs/Stage%201%20Carbon%20Offset%20Report.pdf
  - Cambridgeshire Community Energy Fund. Stage 2 Final Report (2012). Available online at: https://files.cambridge.gov.uk/public/ldf/coredocs/Stage%202%20Community%20Energy%20Fund%20Report.pdf

- Asset Utilities. Greater Cambridge Partnerships – Local Network Analysis. Final Report – February 2019 (hard copy only).
- Local Energy East Strategy: An Energy Strategy for the Tri-Local Enterprise Partnership (LEP) area (2018). Available online at: https://www.energyhub.org.uk/wp-content/uploads/2019/09/LEE-Energy-Strategy.pdf
- UK Green Building Council (UK-GBC) Framework for Net Zero Built Environment and the Policy Playbook. Available online at: https://www.ukgbc.org/ukgbc-work/advancing-net-zero/
- Heat Network Delivery Unit (HNDU) work on heat mapping for Cambridge (2019).

New evidence that needs to be commissioned:

- Work to consider the ways in which development at North East Cambridge can support the transition to a net zero carbon society. An evidence base to support the Greater Cambridge Local Plan and NEC is currently under and will inform future policies related to carbon reduction and the transition to net zero carbon.
- District Wide Energy and Infrastructure Study and Energy Masterplan for the site to consider suitable options for renewable energy and associated supporting infrastructure (including smart energy options). This needs to consider how much grid capacity would be required to support the growth of the district, taking into account various policy scenarios for supporting the transition to net zero, the likely renewable energy mix, electric vehicle charging requirements, the type of energy infrastructure that could support this, including smart infrastructure, and giving specific considerations to renewable heat technology.

National Planning Policy Framework (NPPF) and other relevant national legislation

Addressing climate change is one of the core land use planning principles within the NPPF. Section 14 of the NPPF considers the role of planning in dealing with climate change and flood risk, noting the role of the planning system in supporting the transition to a low carbon future in a changing climate. Planning should help to shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience, and support renewable and low carbon energy and

associated infrastructure. Footnote 48 of paragraph 149 goes on to note that planning policies should be in line with the objectives and provision of the Climate Change Act 2008. The Climate Change Act 2008 was amended in August 2019 to set a legally binding target for the UK to become net zero by 2050.

The NPPF is supported by the National Planning Practice Guidance (NPPG) which notes that in addition to the delivery of appropriately sited green energy, effective spatial planning is an important part of a successful response to climate change as it can influence the emission of greenhouse gases. Local Planning authorities should ensure that protecting the local environment is properly considered alongside the broader issue of protecting the global environment. Planning also has an important role to play in increasing the resilience to climate change through the location, mix and design of development.

Section 182 of the Planning Act (2008) places a legal duty on local planning authorities to ensure that their development plan documents include policy to secure the contribution of development and the use of land in the mitigation of, and adaptation to climate change. Provisions in the Planning and Energy Act also enable local planning authorities to set requirements for carbon reduction and renewable energy provision, and it should be noted that while the Housing Standards Review did propose to repeal some of these provisions, amendments to the Planning and Energy Act have not taken place.

Background/Context/Relevant Data/Corporate Council Objectives and Strategies

Both Cambridge City Council and South Cambridgeshire District Council have declared climate emergencies, pledging to support net zero through the development of planning policy, as well as other areas over which the Councils have influence.

In terms of corporate objectives:
Cambridge City Council: Caring for the planet

- A city that takes robust action to tackle the local and global threat of climate change, both internally and in partnership with local organisations and residents, and to minimise its environmental impact by cutting carbon, waste and pollution.

South Cambridgeshire District Council:

- Being green to our core – by the Council developing a plan for a carbon-neutral future for South Cambridgeshire, exploring opportunities for green energy generation and improving air quality.

Cambridge and South Cambs Local Plans and other related planning documents

Cambridge Local Plan (2018):

- Section 4, policy 28 (carbon reduction, community energy networks, sustainable design and construction and water use)

South Cambridgeshire Local Plan (2018):

- Section 4 policies:
  - CC/1 (mitigation and adaptation to climate change);
  - CC/2 (renewable and low carbon energy generation);
  - CC/3 (renewable and low carbon energy in new developments);
  - CC/4 (water efficiency);
  - (CC/6 (Construction methods – covers issues such as CEMPs)

Greater Cambridge Sustainable Design and Construction SPD (adopted January 2020). This SPD provides guidance on the implementation of policies in the adopted Local Plans. With regards to NEC, site specific policies are to be developed as part of the AAP, so while some sections of the SPD will have relevance, for example guidance in relation to climate change adaptation, other elements of the SPD will not be relevant. It may be that a technical note will need to be developed to sit alongside the AAP, setting out those parts of the SPD that are relevant to NEC and updating the sustainability checklist so that it has direct relevance to policies in the AAP.

NEC AAP Issues and Options Report Questions and representations received

The Issues and Options 2019 consultation considered the following options related to climate change and sustainable construction:

Carbon reduction standards for residential development

Question 62 of the Issues and Options set out the following options for carbon reduction from residential Development:

- Carbon reduction. Given the difference between policy in the adopted Local Plans, it is considered that there are four options that should be explored in relation to carbon reduction from residential development:

  A) a 19% improvement on 2013 Building Regulations (the current Cambridge Local Plan standard); or

  B) a requirement for carbon emissions to be reduced by a further 10% using on-site renewable energy (the current South Cambridgeshire Local Plan standard); or

  C) a 19% improvement on 2013 Building Regulations plus an additional 10% reduction using on-site renewable energy.

  D) consideration of a higher standard and development of further evidence alongside the new joint Local Plan.

Summary of responses

Of the 11 comments submitted to this question, there was clear support for Option D (6 comments) and the setting of targets that reflected the climate emergency. There was also some support for Option C as a minimum, with others calling for new housing to be constructed to the Passivhaus standard. There were also calls to take into account the decarbonisation of the grid, to ensure that the redevelopment of the area is not locked into the use of potentially higher emitting technologies over time

Other approaches to sustainable design and construction

Questions 63 and 64 asked for people's views on the following construction standards:

- Water efficiency – 110 litres/person/day.

Non-residential development:

- Minimum requirement for achievement of Building Research Establishment Environment Assessment Methodology (BREEAM) 'excellent' with full credits achieved for category Wat 01 of BREEAM. Carbon reduction would be dealt with via the mandatory requirements associated with the energy credits associated with BREEAM (category Ene 01).

All development

- A requirement for all flat roofs to be green or brown roofs, except for where roof spaces are proposed to be utilised for amenity space (e.g. roof gardens);
- Requirements related to electric vehicle charging infrastructure to support the transition to low emissions vehicles;
- In order to minimise the risk of overheating, all development must apply the cooling hierarchy as follows:
  - Reducing internal heat generation through energy-efficient design;
  - Reducing the amount of heat entering a building in summer through measures such as orientation, shading, albedo, fenestration, insulation and, where appropriate, green roofs;
  - Managing heat within the building, e.g. through use of thermal mass and consideration of window sizes;
  - Passive ventilation;
  - Mechanical ventilation;
  - Only then considering cooling systems (using low carbon options).

Overheating analysis should be undertaken using the latest Chartered Institute of Building Service Engineers (CIBSE) overheating standards, with consideration given to the impact of future climate scenarios.

Reference was also made to how to enable sustainability targets to be reviewed over time to ensure that development of the district contributes to the transition to a net zero society, and the role of site wide approaches to issues such as water, energy and associated infrastructure.

Summary of responses

There was generally support for the approach outlined in the AAP from the majority of the 21 respondents, with calls for the setting of clear and measurable targets for sustainability. There was some call for flexibility in the application of standards such as BREEAM 'excellent' to take account of the specific types of buildings being proposed as well as calls to go beyond the 'excellent' standard. There was also mixed support for giving consideration to the development of review mechanisms as part of planning permissions so that development can take account of changing national standards over time. On the one hand there was a call for developers to have certainty as to the standards they will be required to achieve, while on the other there was a recognition that not all future scenarios are foreseeable and that in order to avoid perverse outcomes in future it may be necessary to reappraise the policy requirements so that the most up to date and relevant standards are applied where necessary, reasonable and practicable. It was also considered advisable to follow guidance from notable charities and NGOs such as the UK Green Building Council, who have developed a Framework for Net Zero in the Built Environment.

There was also concern raised regarding the need for planning to take full consideration of climate change and water stress, with some respondents noting issues surrounding water abstraction and the impacts that this is having on the River Cam and other local watercourses. There was support from the Environment Agency for early consideration of integrated approaches to water management that take into consideration not just flood risk but also water resource availability. The opportunities that might be presented through a major landowner also being a water company were noted. Cambridge Water were supportive of setting the highest possible standards for water efficiency with reference to 80 litres/person/day for residential development.

Site wide approaches

Questions 65 and 66 of the Issues and Options Report gave consideration to the following site wide approaches that could be taken as part of the Area Action Plan:

- Energy provision, through the development of decentralised energy systems and innovative approaches to energy infrastructure such as smart energy grids;
- Community scale approaches to water, taking an integrated approach to water management, which gives consideration not just to reducing flood risk but also

considers opportunities for water re-use and the wider benefits of managing water close to the surface.

- Application of the BREEAM Communities International Technical Standard[2] to the masterplanning of the site.

Of the 8 responses to question 65, there was clear support for the setting of an aspirational approach to sustainability for the site, although there were some calls for flexibility in how these aspirations were applied. There was some support for the use of the BREEAM communities standard, although others felt that further work was needed to see if such a standard would secure effective outcomes for the site. Many recognised the opportunities that the scale of development at the site presented in terms of energy and water.

In response to question 66, which asked if there were other approaches to sustainable design and construction that should be considered, there was support for the consideration of the embodied impacts of buildings and infrastructure as well as opportunities for the promotion of circular economy principles. Consideration should also be given to embracing and supporting innovative smart-tech and infra-tech.

Key Issues (including any lessons learnt from other sites)

Some strategies for enhancing carbon reduction from new development can lead to unintended consequences if they are not correctly implemented and operated e.g. communal heating in new developments where payment mechanisms and maintenance fees can lead to fuel poverty for tenants in affordable housing or where incorrectly specified and installed systems are not performing as expected and in some cases are leading to excessive internal heat loads in communal areas, contributing to overheating. Policies should be technology agnostic but also make reference to best practice guidance and certification schemes where available. Consideration should also be given to the role of assured performance mechanisms to ensure that built performance

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[2] BREEAM: Communities International Technical Standard 2020

matches designed performance – Milton Keynes have recently adopted planning policy related to this.

A further key issue is that across the Greater Cambridge area, the electricity grid serving new developments is at capacity, and that significant grid reinforcement is required, not just to accommodate growth but also to accommodate an increased use of renewable energy and infrastructure such as electric vehicle chargepoints. There is a need to ensure that consideration is given not just to carbon reduction targets and the renewable energy options that could help to deliver these targets (as part of the energy hierarchy) but also to the infrastructure required to support decarbonisation, including innovative approaches to infrastructure provision. This will be picked up as part of work on the development of a Site Wide Energy and Infrastructure Study and Energy Masterplan for the site.

There is a legal duty on the Councils to set carbon reduction targets to get to net zero carbon in line with the Climate Change Act. Reading have successfully defended their new policy of all major new development achieving zero carbon status (in line with the requirements of the London Plan – 35% improvement on Part L 2013 plus carbon offsetting) at their Local Plan examination. This sets an interesting precedent for other local planning authorities to set carbon reduction targets beyond those suggested by the National Planning Policy Framework and Planning Practice Guidance .However, this policy only relates to energy use in buildings, while net zero carbon requirements have much greater implications for new development. In addition, the current consultation on changes to Building Regulations in 2020 proposed to implement the changes to the Planning and Energy Act, which would restrict the role of local planning authorities in setting new targets for carbon reduction in new development.

Preferred Approach

Policy 2: Designing for the climate emergency

Development of a wider climate change and sustainable construction policy as suggested in the Issues and Options 2 paper. This will cover the issues that need to be considered as part of Sustainability Statements, including:

- o **Construction standards for non-residential and mixed use buildings**

- o **Adaptation to climate change** - to ensure that the district is climate proofed, not just in terms of buildings but also the spaces around buildings and the infrastructure required to serve the development. Consideration should be given to a range of climate risks, including flood risk, overheating and water availability. In order to minimise the risk of overheating, all development must apply the cooling hierarchy as follows:

    - Reducing internal heat generation through energy-efficient design;

    - Reducing the amount of heat entering a building in summer through measures such as orientation, shading, albedo, fenestration, insulation and green roofs and cool materials. All flats roofs should be green or brown roofs;

    - Managing heat within the building, e.g. through use of thermal mass and consideration of window sizes;

    - Passive ventilation;

    - Mechanical ventilation;

    - Only then considering cooling systems (using low carbon options).

Overheating analysis must be undertaken using the latest CIBSE overheating standards, and include consideration of future climate scenarios using 2050 Prometheus weather data[3].

- o **Carbon reduction –** to ensure that development at NEC is on a clear pathway to support the delivery of net zero carbon by 2050. Consideration should be given to carbon emissions associated with operational energy and construction, including materials, as well as wider emissions, for example those associated with transport.

- o **Water management –** to ensure that development includes high levels of water efficiency in order to respond to the water stress facing Greater Cambridge, and to ensure that development takes an integrated approach to water management.

- o **Site waste management –** to ensure that all new development is designed to reduce construction waste and integrate the principle of designing for deconstruction, and to make it easier for occupants to maximise levels of recycling and reducing waste sent to landfill with reference to the RECAP Waste Management Design Guide.

- o **Use of materials –** All major new development should take into consideration the embodied carbon associated with materials using the RICS Whole Life Carbon[4] approach or successor documents. Development should be designed to maximise resource efficiency and

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[3] http://emps.exeter.ac.uk/engineering/research/cee/research/prometheus/

[4] RICS Whole Life Carbon Assessment for the Built Environment professional statement 2017

identify, source and use environmentally and socially responsible materials, giving consideration to circular economy principles and design for deconstruction.

- o **Wider approaches to sustainable design and construction** - including food growing; biodiversity and ecology; environmental health considerations; transport, mobility and access; health and well-being; culture, heritage and the quality of built form including efficient use of land.

- o **Futureproofing –** all development, particularly that being brought forward at the early phases of NEC, must consider how the scheme can be futureproofed to enable future occupiers to easily retrofit or upgrade buildings and/or infrastructure in the future to enable achievement of net zero carbon development.

- o Flood risk and sustainable drainage to be considered as part of a separate policy.

- o Requirements related to electric vehicle charging infrastructure to support the transition to low emissions vehicles – some of this will get picked up by future Building Regulations, but we will need to consider whether there will be instances where we will need to set requirements e.g. multi-storey car parks or car barns serving multiple buildings and also the need to ensure electric vehicle charge points are integrated into landscaping proposals where surface parking is provided, for example through the provision of electric vehicle charge points integrated into street furniture such as lampposts. There may also be a need to consider an approach for encouraging a switch to low emissions Heavy Goods Vehicles in the area e.g. role of hydrogen. These issues will be picked up as part of the Connectivity chapter of the Area Action Plan.

Policy 3: Energy and associated infrastructure

- In order to support the transition to net zero carbon and deliver energy efficiency, a site wide approach to energy and associated infrastructure should be investigated and, where feasible and viable, implemented.

Policy 4a: Water efficiency

- All new residential developments must achieve, as a minimum, water efficiency equivalent to 110 litres/person/day moving towards a target of water use of no more than 80b litres/person/day giving consideration to rainwater harvesting and/or water recycling.

- Proposals for non-residential development must achieve 5 BREEAM credits for water use (Wat 01), unless it can be demonstrated that such provision in not technically or economically viable.

Reasons for selecting preferred approach

Responding to the climate emergency/sustainable design and construction

With regards to wider approaches to sustainable design and construction and responding to the challenges posed by our changing climate, it is proposed to carry forward the options consulted on as part of question 63. Some of these elements included within this policy are those that the councils are required by law to include in its local plans. For example, the Planning Act (2008) places a legal duty on all local planning authorities to include climate change adaptation policies in their plans. Other elements are supported by the National Planning Policy Framework, which, at paragraph 149, places a duty on local planning authorities to adopt "a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures".

The options outlined in the recommendations for policy development would help to ensure that development of North East Cambridge mitigates its climate impacts in terms of reducing emissions, as well as ensuring that the site is capable of adapting to our future climate.

In terms of construction standards for new non-residential development, as per the option outlined in the 2019 Issues and Options Report, BREEAM excellent is recommended as the minimum construction standard. This is in line with adopted policy for the rest of Cambridge, as set out in the 2018 Cambridge Local Plan. Subject to further work, it is also suggested that the policy contains and aspiration for at least one of the non-residential buildings at the site could target the BREEAM outstanding target, which would be in keeping with the vision of the site being a place for innovative living and working. BREEAM outstanding represents innovation, with less than 1% of the UK's new non-domestic floorspace achieving this standard. BREEAM 'excellent' still represents best practice, being equivalent to the performance of the top 10% of UK new

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non-domestic floorspace. This would build on the approach being taken on other sites in Cambridge, for example at the University of Cambridge's West Cambridge site, where there is a commitment as part of the outline application for the site for 2 buildings to achieve 'outstanding' status. The precise number of buildings that could achieve this standard will be considered as part of the Viability work for NEC.

While the focus of policy is on BREEAM certification, the policy will also be supportive of alternative sustainable construction standards for both non-residential and residential development. For example, the Passivhaus standard can be applied to non-residential as well as residential schemes.

Energy and associated infrastructure

The preferred approach to carbon reduction is to develop policy that will ensure that development at NEC supports the transition to net zero carbon, supported by the Greater Cambridge Local Plan Net Zero Carbon Evidence Base. Consideration was given to including Cambridge City Council's current policy requirement for a 19% improvement in emissions compared to Part L of the Building Regulations, which is in keeping with national planning policy. Alternatively, carbon reduction could be left to Building Regulations, although this approach would only consider energy use in buildings and not the wider emissions reduction that is required to get to net zero carbon by 2050. However, footnote 48 of the NPPF requires planning policies to be in line with the objectives and provisions of the Climate Change Act 2008, which requires the UK to achieve net zero carbon status by 2050. To only require a 19% improvement on current 2013 Building Regulations would not be in line with the objectives and provisions of the Climate Change Act. For the Councils to achieve this legally binding target, urgent action is needed to address the carbon emissions associated with new development and the planning system has a clear role to play in this, in line with the requirements of Section 182 of the Planning Act (2008). In addition, future changes to Part L of the Building Regulations will mean that assessing a 19% reduction in emissions compared to Part L 2013 will become increasingly difficult to determine.

In light of the legal obligations, it is considered that it is important that the North East Cambridge Area Action Plan should help to put new development in the area on a clear pathway towards net zero carbon by 2050. Further work is required to identify what future targets would look like, and this is currently being developed in the form of the

Greater Cambridge Local Plan Net Zero Carbon evidence base, which can inform future stages in the AAP process.

With regards to renewable energy provision, in light of the opportunities that the redevelopment of the NEC site presents for site wide approaches to energy, and in light of the support for this approach at Issues and Options, policy will promote the development of such an approach, supported by the commissioning of a Site Wide Energy and Infrastructure Study and Energy Masterplan. This will help to identify at an early stage the level of energy infrastructure required to support the development of NEC, taking a proactive approach to assessing the energy requirements of the site in order to ensure that infrastructure constraints do not delay development from coming forward. This approach is in keeping with paragraph 151 of the NPPF, which states that: To help increase the use and supply of renewable and low carbon energy and heat, plans should:

a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts);

b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and

c) identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.

Water efficiency (Policy 4a)

In terms of water efficiency, due to the levels of water stress facing Cambridge, it is proposed that policy requires use of the national technical standard of 110 litres/person/day for all new residential development, and the specification of maximum water efficiency BREEAM credits for non-residential development (Wat 01). However, it is noted that these targets alone may not be sufficient to secure long term sustainability of water supply, and it is noted that in their response to the 2019 Issues and Options consultation, Cambridge Water reiterated their support for the setting of an 80 litre/person/day standard for all residential development at the site. It is considered that the site could, due to a number of factors, represent an opportunity for a site wide approach to water reuse as part of an integrated approach to water management, and as such policy in the AAP should promote this approach.

Sustainability Appraisal (with input from Sustainability Appraisal Consultants)

With regards to policy 2, the SA noted significant positive effects in relation to SA objective 3 as the policy sets out that the principles of sustainable design and construction must be clearly integrated into the design of NEC. All development proposals shall be accompanied by a Sustainability Statement which will outline water management and adaptation to climate change. Furthermore, development must be designed to maximise resource efficiency and identify, source and use environmentally and socially responsible materials, the development must include high levels of water efficiency to reduce water stress.

Significant positive effects are also expected against SA objectives 7 (greenhouse gas emissions) and 8 (climate change resilience) as this policy outlines how development in NEC will need to support the transition to a net zero carbon society. Consideration must be given to carbon emissions associated with operational energy and construction, including materials and wider emissions such as those associated with transport. Development must also be supported by decentralised renewable and low carbon energy combined with smart approaches to energy infrastructure including energy storage. The policy also outlines that the district must ensure it builds resilience to climate change through green infrastructure and considering the wide range of climate risks. Therefore, building resilience to and reducing the area's vulnerability to climate change is addressed through this policy.

Minor positive effects are expected against SA objectives 2 (air quality and pollution), 4 (protected habitats and species), 5 (biodiversity), 6 (landscape and townscape), 9 (health and wellbeing), 10 (open space), 12 (equality), 14 (economy) and 16 (sustainable travel) as this policy aims to reduce carbon emissions, which will likely have a positive effect on air pollution due to disincentivising use of private vehicles, incorporate green infrastructure, which could include green spaces around the development which increases health and wellbeing, access to green space and wildlife habitats, and consider transport, mobility and access. In addition, the incorporation of green infrastructure could improve the public realm thereby enhancing the townscape of

the area. All of which will improve the adaptability of the local economy to a net zero carbon society.

Regarding policy 3, significant positive effects are expected against SA objective 7 (greenhouse gas emissions) as this policy outlines how development will be delivered in line with the Site Wide Energy and Infrastructure Study and Energy Masterplan, which is currented being developed. The aim of the study and masterplan is to support the energy demands of the development and the transition to net zero carbon, considering energy use in buildings and transportation thereby reducing the development's contribution to climate change. Development of the energy masterplan will help to identify opportunities for decentralised energy including district energy systems. Minor positive effects are expected against SA objective 2 (air quality and pollution) as the promotion of innovative smart energy that reduces carbon emissions will also help to reduce air pollution resulting from burning of fossil fuels. Uncertainty is attached to each positive effect as it is not clear what the outcomes of the Site Wide Energy and Infrastructure Study and Energy Masterplan will require. The SA did recommend that additional text be added to promote local energy communities and local collaboration to encourage community ownership of any decentralised energy network opportunities, and that specific reference to achieving net zero carbon and energy efficiency be added to the policy. These amendments have been incorporated into the policy and supporting text.

For policy 4a, Significant positive effects are also expected against SA objective 3 (water) as this policy states that all new residential development must achieve, as a minimum, water efficiency equivalent to 110 litres/person/day. Also, proposals for non-residential development must achieve 5 BREEAM credits for water use. Consideration should also be given to community scale approaches to water, taking an integrated approach to water management. Minor positive effects are expected against SA objective 8 (climate change resilience) as improving water efficiency will help adapt to lower water availability, which is likely to occur as a result of climate change.

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Appendix C3: Education Topic Paper

Introduction

The comments within this topic paper are provided on behalf of Cambridgeshire County Council (in its role as the Local Children's Services Authority) by the 0-19 Place Planning and Organisation Team within the Education Directorate. They are informed by the most recent information and guidance available at the time of the response.

As further details regarding the development emerge, it will be necessary to provide additional comments in relation to education. The County Council therefore remain committed to working in collaboration with South Cambridgeshire District Council and Cambridge City Council during the Area Action Plan making process.

The vision for the North East Cambridge development is for it to be "an inclusive, walkable, low-carbon new city district with a lively mix of homes, workplaces, services and social spaces, fully integrated with surrounding neighbourhoods".

To ensure the vision and objectives are met, the Area Action Plan aims to consider a range of opportunities to integrate educational facilities within the North East Cambridge development.

Key Documents

Legislation/National Guidance
- The Education Act (1996, 2011)
- Children Act (2004)
- The Education and Inspections Act (2006)
- The Childcare Act (2006, 2016)The Education and Skills Act (2008)
- The Localism Act (2011)
- Home to School Travel and Transport Guidance (2014)
- Mainstream Schools Area Guidelines (2015)
- Securing developer contributions for education (2019)
- National Planning Policy Framework (2019)

Cambridgeshire County Council Guidance
- Provision of Early Years and Childcare in Cambridgeshire (2016)
- Planning Obligations Strategy (2016)
- Cambridgeshire's 0-19 Education Organisation Plan (2019-20)
- Children, Families and Adults Vision (2019)

Cambridgeshire County Council Committee Papers

- The Cambridgeshire and Peterborough Memorandum of Co-operation' (2012)
- Review of Policies and Working Practices in Response to Demographic Pressures (19th January 2016)
- City Secondary Provision (11th November 2016)
- Estimating Demand for Education Provision arising from new housing developments – Revision of methodology (5th December 2017)
- Delivering the Extended Entitlement to an additional 15 hours free childcare for eligible 3 and 4 year olds (13th March 2018)
- Nearly Zero Energy Buildings Requirements for new public buildings (17th December 2019)

Background

Responsibilities

Under the Childcare Act (2006), Cambridgeshire County Council has a duty to secure sufficient and suitable childcare to enable parents to return to work to undertake education or training which could lead to employment. This includes an entitlement of 570 hours of free early education per year for eligible two year olds, starting the funding period following their second birthday and 570 hours of free early education for all three and four year olds, starting the funding period following their third birthday (commonly referred to as the universal entitlement). Since 2017, there has been an extension to the entitlement for children aged 3 and 4 from working families who are now entitled to an additional 570 hours of free childcare (commonly referred to as the extended entitlement), subject to meeting the qualifying criteria set out by the Government. Whilst local authorities are not expected to provide childcare directly, they are expected to work with local private, voluntary and independent sector providers to meet local need and to ensure a suitable balance of provision including full day care and sessional providers, wraparound provision and childminders.

The Council also has a duty, established under the Education Act 1996, to ensure sufficient school places for every child within Cambridgeshire who is of statutory school age (5-16 years of age) and whose parents want their child educated in the state funded sector. The Council also has a duty to promote diversity, parental choice and high standards and to ensure fair access to educational opportunity.

Where new communities are being delivered, or are in the process of being planned, the Council is committed to working in partnership with developers and other stakeholders to ensure that these responsibilities can be met.

Corporate Strategy

The Corporate Strategy sets out the key outcomes, activities and behaviours that the Council will pursue over the next three years (2019-21). Within this period, three outcomes are prioritised; a good quality life for everyone, thriving places for people to

live and the best start for Cambridgeshire's children. A brief summary of how these relate to the development is included within the table below.

Outcomes	Implications
A good quality of life for everyone	New developments must have sufficient schools to serve the community. These should offer good quality education and ensure that children and young people have access to opportunities, irrespective of their background. In addition to this, schools should be well positioned to ensure that they are easily accessible. If pupils have access to local schools and associated services, they are more likely to attend them by either cycling or walking rather than through local authority provided transport or car.
Thriving places for people to live	The provision of high quality education, including both the primary and secondary age ranges, supports economic development by providing the individual with the necessary skills to take advantage of the employment opportunities available. The first primary school in any new community should serve the 2-11 age range. The early years and childcare services associated with this will provide local employment, as well as essential childcare services for working parents or those seeking to return to work.
The best start for Cambridgeshire's children	Where new primary schools are established, facilities for early years and childcare should be provided on site. The Council would expect this to offer the full range of entitlements, including the universal entitlement (15 hours), the extended entitlement (30 hours) as well as funded places for two year olds who qualify. The Council is aware that there is high demand for childcare places across the city. Additional opportunities for other on-site provision should be secured within the development, although existing providers nearby may also show an interest to expand. This should allow for different models of provision within the private, voluntary and independent (PVI) sector.

Established Practice

In order to fulfil its statutory responsibilities and the outcomes set out above, the Council has adopted a number of policies and working practices to inform the specifications for new schools, or the expansion of existing ones. These were reviewed most recently in 2016, and a revised set of principles were endorsed by members, as detailed below.

- Where there is an identified need for additional early years and childcare places in a particular area, including where a new primary school is being established in a new community, the local authority should always consider alternative models to meeting need in preference to establishing a maintained nursery class.

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- The first primary school in any new community should serve the 2-11 age range. In addition, there should be an explicit expectation that all potential school sponsors will commit to guarantee to make available the on-site accommodation provided specifically for the delivery of early years and childcare, for children aged 2 - 4 from the day on which the school opens.
- Ancillary facilities for pupils with special educational needs should be built into the specification for new primary school accommodation.
- Primary schools serving the 4-11 age range should be established, where possible, as either 420 places (2 forms of entry), 630 places (3 forms of entry) or 840 places (4 forms of entry) with the size being considered on a case by case basis depending on the local context and the under-pinning requirement of the local authority to be in a position to meet its statutory duty to secure sufficient school places in time to meet forecast demand.
- The local authority's preferred maximum size for separate infant and junior schools and all-through primary schools operating on a split site should be 4 forms of entry (360, 480 and 840 places respectively).
- Secondary schools should be established to serve the 11-16 age range, unless the best option for securing additional post-16 capacity, in response to demographic growth, is identified as the provision of an 11-19 school.
- New schools should have a defined catchment area informed by existing schools' catchment boundaries and the local authority's Sustainable Travel Strategy, which promotes walking and cycling to school.

Subsequent to this, it has been agreed that the local authority should continue to operate without a strict policy on size of secondary school, in order to promote diversity and reflect local circumstances and opportunities. Only in exceptional circumstances should the local authority consider establishing a secondary school smaller than 6 forms of entry (900 places) or larger than 12 forms of entry (1,800 places) for the 11-16 age range.

Existing education provision

That below shows nurseries, primary schools, secondary schools, and sixth forms in the north of Cambridge (excluding private providers). When planning education provision to serve a new community, it is important to ensure proposals compliment, and do not have a detrimental impact on existing schools.

The nearest school to NEC's proposed residential area is Shirley Community Primary School. In terms of secondary school provision, NEC falls within the catchment area of North Cambridge Academy.

Further to the existing provision shown below there are two new secondary schools planned, associated with developments east and north of Cambridge. (More detail is provided on page 19).

Map showing schools and sixth forms in the north of Cambridge.
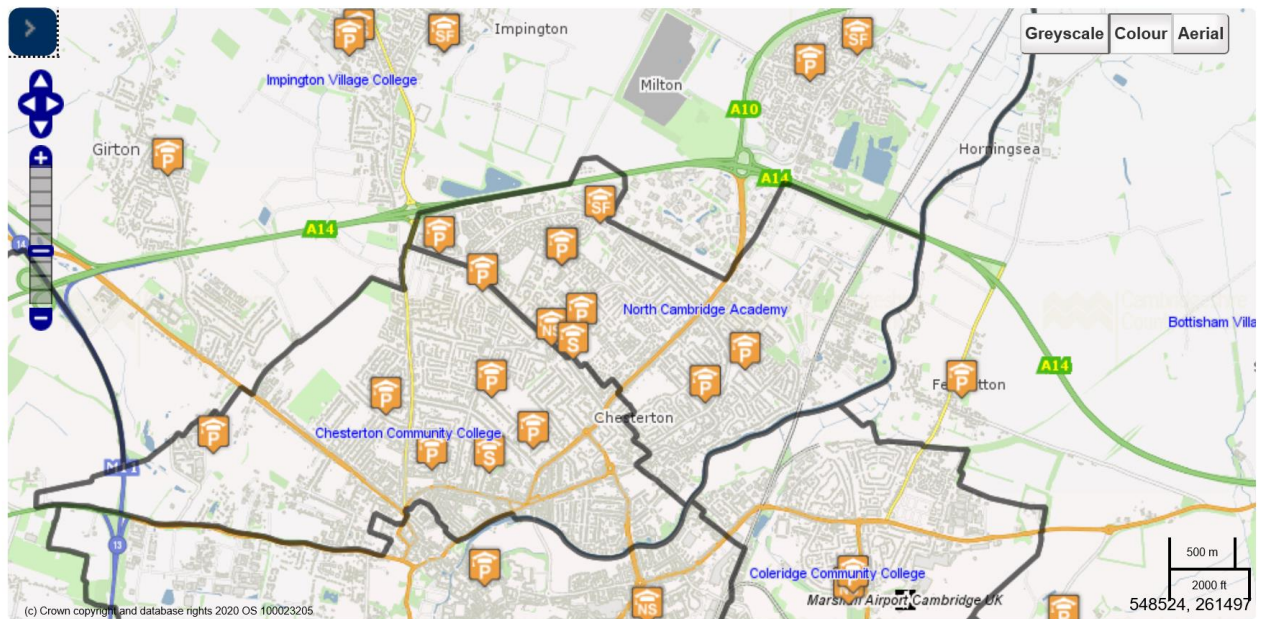
Key
P – Primary School
SC – Secondary School
SF – Sixth Form
NS – Nursery School (State)

　　　- Secondary School catchments

Child Yield Methodology

In order to plan appropriately for new housing developments, the Council provides forecasts of pupil numbers to inform planning for early education and school places. In larger developments the number of school places required may necessitate provision of new schools and sufficient land to accommodate buildings and outdoor space.

Forecasting the number of children that will live in a new development is a complex evidence-led process. The Council's Business Intelligence Service has developed a methodology over many years, based on analysis of census and other population data, local surveys of new developments and administrative data such as the PLASC (census of school pupils). Together, these sources indicate the average number of children that might reasonably be expected in individual properties, depending on the number of bedrooms and tenure.

The multipliers which underpin the methodology to forecast the numbers of children for a given number of new homes were last revised in 2015, and were amended for the primary age range in 2017. It is assumed that per 100 dwellings, there are:

- 20-30 children aged 0-3 (Early Years)
- 30-40 children aged 4-10 (Primary)
- 18-25 children aged 11-16 (Secondary)

Since its approval by members, it has been Council policy to base child yield assumptions on the top end of the range, until a detailed tenure mix is known.

Cambridgeshire's approach to planning and reviewing educational provision has always been guided by two principles; to consider each situation in its local context and to ensure that any proposed changes to provision secure, and wherever possible enhance the quality of educational provision available to children and young people.

Due to the unique aspects of the development at North East Cambridge, an alternative approach to calculating the child yield may be required. Cambridgeshire County Council will need to work in partnership with Cambridge City and South Cambridgeshire District Councils to ascertain the methodology to be used to ensure the most realistic scenario can be achieved.

National Planning Policy Framework (NPPF)

Development Contributions/Planning Obligations

The Council recognises the value of early engagement to enable a clear understanding between all relevant parties of what facilities and infrastructure will be necessary to support the development. Paragraph 34 of the NPPF suggests that as part of this, plans should set out the contributions to be expected to ensure that they can be achieved, without undermining the deliverability of the plan. In addition to this, paragraph 54 of the NPPF suggests that consideration should be given to whether otherwise unacceptable development could be made acceptable through the use of conditions or planning obligations.

Due to the size of the development at North East Cambridge, additional infrastructure will be required to ensure sufficient childcare and education across the 0-19 age range, and for young people up to the age of 25 who have special educational needs or disabilities. The specific details of Section 106 contributions have not yet been formally agreed, but conversations will continue to ensure that appropriate on and off site education infrastructure can be planned.

Promoting healthy and safe communities

Cambridgeshire County Council shares with schools a vision for learning that enables children to grow up as healthy, confident, safe and resilient young people. Chapter 8 of the NPPF advises of the ways in which this can be achieved through the shared aims of policies and decisions throughout the planning process.

The information provided to date indicates plans for a reduced number of cars, and the promotion of more sustainable modes of transport. The Council fully supports this approach and would be keen to ensure that pedestrian and cycle connections are maximised throughout the development so that the schools, and associated facilities, are easily accessible to those within its catchment area, and in neighbouring areas.

Securing Sufficient School Places

As detailed above, the Council has a duty to ensure sufficient school places for children within its area of responsibility. In order to achieve this, the Council feels that a proactive and collaborative approach, as recommended in paragraph 94 of the NPPF, would be most appropriate, and would emphasise the importance of working with nearby schools and a broader range of stakeholders, such as potential sponsors, to resolve any issues as they arise once plans develop.

Promoting Sustainable Transport

The Council has a duty to promote the use of sustainable travel to seek and secure benefits to the school and children. Active travel can help to improve children's health, as well as reduce the level of congestion caused by trips to and from school.

Chapter 9 of the NPFF advises that transport issues should be considered from the earliest stages of plan-making and development proposals. The Council would welcome this approach to ensure that the schools within the development area are well positioned and that opportunities for the site to be accessed via sustainable modes of transport are maximised.

All children between the ages of 5 and 16 qualify for free school transport if they go to their nearest suitable school and live at least two miles away if they are under eight, or three miles from school for children aged eight or over. Some children will also qualify when living under these distances where there is considered to be no available walking route. Providing sufficient school places within the development is therefore essential, as provision of home-to-school transport can incur high costs and should, where possible, be avoided.

Summary

In summary the NPPF seeks to ensure that the delivery of infrastructure including childcare provision, and school places, are well planned, suitably funded and delivered in a timely and sustainable way thereby meeting the needs of both the existing and new community.

Duty to Cooperate

Cross-boundary co-operation is an integral part of the planning system. Under the Localism Act (2011), the 'duty to cooperate' places a legal duty on local planning authorities to engage constructively and actively on strategic cross-boundary matters. This includes the investment in transport and other necessary infrastructure.

The local planning authorities within Cambridgeshire and Peterborough have jointly produced a strategic planning document titled 'The Cambridgeshire and Peterborough Memorandum of Co-operation' (2012), which supports local plan preparation in detailing how the 'duty' has been met.

The local planning authorities are actively planning for new development with the city and district councils by putting in place updated local plans.

North East Cambridge Area Action Plan (AAP): Issues and Options consultation 2019

The table below is a summary of the responses to the AAP Issue and Options 2019 questions as they relate to, or impact on education. A commentary providing further clarification is also included, and should be read in addition to the comments provided previously by Cambridgeshire County Council.

Chapter 6: Place Making		
Issue	**Question**	**Summary of responses**
Creating a Mixed Use City District	12 What uses or activities should be included within the North East Cambridge AAP area which will create a district of culture, creativity and interest that will help create a successful community where people will choose to live and work and play?	A number of responses received show support for the inclusion of education facilities on site of the North East Cambridge development. Schools are an integral part of a community and can provide a sense of 'place'. However, many experience additional challenges when compared to those within existing communities. The Council will work with new school sponsors to mitigate these as far as possible. Where possible, the Council would encourage schools to incorporate the vision of the wider development, and to ensure that the design provides an attractive and inspirational place in which to learn.
Chapter 10: Retail, Leisure and Community Services & Facilities		
Issue	**Question**	**Representation**
Community Facilities	57 What community facilities are particularly needed in the North East Cambridge area?	A number of responses received relate to the importance of providing education on site at North East Cambridge, and specifically refer to the inclusion of a secondary school.

		Taking into consideration the scale of housing development, in terms of the number of homes, and the housing mix which is subject to change, the Council would be in support of the reservation of land suitable for a secondary school. This will enable flexibility to provide either on-site or off-site provision when further detail regarding the child yield is known and will ensure that sufficient secondary school places can be delivered.
	61 Where specific uses are required to provide of open space as part of the development, should the AAP allow for these to be met through multiple shared use (for example school playing fields & playing pitches for the general public)?	Where facilities are to be used by the school and the wider community, there are a number of associated safeguarding concerns. For this reason, the Council would strongly suggest that separate access arrangements are planned and put in place to mitigate the level of risk. There will also need to be early engagement from all parties to ensure that there is a mutually agreed basis on which access to the facilities will be managed. A number of responses received show support for shared use spaces, such as school playing fields and playing fields for the general public. The Council's view is that locating the playing fields on site is essential if they are to be used to their maximum potential; to enhance the school's curriculum and ability to offer extra-curricular provision, as well as for informal use to promote the social and emotional development of pupils. If the playing fields were to be located off-site, there are a number of health and safety issues which would need to be managed. This includes adherance to staff/pupil ratios, and the completion of risk assessments for local walks and activities. As these activities require further planning and higher numbers of staff, it could mean that the fields are not as well utilised as they would be if they were located on the school site. For the reasons set out above, Cambridgeshire County Council would insist that school playing fields are located

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		Taking into consideration the scale of housing development, in terms of the number of homes, and the housing mix which is subject to change, the Council would be in support of the reservation of land suitable for a secondary school. This will enable flexibility to provide either on-site or off-site provision when further detail regarding the child yield is known and will ensure that sufficient secondary school places can be delivered.
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Issue	Question	Representation
		on the school site so that they can be used primarily for educational purposes where appropriate, with managed community access.

Chapter 11: Climate Change & Sustainability

Issue	Question	Representation
Sustainable Design & Construction Standards	63 Do you support the approach to sustainable design and construction standards suggested for the AAP?	A number of responses received show support for the approach to sustainable design and construction standards. A change to the Building Regulations which came into force on 1 January 2019 means that all new buildings owned and occupied by public authorities must be 'Nearly Zero Energy Buildings'. This regulation will come into force for all other new buildings, irrespective of owner or occupier, from 31 December 2020. The County Council's adopted policy position is for new schools to achieve a BREEAM 'Very Good' standard, with aspiration to achieve 'Excellent'. The BREEAM Very Good rating requires a score of ≥55%, with no specific minimum in the Energy category and this standard will no longer guarantee that the Council meets regulatory requirements for energy for new buildings. The County Council will therefore need to set a minimum number of Energy credits to demonstrate compliance with the Regulations such as the approach taken at the new Alconbury Civic Hub, where the building will now achieve 8 BREEAM ENE01 Reduction of Emissions Credits achieving an equivalent BREEAM Excellent rating in energy. In the coming months, the Council will amend its policies and specification to require all new building to be Nearly Zero Energy Buildings (NZEB) and will incorporate a combination of different mechanisms to achieve compliance which could include: • Achieving at least 6 BREEAM energy performance "Ene01" credits; • Designing buildings to achieve an EPC rating of A or better, • Installing on-site renewable energy generation sized to meet

		a significant proportion (>80%) of the building's expected energy use.
Chapter 12: Implementation & Delivery		
Issue	**Question**	**Representation**
Phasing and Relocations	70 Do you agree that the AAP should prioritise land that can feasibly be developed early? Are there any risks associated with this proposed approach?	A number of responses received show support towards the approach to prioritise land that can feasibly be developed early. Cambridgeshire County Council would be keen to ensure that both childcare and education facilities could be delivered early in the development so that they can form a central part of the new community and meet the needs of the earliest occupants. Timescales and trigger points would need to be finalised through pre-application discussions. However, in line with adopted policy, the starting expectation is that the site and financial contrbution would be needed on commencement of the development for initial provision and agreed triggers for further education provision. It is important to avoid reliance on finding places in surrounding schools as this could cause difficulties for families with siblings in different year groups. If all children cannot then obtain a place at the same school, it could have a negative impact on the cohesion of the new community.
Funding and Delivery of Infrastructure	72 Do you agree with an approach of devising a Section 106 regime specifically for the North East Cambridge area? If not, what alternative approach should we consider?	A number of responses received highlight the importance of infrastructure, and its delivery. From an education perspective, the main concern for discussions around Section 106 is ensuring the timely receipt of monies. Failure to secure timely payments could lead to delays in delivery of the school, or the Council needing to undertake prudential borrowing to meet the costs. This has a detrimental impact on wider revenue budgets and Council services. For this reason alternative schemes, such as a tariff, would not be supported by the Council as it would not deliver payments in a timely manner to

	73 What approach do you consider the most appropriate basis on which to apportion the cost of the infrastructure requirements arising from different land uses to ensure an equitable outcome?	meet the cost of infrastructure delivery. From an education perspective, the Council would be supportive of an apportionment of contributions related to the number of dwellings on site. It is accepted that the nature of the development may mean that a more specific mechanism would be required as site wider proposals emerge. The Council is committed to working with all stakeholders to find the most appropriate solution, within the parameters set out above in question 72.

Key Issues - lessons learnt from other sites

Reference	Category	Sub-category	Issue
5.1.01	Community	Facilities	The detailed design of community facilities is very important (e.g. separate access to community facilities from school, ceiling heights in community centre prevent sports use).
5.1.02	Community	Facilities	Making school sports facilities available for community use needs dialogue between partners at an early stage in order to address each others' requirements (e.g., need for schools to uphold safeguarding).

Comments
Schools often have a range of educational, recreational and sporting facilities which can be used to benefit children and their families. Whilst this has a number of benefits, it is essential that it is designed in a way which will meet the needs of both the school, and the community.

Where facilities intended for community use are located in, or adjacent to, the school site, there should be separate access arrangements to uphold safeguarding requirements. Community Use Agreements can also be put in place which outline how they are intended to operate including hours of availability, management arrangements, pricing policy etc. This is an approach supported by Sports England which will help to ensure the facilities can be managed effectively.

Reference	Category	Sub-category	Issue
5.1.11	Community	Facilities	Important not to deliver schools too early in the life of a development. Can otherwise be filled by children from the surrounding area (not from the new development) leaving no room for them when they arrive. Consider interim arrangements for first few years.

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5.1.12	Community	Facilities	Difficulties for large families whose children have to go to 3-4 different schools not in the area as school places aren't where they are needed.
5.1.18	Community	Facilities	Should facilities like schools and retail units be provided for the first residents or when there are sufficient numbers to make them viable?

Comments

It is essential to manage carefully the opening of new schools to ensure that they can serve the earliest residents within the development, without having a detrimental impact upon the schools in neighbouring catchment areas.

In the past where there have been areas of growth, such as in Northstowe and in Alconbury Weald, the Council has opened new schools using a phased approach. This means that the school has opened with a reduced published admission number (PAN) to ensure smaller cohorts until there is an evidenced need to increase the number of places. This has ensured that there is sufficient capacity to meet the needs of children resident within the school's catchment area, without an oversupply of places. This approach also promotes the development of community cohesion by ensuring that there are places at the same school for siblings. The early delivery of schools can also provide a focal point for the new community.

On occasions when the opening of a new school has not been phased, a number of places at the new school quickly filled from children living outside of the school's catchment area, reducing the number of children on roll at local schools. This creates significant financial pressures which can lead to an adverse impact on educational outcomes in these schools.

Reference	Category	Sub-category	Issue
Health & Wellbeing Topic Paper	Early Years and Childcare	Facilities	Important to ensure opportunities for full day care provision are marketed early within the development.

Comments

It is important to ensure opportunities for full day care provision have been planned early within the development, to ensure that parents/carers have access to a broad range of childcare options within the local area; to support parents/carers to return to work or to undertake education or training which could lead to employment.

In the Southern Fringe, it is proving difficult to secure full day care provision early enough to meet the needs of the community. This means that parents are having to travel further to access suitable childcare for their children. This is something which needs to be reflected in the design of early years and childcare provision at new schools as well as for potential delivery through community buildings.

Preferred Approach

As the number of dwellings for the North East Cambridge development is not yet fixed, a range of scenarios have been modelled to show the range in child yield. This is shown in the table below.

Development Scenarios							
Scenario	**Site: C3 dwellings**	**Early Years**		**Primary**		**Secondary**	
		Number of children aged 0-3	**Number of children eligible for funded provision (56%)**	**Number of children aged 4-10**	**Forms of entry**	**Number of children aged 11-16**	**Forms of entry**
Option 1	CSP: 564 CNFE: 8,071 CBP: 0 NRIE: 553 Total: 9,188	2,756	1,545	3,675	17.5	2,297	15.3
Option 2	CSP: 900 CNFE: 4,300 CBP: 0 NRIE: 300 Total: 5,500	1,650	924	2,200	10.5	1,375	9.2
Option 3	CSP: 650 CNFE: 5,600 CBP: 0 NRIE: 400 Total: 6,650	1,995	1,118	2,660	12.7	1,663	11.1
Option 4	CSP: 300 CNFE: 6,800 CBP: 0 NRIE: 500 Total: 7,600	2,280	1,277	3,040	14.5	1,900	12.7
Option 5	CSP: 0 CNFE: 8,140 CBP: 0 NRIE: 560 Total: 8,700	2,610	1,462	3,480	16.6	2,175	14.5
CSP – Cambridge Science Park **CNFE** – Cambridge Northern Fringe East **CBP** – Cambridge Business Park **NRIE** – Nuffield Road Industrial Estate *Child yield calculated using the Council's general multipliers.							

Early Years (0-3): 30 children per 100 dwellings, Primary (4-10): 40 children per 100 dwellings, Secondary (11-16): 25 children per 100 dwellings

The child yield varies significantly in the scenarios which have been modelled in line with the number of homes. Further detail of the housing mix for each scenario can significantly alter the predicted number of children. Most influential is the number of bedrooms within the property. Tenure type can also influence the number of children in a given development. Until precise details of, and a commitment to, a housing mix is made through the planning process, the presumption of a higher child yield using the Council's general multipliers is maintained (as above). This ensures that the Council can safeguard sufficient provision.

The following illustrates how a high level of housing similar to option 5 above, with a high proportion of 1 and 2 bedroom homes and 40% affordable housing (in line with Cambridge City Council and South Cambridgeshire District Council policy), can alter the level of education provision required. (Based on the housing mix in appendix 1)

Scenario	Site: C3 dwellings	Early Years		Primary		Secondary	
		Number of children aged 0-3	Number of children eligible for funded provision (56%)	Number of children aged 4-10	Forms of entry	Number of children aged 11-16	Forms of entry
Option 6	CSP: 0 CNFE: 7,418 CBP: 0 NRIE and other: 978 Total: 8,396	1655	927	1348	6.4	608	4.1

CSP – Cambridge Science Park
CNFE – Cambridge Northern Fringe East
CBP – Cambridge Business Park
NRIE – Nuffield Road Industrial Estate

Land Take Requirements

Early Years

The modelled scenarios 1-5, simply factoring in the number of homes, show that the number of early years children generated by the North East Cambridge development could range between 1,650 and 2,756. However, the tenure mix, as demonstrated above, could result in the child yield being outside of these parameters.

The Council would assume that, as a minimum, 56% of children in the 0-3 age range would be eligible for free childcare and it is on this basis that contributions would be

sought. The range above indicates for scenarios 1-5 that this could be between 924 and 1,545 children eligible for free childcare.

In line with Council Policy, and where there is evidence of demand, new schools will be built with one early years class per form of entry. This means that a 3 form entry school would be expected to have 3 early years class bases, where as a 4 form entry school would be expected to have 4 early years class bases.

In addition to early years and childcare provision on site at the new primary schools, it will be necessary to allocate and market additional sites suitable for full day care provision. This is partly to ensure sufficient places which would not be met by the schools alone, but also to promote choice and for families who are not entitled to funded childcare but still wish to access provision. Where possible, the Council would encourage the co-location of settings to promote partnership working. The Council would also actively encourage developers to provide free plots of serviced land or purpose-built buildings. This would be linked to Section 106 obligations to market sites for early years and childcare providers, in line with the Council's established practice on recent development sites. This would help to increase the level of interest within new developments, and help to ensure quality providers early within the development, in line with the Council's duty to facilitate the market around early years education and childcare provision. The provision of sufficient childcare is critical to enabling parents to return to work or training, which helps promote economic activity.

The Council is also aware that some developers include restrictions on individuals operating a business from private property. Whilst there may be clear justification for this, the Council's view would be to ensure that those offering childcare are exempt from these restrictions. Childminders form an integral part of the childcare market and will often work in partnership with other settings to offer flexible childcare which will be necessary in order to meet the needs of families living within the development.

Primary School Sites

The modelled scenarios 1–5 show that the number of primary aged children generated by the North East Cambridge development could range between 2,200 (10.5 forms of entry) and 3,675 (17.5 forms of entry).

At present, the masterplan shows the location of two primary schools and one co-located with a secondary school. At this stage, the Council considers the location of these schools to be appropriate. The provision of 3 sites would cater for the lower end of the range of provision required based on scenarios 1-5 above. A maximum of 5 sites may be required.

The size of the site required to deliver a primary school, approved at committee, is shown in the table below. The area provided ensures that there is sufficient flexibility for sites to be developed in line with area guidelines provided by the Department for Education, and allows for on-site early years and childcare provision. Whilst the Council recognise that this is a unique site, and that allowances will need to be made for this,

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there will need to be clear reasoning for any request to deviate from its policy for full consideration by members at the relevant committees.

Description	Number of primary school places	Number of Early Years places	Total number of places	Site size (hectares)
2 form entry school with 2 Early Years classes	420	52	472	2.3ha
3 form entry with 3 Early Years classes	630	78	708	3ha
4 form entry with 4 Early Years classes	840	104	944	4ha

As detailed earlier in this paper, the Council would insist that the school playing fields are located on-site.

Secondary School Sites

The modelled scenarios show that the number of secondary aged children generated by the North East Cambridge development could range between 1,375 (9.2 forms of entry) and 2,297 (15.3 forms of entry). It is possible that the child yield could be outside of these parameters subject to the eventual housing mix.

Officers have previously identified that the preferred option would be to seek Section 106 contributions for off-site mitigation in the form of expansion of existing schools to mitigate the impact of the development. There are also two new secondary schools which have been approved to the pre-opening phase of the Free Schools Programme; Cambridge City Free School and Darwin Green, which if opened, would increase the number of secondary school places in the city. However, the opening of these schools is dependent upon a funding agreement between the Secretary of State and the Academy Trust for which there is no guarantee.

Taking into consideration the scale of housing development, in terms of the number of homes and the housing mix which is subject to change, it is suggested that alternative options, including secondary provision on site, are considered.

Officers would therefore be in support of the reservation of land within the North East Cambridge development for a secondary school. This will enable flexibility to provide either on-site or off-site provision. When further detail regarding the child yield is known, a detailed analysis of existing provision will be carried out to determine which approach should be taken.

As stated previously, numerous comments were raised as part of the Issues and Options 2 (2019) Consultation with regards to secondary provision. These show strong support from the community to incorporate a secondary school within the development site.

The site sizes which would be required to provide secondary provision are detailed in the table below. These are based on Building Bulletin 103 requirements. Where these guidelines cannot be met, the Council should be notified at the earliest opportunity with clear reasoning for the request to deviate from policy.

Description	Number of secondary school places	Site size
7FE	1,050	7.7ha
8FE	1,200	8.7ha
9FE	1,350	9.6ha
10FE	1,500	10.6ha

Scenario 6 – Education Requirements

Based on the housing mix shown in Appendix 1, and the policies above the level of education provision required for scenario 6 is shown below. This is for illustrative purposes only and any change to the housing mix may alter the requirements. It is only at a more advanced stage in planning when the housing mix is finalised that the County Council be able to confirm its education requirements, land and contributions.

The currant AAP masterplan provides the number of sites required for scenario 6 with a high proportion of 1 and 2 bedroom homes, and 40% affordable housing.

Early Years (0-3 years of age)			
Number of children aged	Number of children eligible for funded provision (56%)	Number of sites	Land take
1655	927	Factored into Primary School	

As the provision within the primary schools below will not provide for the 927 children, complimentary private provision will also be required. Planning policies to facilitate this (as outlined above) are needed to cater for demand.

Primary (4-10 years of age)			
Number of children aged	Forms of entry	Number of sites	Land Take (Ha)
1348	6.4	3	7.6

Secondary (11-16 years of age)			
Number of children aged	Forms of entry	Number of sites	Land Take
608	4.1	1	N/A

As 4.1 forms of entry would be below the recommended size for a secondary school, it is likely that it would be appropriate to seek contributions towards the expansion of existing schools within the area. This would be reviewed as details emerge.

Mixed-use property

The masterplan shows a site to co-locate a primary and secondary school. There are examples elsewhere in Cambridgeshire of co-located schools including both Northstowe and Chatteris.   The Council would request that the site is sufficient to allow flexibility to be two separate schools run by different sponsors or run by the same sponsor.

There are numerous examples in Cambridgeshire of schools co-locating with community facilities e.g. Sport Centres. The County Council welcomes opportunities to co-locate schools with community facilities, although this is subject to agreement with the school provider.

Officers feel that the inclusion of other uses on the same site e.g. residential property on a separate level to the school, pose challenges including safeguarding risks. However, in acknowledging the unique built environment proposed for North East Cambridge and the need to look more radically at best use of space in a high density development, opportunities could be explored to ensure that the quality of education provision is not compromised. Sharing a site would also be reliant upon the appointment of a suitable sponsor to run the school. For many sponsors, this would not fit with their key principals and could impact upon the number of applicants interested in running the school.

Access arrangements

Schools should also be centrally located and easily accessible to ensure that children and their families can attend them by either cycling or walking rather than through local authority provided transport or car.

All schools would need to have suitable access arrangements for staff and deliveries and it would be beneficial to have these from a secondary street.

Sustainability Appraisal

The table below includes the requirements of the Council in order to meet to objectives detailed within the sustainability appraisal.

Theme	Objectives	Comments
Environmental quality and pollution	Improve air quality and minimise or mitigate against sources of environmental pollution.	Schools should be centrally located to ensure that they are accessible to all members of the community that they serve.This will also help to promote more sustainable forms of
Economy and Infrastructure	Reduce the need to travel and promote more	

	sustainable transport choices.	transport and avoid reliance on the use of cars. They should also be located in areas of lower air pollution.
	Improve the quality, range and accessibility of services and facilities (e.g. health, transport, education, training, leisure opportunities)	Where a number of schools are required, these should fairly evenly distributed to ensure that they accessible for all residents within the local community, and to minimise the level of congestion as a result of trips to and from school.
	Support appropriate investment in people, places, communications and other infrastructure	

Appendix 1

Scenario 6: Detailed Housing Mix (Source Shared Planning)

Residential Mix								
Area	**Total C3**	**1 Bed Flat**	**2 Bed Flat**	**3 Bed Flat**	**4 Bed Flat**	**2 Bed House**	**3 Bed House**	**4 Bed House**
A1	180	52	119	9	0	0	0	0
A2	158	46	104	8	0	0	0	0
B	239	69	158	12	0	0	0	0
C	73	21	48	4	0	0	0	0
D	422	143	165	89	25	0	0	0
E	101	29	67	5	0	0	0	0
F	266	96	157	13	0	0	0	0
G	84	30	49	4	0	0	0	0
H	880	237	396	0	0	0	167	79
I	540	102	251	137	16	0	10	24
J	728	247	284	153	44	0	0	0
K	536	145	241	0	0	0	102	48
L	623	206	249	156	12	0	0	0
M	710	234	284	177	14	0	0	0
N	344	114	138	86	7	0	0	0
O	1,078	248	657	172	0	0	0	0
P	125	41	50	31	3	0	0	0
S	163	54	65	41	3	0	0	0
T	172	57	69	43	3	0	0	0
U	632	133	297	54	11	0	93	44
V	228	54	105	11	2	0	38	18
W	118	9	66	33	9	0	0	0
Total	**8,399**	**2,367**	**4,019**	**1,238**	**151**	**0**	**410**	**213**
As a %		**28%**	**48%**	**15%**	**2%**	**0%**	**5%**	**3%**

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Appendix C4: Housing Topic Paper

Introduction

This topic paper covers the main policies, evidence and lessons learnt from elsewhere to help inform the provision of new homes on the North East Cambridge development, and a summary of the responses to housing related questions raised through the 2019 Issues and Options consultation. It identifies key issues to be considered when planning for those new homes, and makes recommendations around future policy development.

The current vision for the North East Cambridge Area Action Plan is for an "inclusive, walkable, low-carbon new city district with lively mix of homes, workplaces, services and social spaces, fully integrated with surrounding neighbourhoods".

As the Issues and Options report makes clear, well considered placemaking, of which housing is an essential component, will be key to achieve this vision.

The draft AAP makes provision for at least 8,000 homes within the North East Cambridge area. Area Action Plan policies need to detail how housing can deliver significant value to the new communities at North East Cambridge by ensuring that contributes to meeting housing need and is of high-quality design, sustainable, liveable, and inclusive.

Key Evidence Documents

- [Cambridge sub-region housing market bulletins](#)
- [Government Valuation Office private rental statistics](#)
- [Local Housing Allowance rates](#)
- [Research report to Greater Cambridge Partnership: Detailed affordability analysis, Cambridge and South Cambridgeshire,](#) Savills, June 2017
- [Diamond affordability analysis: A new way of looking at income, housing cost and housing supply, Cambridge City and South Cambridgeshire District councils, for the Greater Cambridge Partnership, June 2018:](#)
- Laing-Buisson 2018, from [Age UK Later in Life in the United Kingdom 2019](#)

- [Older People's Care & Support Needs in Cambridge 2017-2036,](#) Sheffield Hallam University and Centre for Regional Economic & Social Research
- [Cambridgeshire & West Suffolk specialist housing needs](#), Cambridgeshire County Council Research Group Autumn 2019
- [Cambridgeshire County Council Research Group population estimates and forecasts](#)
- Home-Link housing applicant data
- Help to Buy housing applicant data
- Local self-build and custom build register data
- Private Rented Sector (Build to Rent) research – national and emerging local
- Tenure integration in housing developments – a literature review, NHBC, 2016
- [Place Alliance, A Housing Design Audit for England](#)
- Health & Wellbeing topic paper
- Anti-poverty topic paper
- Climate Change, Energy and Sustainable Design topic paper
- Community safety topic paper
- Internalisation topic paper

National Planning Policy Framework

Paragraph 8 of the National Planning Policy Framework aims to ensure that a sufficient number and range of homes can be provided to meet the needs of present and future generations.

Paragraph 60 requires strategic policies to be informed by a local housing need assessment, using the standard National Planning Policy Guidance methodology, unless exceptional circumstances justify an alternative approach.

Paragraph 61 states that the size, type and tenure of housing needed for different groups in the community should be assessed and reflected in planning policies. Groups include, but are not limited to: those requiring affordable housing; families with children; older people; students; people with disabilities; service families;

travellers[1]; people who rent their homes; and people wishing to commission or build their own homes. Older people and people with disabilities are defined within the National Planning Policy Framework glossary at Annex 2.

Affordable housing is defined in the National Planning Policy Framework glossary at Annex 2: as 'housing for sale or rent, for those whose needs are not met by the market (including housing that provides a subsidised route to home ownership and/or is for essential local workers); and which complies with one or more of the following definitions…' i.e. affordable housing for rent; starter homes; discounted market sales housing, and other affordable routes to home ownership.

Under Paragraph 62, where a need for affordable housing is identified, planning policies should specify the type of affordable housing required (based on National Planning Policy Framework definitions), and expect it to be met on-site unless there is robust justification otherwise.

Under Paragraph 64, on major developments, except where specified exemptions apply, at least 10% of the homes are expected to be available for affordable home ownership, 'unless this would exceed the level of affordable housing required in the area, or significantly prejudice the ability to meet the identified affordable housing needs of specific groups'. [2]

The 'Agent of Change' principle under Paragraph 182 establishes a responsibility for new developments to mitigate impacts from existing noise-generating activities; which is especially important for noise-sensitive development such as housing. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.

Engagement

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[1] [Planning Policy for Traveller Sites 2015](), Annex 1 defines gypsies and travellers as 'Persons of nomadic habit of life whatever their race or origin, including such persons who on grounds only of their own or their family's or dependants' educational or health needs or old age have ceased to travel temporarily, but excluding members of an organised group of travelling showpeople or circus people travelling together as such.

[2] Major developments are defined in the National Planning Policy Framework, Annex 2 as: where 10 or more homes will be provided; or a site area of 0.5 hectares or more.

The Area Action Plan process has recognised that development at North East Cambridge will have an impact beyond the site boundary and is engaging stakeholders constructively, actively and on an ongoing basis. There are a number of studies relating to housing issues that are ongoing and will inform the new Greater Cambridge Local Plan, but will also be considered as is appropriate for the AAP as it continues through its process.

A Housing Mix assessment examining the housing needs of different groups in the community is being carried out jointly between all the Cambridgeshire districts and West Suffolk. An additional joint study, on the need for private rented sector housing, is being carried out between Cambridge City Council, South Cambridgeshire District Council and West Suffolk.

An assessment of the accommodation needs of Gypsies, Travellers, Travelling Showmen, Bargee Travellers and other caravan and houseboat dwellers is being carried out. This involves the five Cambridgeshire Districts (including Cambridge City and South Cambridgeshire), Peterborough, West Suffolk and King's Lynn & West Norfolk.

The viability assessment and infrastructure delivery plan for the AAP are being conducted together as part of the study that will support the Greater Cambridge Local Plan.

Landowners within the Area Action Plan area are also being regularly engaged through a monthly 'Landowners Forum', and key developers and members of the local community formed part of a series of design workshops to co-design the emerging spatial framework.

Background/Context/Relevant Data/Corporate Council Objectives and Strategies

Background

Cambridge and South Cambridgeshire 2018 Local Plans identify the need for 33,500 new homes across Greater Cambridge (i.e. the area covered by the two local authorities) between 2011 and 2031.

There are high levels of housing need across Greater Cambridge, and housing affordability is a major issue. New homes, including affordable housing are a high priority for both councils.

There is a strong history of the two authorities working together in bringing forward development on urban fringe sites.

Cambridge City Council owns some of the land at North East Cambridge and intends to pursue direct delivery of homes on that land.

Data

Data: Overall number of homes required

Cambridge City and South Cambridgeshire's current Local Plans are based on the need identified for 33,500 new homes across Greater Cambridge. The adopted Local Plans place no reliance on development at North East Cambridge due to the uncertainties at that time over the relocation of the Water Treatment Plant. The Local Plans are subject to early review that is already underway. Whilst the overall future needs of the area will be defined through the new Greater Cambridge Local Plan, building on the 2018 Local Plan policies for North East Cambridge (called Cambridge Northern Fringe East in those plans) it is reasonable to consider at this point that the new homes planned for North East Cambridge can make an important contribution to meeting long term housing requirements in Greater Cambridge.

Data: Population forecast

Table 1 below shows that the overall population of Greater Cambridge is expected to increase considerably during the period of the current 2018 Local Plans. It shows a 16.5% increase in Cambridge from 2016 to 2031, and a 23.9% increase in the same time period for South Cambridgeshire in the same period, representing a 19.5% change overall in Greater Cambridge.

Table 1: Forecast increase in population 2016 to 2031

	2016	2031	Increase	% increase
Cambridge City	134,080	156,240	22,160	**16.5%**
South Cambridgeshire	155,660	192,840	37,180	**23.9%**
Greater Cambridge	**304,160**	**358,290**	**59,340**	**19.5%**

Data: Housing costs and affordability

Tables 2 & 3 below show Greater Cambridge as an area of high housing costs relative to other parts of England. House prices have risen dramatically over the last ten years and since the Councils' respective Affordable Housing Supplementary Planning Documents were published. The ten year average house price percentage increase between 2009 and 2019, is shown to be 71% for Cambridge City and 80% in South Cambridgeshire.

Table 2: Average house prices at September 2009 and October 2019

	September 2009 average (mean)	October 2019 average (mean)	Ten year increase	Ten year percentage increase
Cambridge City	£296,031	£507,197	£211,166	71%
South Cambridgeshire	£244,794	£440,451	£195,657	80%
East of England	not avail	£352,532	not avail	not avail
England	not avail	£320,005	not avail	not avail

Source: Cambridge sub-region housing market bulletins, from Hometrack, based on sales and valuations

Lower quartile house prices also increased in Greater Cambridge as the table below shows with Cambridge City and South Cambridgeshire increasing by 26% and 27% respectively. This is considerably higher compared to the England average of 15%, but slightly lower than the average for East of England which saw a 32% rise.

Table 3: Lower quartile house prices at September 2014 and October 2019

	September 2014 average (mean)	October 2019 average (mean)	Five year increase	Five year percentage increase
Cambridge City	£265,000	£335,000	£70,000	26%
South Cambridgeshire	£230,000	£293,000	£63,000	27%
East of England	£165,000	£217,500	£52,500	32%
England	£143,500	£165,000	£21,500	15%

Source: Cambridge sub-region housing market bulletins, from Hometrack, based on sales and valuations. 10 year comparison not available

Rents are also high, and Local Housing Allowance rates, on which housing related benefits for tenants renting privately are based, until recently, were nowhere near enough to cover even lower quartile rents in Greater Cambridge. They were raised from April 2020/21 in response to the Covid-19 crisis, although the council understands that these will remain in place until March 2021 and there are currently

no plans to reduce them again in future (although that may change). See tables 4 & 5 below.

This has gone some way to close the gap in Cambridge City. For South Cambridgeshire, rates for most property sizes are now higher than lower quartile rents in the district.

The table below shows the average monthly private rents for Cambridge City (£1,225) and South Cambridgeshire (£1,012) being considerably higher than the East of England (£863),and England average (£858). This is also true for the lower quartile average rents that are £925 and £825 for Cambridge City Council and South Cambridgeshire Council respectively compared to a £625 average for East of England and £525 average for England.

Table 4: Monthly average private rents April 2018 to March 2019

	Average (mean)	Lower quartile
Cambridge City	£1,225	£925
South Cambridgeshire	£1,012	£825
East of England	£863	£625
England	£858	£525

Source: Valuation Office private rental market statistics

Table 5: Monthly lower quartile private rents by size, compared with monthly equivalent Local Housing Allowance

The table below shows how the local housing allowance has increased across the board from 2019-2020 to 2020-2021 in both Cambridge City and South Cambridgeshire for all sizes of property.

	Cambridge City	South Cambridgeshire	Local Housing Allowance 2019-2020	Local Housing Allowance 2020-2021
Room	£450	£470	£349.88	£421.49
Studio	£725	£495	£564.14	£775.02
1 bed	£850	£695		
2 beds	£1,075	£825	£648.79	£850.02
3 beds	£1,230	£950	£753.90	£950.00
4 beds+	£1,600	£1,200	£1,005.66	£1300.01

Source: Valuation Office private rental market statistics April 2018 to March 2019; and Local Housing Allowance rates 2019 to 2020 and 2020 to 2021 (monthly equivalents)

Data on changes to Local Housing Allowance levels is also relevant in terms of decisions on the level at which to cap affordable rents. Tables 6 & 7 below show that LHA rates are now considerably closer to median market rents. This is particularly so for South Cambridgeshire where rates are now over 80% of median rents for all sizes of property from 1 to 4 bedrooms.

The table below shows how the local housing allowance rate in Cambridge City compares to median market rents across different home sizes as measured by bedrooms. This shows the local housing allowance rate in 2020/21 as being 62% of median market rent for 1 bed, 67% for 2 bed, 65% for 3 bed and 68% for 4 bed, all representing increases compared to 2019-2021.

Table 6: Weekly Local Housing Allowance Rates 2020-2021 compared with median market rents: Cambridge City

	2019/20 LHA rate	New 2020/21 LHA rate	Increase 2019/20 to 2020/21	% increase 2019/20 to 2020/21	Cambridge median weekly rent	2019/20 LHA rate as a % of median market rent	New 2020/21 LHA rates as a percentage of median market rent
1 bed	£135.99	£178.36	£42.37	31%	£219.00	62%	81%
2 bed	£156.40	£195.62	£39.22	25%	£294.00	53%	67%
3 bed	£181.75	£218.63	£36.88	20%	£334.00	54%	65%
4 bed	£242.43	£299.18	£56.75	23%	£438.00	55%	68%

Source: Hometrack

Table 7: Local Housing Allowance Rates 2020-2021 compared with median market rents: South Cambridgeshire

The table below shows how the local housing allowance rate in South Cambridgeshire compares to median market rents across different home sizes as measured by bedrooms. This shows the local housing allowance rate in 2020/21 as being 100% of median market rent for 1 bed, 92% for 2 bed, 86% for 3 bed and 88% for 4 bed, all representing increases compared to 2019-2021.

	2019/20 LHA rate	New 2020/21 LHA rate	Increase 2019/20 to 2020/21	% increase 2019/20 to 2020/21	Median weekly rent	2019/20 LHA rate as a % of median market rent	New 2020/21 LHA rates as a percentage of median market rent
1 bed	£133.72	£178.36	£44.64	33%	£178.00	75%	100%
2 bed	£153.79	£195.62	£41.83	27%	£211.00	72%	92%
3 bed	£178.71	£218.63	£39.92	22%	£253.00	71%	86%
4 bed	£238.38	£299.18	£60.80	26%	£340.00	70%	88%

Source: Hometrack

Local affordability analysis [3] estimates that across Greater Cambridge some 35% of households are on incomes of less than £30k; the group for whom social/affordable rent housing would be the most realistic option in terms of affordability, if there was sufficient supply.

The analysis also identifies that around 26% of households in Greater Cambridge are on incomes of £30K to £50K; the group which might be expected to be able to afford low-cost affordable housing other than social/affordable rent housing. For these households much of the housing supply comes from the private rented sector – often the only available options for people in the middle of the market, although affordability is often a barrier. Shared ownership, although in relatively short supply, also contributes to this zone in the housing market.

Data: Need for affordable housing

Table 8 below demonstrates high levels of need for social/affordable rent housing compared with annual supply. The highest need in recent years has been for smaller homes – one bedroom, followed by two bedrooms.

Table 8: Applicants on Home-Link housing register by property size required

	Cambridge City		South Cambridgeshire	
	No of applicants on register	No of lettings 2018-19	No of applicants on register	No of lettings 2018-19
1 bedroom	1,136	216	833	215
2 bedrooms	608	243	595	237
3 bedrooms	248	71	225	107
4+ bedrooms	44	10	75	22
Total	**2,039**	**540**	**1,728**	**581**

Source: Home-Link data from Locata, October 2019. Includes all applicants with status of live, pending, offered and nominated.

Tables 9 & 10 below show there is also high demand for housing through Help to Buy, (low cost affordable housing other than social/affordable rent housing) with the highest demand for one to two bedroom properties.

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[3] Diamond Affordability Analysis for Greater Cambridge 2018

Table 9: Help to Buy applicant households living in and wanting to remain living in Greater Cambridge

The table below shows that there were a total of 805 help to buy applicants living in Greater Cambridge and wanting to live there, this was split between 478 for 1-2 beds, 188 for 2-3 beds, 113 for 3-4 beds, and 26 for 4-6 beds.

Bedroom entitlement	No of applicants
1-2 beds	478
2-3 beds	188
3-4 beds	113
4-6 beds	26
Total number of applicant households	**805**

Source: Help to Buy East & South East, October 2019

Table 10: Help to Buy applicant households working in and wanting to live in Greater Cambridge, October 2019

The table below shows that there were a total of 595 help to buy applicants working in Greater Cambridge and wanting to live there, this was split between 330 for 1-2 beds, 164 for 2-3 beds, 83 for 3-4 beds, and 18 for 4-6 beds.

Bedroom entitlement	No of applicants
1-2 beds	330
2-3 beds	164
3-4 beds	83
4-6 beds	18
Total number of applicant households	**595**

Source: Help to Buy East & South East, October 2019

Data: Need for Purpose Built Private Rented Housing

Research has been commissioned to identify the potential need for purpose built Private Rented Sector housing across Greater Cambridge and more specifically at North East Cambridge.

In the meantime, a brief summary of some of the research previously available is attached at Annex 1 to this topic paper.

Data: Need for housing for older people

As shown in the table below, the older population is expected to increase nationally, and particularly in South Cambridgeshire. Table 11 below shows the over-65

population is expected to increase by around 46% over the period 2016 to 2031; by 44% in Cambridge and 47% in South Cambridgeshire. The largest percentage increase is likely in the number of people aged 85 and over, although the greatest numerical increase is expected in the 75-84 age group. By 2031, over 65s are expected to make up nearly 1 in 5 of the Greater Cambridge population.

Table 11: Forecast change in over-65 population 2016 to 2031

	Cambridge City				South Cambridgeshire			
	2016	**2031**	**Increase**	**% increase**	**2016**	**2031**	**Increase**	**% increase**
65-74	8,220	10,800	2,580	**31%**	16,440	20,470	4,030	**25%**
75-84	5,130	7,790	2,660	**52%**	9,020	15,130	6,110	**68%**
85+	2,850	4,720	1,870	**66%**	4,100	7,840	3,740	**91%**
All 65+	**16,200**	**23,310**	**7,110**	**44%**	**29,560**	**43,440**	**13,880**	**47%**

Source: Cambridgeshire County Council 2015 based population forecasts

The number of people living in specialist retirement housing or in care homes is relatively low, with most older people living in their own homes. It is estimated nationally that around 410,000 people in the UK currently live in care homes. [4]

Data: Need for housing for local workers
There is growing interest from local businesses and their representatives in gaining a better understanding of the housing needs of people working in the Greater Cambridge area. For example, Cambridge University Hospitals has been conducting some research into the housing needs of its workers, and Cambridge Ahead is also carrying out some work on housing needs of local workers.

Data: Need for specialist housing for people with disabilities
During 2018/19, Cambridgeshire County Council Research Group undertook a review of specialist housing needs for people with disabilities across the sub region. This research has used population and prevalence estimates to create a model to forecast future need, based on current provision.

The table below details the findings, which indicate that for South Cambridgeshire and Cambridge City there may be a future need of 47 additional specialist units across the area up to 2036.

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[4] Laing-Buisson 2018, from Age UK Later in Life in the United Kingdom 2019

Table 12: Greater Cambridge specialist housing requirements (disability – working age)

Disability client group	Number of units required across Greater Cambridge up to 2036
Learning disability	7
Mental health	29
Physical disability	5
Autism	6
Total	**47**

Source Cambridgeshire County Council Research Group 2019

This assumes 'business as usual' in terms of future care provision and acts as a starting point to inform the level of future need. Further work is required to establish the future direction of travel for services for different disability client groups, including the extent to which services may continue to be provided in specialist schemes as opposed to supporting people in mainstream housing.

Data: Need for Gypsy & Traveller accommodation
An assessment of accommodation needs for Gypsies & Travellers is currently under way that will inform the Greater Cambridge Local Plan but on hold due to Covid-19 issues.

Data: Demand for self/custom build housing
Local authorities are required to keep a register of those seeking to acquire serviced plots in the area for self-build and custom house building. [5]

Since the register started, around 600 applicants have been registered as having in interest in self and/or custom build housing across Cambridge City and South Cambridgeshire and approximately 450 related units have been granted planning permission.

Data: Demand for community led housing
Work commissioned by the two councils from CLT East[6] has identified at least four groups looking to build their own homes in the Greater Cambridge area through community-led housing models.

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[5] Self Build and Custom Housebuilding Act 2015
[6] CLT East now part of East Cambridgeshire Trading Company Limited

Corporate Strategies and Plans

Vision and objectives

Cambridge City Council's vision is to lead a united city, 'One Cambridge - Fair for All', in which economic dynamism and prosperity are combined with social justice and equality. [7] The aim is for Cambridge to be a place which is: fair for all; a great place to live, learn and work; and one that cares for the planet. The council's Corporate Plan is based on five main themes:

- Helping people in Cambridge who have the greatest need;
- Planning for growth and ensuring our new communities are successful;
- Protecting our environment and tackling climate change;
- Delivering quality services within financial constraints; and
- Developing effective partnerships and an innovative and dynamic organisation.

South Cambridgeshire District Council's Business Plan 2019-2024[8] is about putting the heart into the District by:

- Building homes that are truly affordable to live in – by building vibrant communities in locations where people have good access to facilities and transport links, so they can genuinely afford to live a happy and healthy life.
- Helping business to grow – by supporting businesses of all sizes, including rural enterprises and farming, to help create new jobs and opportunities near to where people live
- Being green to our core – we will create a cleaner, greener and zero-carbon future for our communities; and
- Being a modern and caring Council – we will provide our customers with high-quality services, strive to reduce costs, build on what we are good at to generate our own income and make decisions in a transparent, open and inclusive way.

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[7] Cambridge City Council Corporate Plan
[8] South Cambridgeshire District Council Business Plan 2019-2024

Greater Cambridge Housing Strategy 2019-2023[9]

The Greater Cambridge housing strategy, published in spring 2019 has been developed between Cambridge City and South Cambridgeshire District Councils within the context of wider council objectives. It shows how both councils aim to meet the housing challenges facing the area, setting out key priorities for action.

Part of the role of the strategy is to complement the councils' Local Plans to help inform planning decisions required to be made separately by each council, as well as joint decisions around development on major fringe sites which straddle the two districts' boundaries. It is a material consideration in making planning decisions.

The Strategy underpins this topic paper, providing further evidence and details on the housing need for the area.

Annex 5 of the strategy provides more detail on the councils' requirements around the delivery of new homes, including requirements around housing to meet different needs.

Other relevant strategies and plans

These include Cambridge City's Climate Change Strategy and Carbon Management Plan 2016-2021, Anti-Poverty Strategy 2017-2020 (currently under review), and the Cambridge Sustainable Housing Design Guide.

Cambridge and South Cambridgeshire Local Plans and other related planning documents

- Cambridge City Local Plan 2018
- Cambridge City Council Affordable Housing Supplementary Planning Document 2008
- South Cambridgeshire Local Plan 2018
- South Cambridgeshire Affordable Housing Supplementary Planning Document 2010
- Greater Cambridge Housing Strategy 2019-23 and annexes

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[9] Greater Cambridge Housing Strategy 2019-2023 and annexes

- [Greater Cambridge Design & Construction Supplementary Planning Document](#)

Local planning requirements: Overall dwelling mix

Cambridge Local Plan Policy 45 states that developments should include a balanced mix of dwelling sizes (measured by the number of bedrooms in each dwelling), types and tenures to meet projected future household needs. The mix of dwellings and tenure types shall have regard to the differing needs for different unit sizes of affordable housing and market housing.

South Cambridgeshire Local Plan Policy H/9 states that a wide choice, type and mix of housing will be provided to meet the needs of different groups in the community including families with children, older people, those seeking starter homes, people wishing to build their own homes, people seeking private rented sector housing, and people with disabilities.

For South Cambridgeshire, the market homes in developments of 10 or more homes will consist of at least: 30% 1 or 2 bedroom homes; 30% 3 bedroom homes; and 30% 4 or more bedroom homes; with a 10% flexibility allowance that can be added to any of these categories taking account of local circumstances. This requirement is subject to the housing mix of affordable homes (except starter homes) in all developments being determined by local housing needs evidence. The required housing mix will not apply to developments including specialist housing for older people (with or without care).   (SCDC policy H/9).

Local planning requirements: Space standards

Cambridge Local Plan policy 50 and South Cambridgeshire Local Plan policy H/12 specify that residential units need to meet the internal residential space standards set out in the Government's Technical Housing Standards – nationally described space standard (2015).

For Cambridge City all new residential units are expected to have direct access to an appropriate area of private amenity space, based on specified criteria.

Local planning requirements: Accessible housing

Cambridge Local Plan policy 51 requires all homes to be built to level M4(2) of the adaptable and accessible building standard with 5% of the affordable housing to be built to wheelchair accessibility standards. The council encourages developers to build wheelchair accessible market homes, as well as affordable. (Cambridge Local Plan paragraph 6.38)

For South Cambridgeshire the policy is for 5% of homes in a development to be built to level M4(2). This provision is to be split evenly between the affordable and market homes in a development. (Local Plan policy H/9).

Local planning requirements: Affordable Housing

Cambridge Local Plan policy 45 and South Cambridgeshire Local Plan policy H/10 set minimum affordable housing requirements on new developments as shown at table 13 below

Table 13: Local Plan minimum numbers of affordable homes required on residential developments

The table below shows that the level for minimum affordable housing requirements in Cambridge City ise, 25% for sites of 11-14 units, and 40% on sites of 15 or more units, whereas in South Cambridgeshire it is 40% of homes for all sites of 11 or more units.

Local Plan	Minimum affordable housing requirement
Cambridge City	25% of homes on sites of 11-14 units
	40% of homes on sites of 15 or more units
South Cambridgeshire	40% of homes on sites of 11 or more units

Cambridge City and South Cambridgeshire Local Plans 208

Where a developer considers that meeting the required affordable housing percentage will be financially unviable, both councils require robust evidence to support any such claim.

Under paragraph 33 of Cambridge City's Affordable Housing Supplementary Planning Document 2008, the City Council resolves to achieve 75% social/affordable rent housing on qualifying sites in accordance with the council's Housing Strategy, unless overall evidence of need indicates otherwise.

Paragraph 3.14 of South Cambridgeshire's Affordable Housing Supplementary Planning Document 2010 refers to 75% rent and 25% intermediate housing as the starting point for negotiations on the urban fringes of Cambridge, in alignment with Cambridge City's approach.

Local planning requirements: Housing for local workers

Cambridge Local Plan paragraph 6.7 allows the possibility of employers providing housing specifically for their employees as part of schemes for employment development, subject to evidence of need. Affordable housing requirements will apply to such schemes.

There is no reference in the South Cambridgeshire Local Plan to housing for local workers.

The approach in the councils' Affordable Housing Supplementary Planning Documents (in relation to key workers) has been largely superseded by the Greater Cambridge Housing Strategy approach. (See below).

Local planning requirements: Self & custom-build housing

South Cambridgeshire Local Plan Policy H/9 states that on all sites of 20 or more dwellings, and in each phase of strategic sites, developers will supply dwelling plots for sale to self and custom builders. Exceptionally, no provision will be expected in developments or phases of developments which comprise high density multi-storey flats and apartments.

There is no specific policy relating to self and custom build housing in the Cambridge Local Plan.

Local planning requirements: Student housing

Cambridge City Local Policy 46 states the circumstances in which new student housing will be permitted. This states that Cambridge intends to deliver accommodation to address the identified future growth aspirations of the institutions and to provide additional flexibility with around 3,104 units to 2026.

The Local Plan process will need to review and update the planned growth for the Universities beyond 2026.

Local planning requirements: Housing in multiple occupation

Cambridge Local Plan policy 48 supports proposals for large houses in multiple occupation (sui generis) where the proposal meets certain criteria, including not creating an over-concentration of such use in the area, not causing harm to residential amenity or the local area, and appropriate management arrangements being in place.

Local planning requirements: Gypsy and Traveller accommodation

Cambridge City Policy 49 provides a set of site criteria against which applications for permanent, transit and emergency stopping provision for Gypsies & Travellers will be considered. Should an up to date needs assessment indicate there is a need, then opportunities to deliver sites for Gypsies and Travellers will be sought as part of significant major development sites.

South Cambridgeshire Local Plan Policy H/20 requires provision to be made for at least 11 plots for Travelling Showpeople between 2011 and 2031, based on the most recent local Gypsy & Traveller Accommodation Assessment.

Under South Cambridgeshire Local Plan Policy H/21, if need is identified, opportunities to deliver Gypsy and Traveller sites will be sought as part of large scale new communities and significant major development sites. The need and opportunities should be kept under review through the planning of future phases of such developments as they come forward. Sites provided on such sites must meet specified criteria.

Local planning requirements: Other specialist housing

Cambridge City Local Plan Policy 47 applies to specialist housing, including: sheltered housing; residential care and nursing homes; extra-care housing; shared homes; cluster units; respite, rehabilitation and convalescent accommodation; and hostel accommodation. Provision must be supported by evidence of need, and: suitable for the intended occupiers; accessible to local shops, services appropriate

community facilities and public & sustainable transport; and in a location that avoids excessive concentration of such housing within any one street or small area.

For both councils, where the development falls within use class C3 (dwelling houses)[10], the development will be expected to contribute to the supply of affordable housing. (Cambridge Local Plan policy 47, and South Cambridgeshire Affordable Housing Supplementary Planning Document 2010 paragraph 3.35).

Local planning requirements: Design of affordable housing

The affordable housing should not be visually distinguishable from market housing by its external appearance. Regard should also be had to the Councils' Sustainable Design and Construction Supplementary Planning Document. Impact on service charge levels needs to be taken into account (Cambridge City Affordable Housing Supplementary Planning Document 2008 paragraphs 25, 26, 27 & 28).

South Cambridgeshire's requirements are that affordable housing should be visually indistinguishable from market housing, and developers should avoid design that results in high service charges. (South Cambridgeshire Affordable Housing Supplementary Planning Document 2010, paragraphs 3.27 & 3.28).

Local planning requirements: Distribution of affordable housing

There is no reference to how affordable housing is to be distributed in the Cambridge Local Plan, but paragraphs 23-24 of the Cambridge City Affordable Housing Supplementary Planning Document 2008 refer to integrating affordable and supported housing with open market housing in ways that minimise social exclusion, avoiding tenure monocultures. Clustering is described as the 'usual approach' to affordable housing distribution with clusters normally expected to be between 6 & 25 dwellings. In flatted schemes no more than 12 affordable dwellings should normally have access from a common stairwell or lift. The affordable housing should be provided in prominent parts of a site to aid integration.

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[10] The Town & Country Planning (Use Classes) Order 1987 defines use class C3 development as:
Use as a dwelling house (whether or not as a sole or main residence) —
(a) by a single person or by people living together as a family, or
(b) by not more than 6 residents living together as a single household (including a household where care is provided for residents).

South Cambridgeshire Local Plan Policy H/10 requires that affordable housing be provided in small groups or clusters distributed through the site.

North East Cambridgeshire Area Action Plan Issues and Options Report 2019: questions and representations received

Responses to Issues and Options questions: Housing mix

- **Question 38: Should the Area Action Plan require a mix of dwelling sizes and in particular, some family sized housing?**

There was generally a positive response around having a good housing mix, to provide choice & affordability, and create a mixed, balanced and sustainable community. The need for family sized and private rented sector housing were raised. Other responses included: the importance of an evidence based approach; the need for innovation to achieve required densities; opportunities for people to live nearer to where they work; and the importance of design.

- **Question 39: Should the Area Action Plan seek provision for housing for essential local workers and/or specific housing provided by employers (i.e. tethered accommodation outside of any affordable housing contribution)?**

Most responses were positive. Views included: the importance of being able to both live and work in the neighbourhood to reduce the need for commuting; and the need for housing that is affordable to lower paid 'key workers'. However, viability was raised as a concern.

Responses to issues and options questions: Affordable housing

- **Question 40: Should the Area Action Plan require 40% of housing to be affordable, including a mix of affordable housing tenures, subject to viability?**

Most respondents felt that provision of affordable housing was important.

Some emphasised the need for this to be subject to viability; others were concerned about developers using the viability argument to avoid provision, and the need for the council to enforce the affordable housing requirement.

The private rented sector was mentioned as an area where a different approach might be needed other than providing traditional on-site affordable.

Other responses included: social housing should be provided elsewhere; 40% affordable housing should be applied to site as a whole, subject to viability; the need for social housing for local families; the need for affordable housing for science park workers; need for affordable housing to be genuinely affordable; and the need for an overarching long term vision in relation to affordable housing.

- **Question 41: Should an element of the affordable housing provision be targeted at essential local workers?**

Responses were overall supportive. Comments included: a need for decisions in this area, including whether housing should be tethered to employment, to be based on evidence; need for people to be able to live and work locally; and housing should be genuinely affordable and available to lower paid and local workers, including those on the housing register.

Responses to issues and options questions: Custom & self-build housing

- **Question 42: Should the Area Action Plan require a proportion of development to provide custom build opportunities?**

Responses were generally supportive. Comments included: need for better evidence to understand need, demand and viability; opportunities to provide variety and interest; importance of low/zero carbon homes and fewer cars; concern about risks around cohesion & integration of design and for effective monitoring of design; and need for better evidence to understand demand and viability.

Responses to issues and options questions: Houses in Multiple Occupation

- **Question 43: Should the Area Action Plan allow a proportion of purpose-built Housing in Multiple Occupation and include policy controls on the clustering of Houses in Multiple Occupation?**

Three out of the five respondents to this question objected. Reasons included: family houses and well-designed studio apartments would be better; and the need for more detail.

Other responses included: Housing in Multiple Occupation being essential to a diverse community; and need for decisions to be evidence based.

Responses to issues and options questions: Private Rented Sector housing

- **Question 44: Should the Area Action Plan include the Private Rented Sector as a potential housing option as part of a wider housing mix across the North East Cambridge area?**

- **Question 45: if Private Rented Sector housing is to be supported, what specific policy requirements should we consider putting in place to manage its provision and to ensure it contributes towards creating a mixed and sustainable community?**

- **Question 46: Should the Private Rented Sector provide an affordable housing contribution?**

- **Question 47: What 'clawback' mechanisms should be included to secure the value of the affordable housing to meet local needs if the homes are converted to another tenure?**

- **Question 48: What would be a suitable period to require the retention of private rented homes in that tenure and what compensation mechanisms are needed if such homes are sold into a different tenure before the end of the period?**

- **Question 49: What type of management strategy is necessary to ensure high standards of ongoing management of Private Rented Sector premises is achieved?**

There was mixed support for provision of Private Rented Sector housing. Supporters cited need to provide choice, support local employment and accelerate delivery, and that it would need to be high quality and well managed. One recommended involving a housing association, and not wanting the benefits of the area accruing to buy to let investors outside the area was also cited. Three objected, for reasons including not wanting one rich company/ individual in ownership, potential impact on house prices, and that Private Rented Sector housing is 'bad'.

No specific policy requirements were raised.

Potential Affordable housing contribution options suggested were discounted market rent and off-site contributions.

Two approaches were suggested around clawback: only on multi-phased developments where market conditions may change over the life of the project; and a profit sharing mechanism up to an agreed cap, based on the value difference between a private for sale scheme at 40% and a Private Rented Sector scheme at 30%.

10 or 15 years were suggested as suitable retention periods.

One outlined a management strategy to include: ownership by institutional investor, rented out through an agent or directly; tenancy lengths the same as other private rented housing as landlords will want to keep tenants in place for the long-term anyway; and management by a professional management company. Another said that all prospective tenants could be offered the option of a three year tenancy.

Responses to issues and options questions: Other forms of specialist housing, including for older people, students and Travellers

- **Question 50: Should the area provide for other forms of specialist housing, either on-site or through seeking contributions for off-site provision?**

A review of demand, need and viability is needed, including demographic analysis and understanding of current and future local needs of local community and employees. A number of respondents supported inclusion of Traveller site provision. One respondent referred to need for older people's housing. Student housing was mentioned as being inappropriate.

Responses to issues and options questions: Quality and accessibility of housing

- **Question 51: Should the Area Action Plan apply the national internal residential space standards?**
- **Question 52: Should the Area Action Plan develop space standards for new purpose built HMOs?**
- **Question 53: Should the Area Action Plan apply External Space Standards, and expect all dwellings to have direct access to an area of private amenity space?**
- **Question 54: Should the Area Action Plan apply the Cambridge Local Plan accessibility standards?**

Most supported the need to apply good internal space standards, including in Housing in Multiple Occupation, although some saying minimum standards for internal or external space were not enough.

One said there should be scope for exceptions for groups who may prefer smaller homes with more high-quality shared space, including for Housing in Multiple Occupation. This would help with future-proofing. There could be small scale pilot testing of more innovative solutions.

There was general support for external space standards, although viability was mentioned. It may not be realistic to expect all dwellings to have access to private amenity space given the quantum of development and range of different typologies. A flexible approach is needed. Where it is possible, there should be convenient access to high quality community and public space. One said high quality public space can be better.

There was general support for high accessibility standards, but again viability was raised as needing to be considered. There should be flexibility on how accessibility standards are applied; accessibility shouldn't affect the ability to meet density and housing targets.

Key Issues (including any lessons learnt from other sites)

Issues and lessons learned: Housing mix

There is a clear need for a mix of housing sizes, types and tenures, at different price points to create choice, and meet a range of needs.

Issues and lessons learned: Housing to meet needs of the local economy

With science and business parks forming part of the site, this provides the opportunity to support local employment, reduce reliance on cars to get to work thereby helping to reduce traffic congestion and air pollution, and offer a better work/life balance.

Housing at North East Cambridge has the potential to completely change the character of the area in a way that can help induce more sustainable lifestyles. If housing is occupied by employees of nearby employment sites north East Cambridge has the potential to be transformed from an edge of town commercial centre into a truly mixed used neighbourhood where the majority of journeys are made via active travel.

In the Greater Cambridge Housing Strategy, South Cambridgeshire prioritises exploring working with businesses to help themselves to provide homes for their workers, and considering whether there are specific requirements to provide essential local worker accommodation as part of the overall mix of housing. Cambridge City Council has been more supportive of meeting the needs of workers through other mechanisms, including giving some priority to those in employment in the allocation of social/affordable rent housing where appropriate, as opposed to supporting specific employers or types of worker.

Provision of a range of homes, including affordable housing, can also contribute to meet the housing needs of those working in the area.

Issues and lessons learned: Housing affordability

Greater Cambridge is an expensive place to buy or rent a home, with housing affordability being one of the main housing challenges facing the area. Proximity to good transport links has the potential to increase demand and push prices up further. We know from other developments that high service charges on new homes can also be an issue.

Because of this, both councils see provision of affordable housing as a priority, but there are issues around the extent to which so-called affordable housing is genuinely affordable. For example, the national approach of affordable rents for social housing being able to be charged at up to 80% of market rents will be unaffordable to many.

The councils' current policy approach is to require affordable rents to be capped at Local Housing Allowance rates, although even then there had been some affordability issues for those on low incomes– particularly in relation to larger new-build homes. In view of the recent significant rises in rates (see tables 6 & 7 above) a new approach will be required to ensure that affordable rents are as affordable as possible.

Other factors can also have an impact on housing affordability. For example, energy efficient homes, living close to places of work, opportunities for active travel and access to cheap public transport can also affect the extent to which households are able to afford their housing costs.

Issues and lessons learned: Need for affordable housing

Evidence demonstrates that for those on low incomes the housing options are scarce, with a heavy reliance on social/affordable rent homes. However, there is also a growing 'affordability gap' where middle income households are being squeezed out of the market with limited housing options for low cost home ownership or the private rented sector.

One of the issues in determining the affordable housing mix at an early stage of planning, is that during the life of the development new evidence on housing needs, as well as changes to national and local policy, can impact on the tenures and sizes of homes required.

High house prices have contributed recently to difficulties for some providers in selling shared ownership properties. A 25% share in an average priced house of around £500,000, combined with rent on the unsold share and potential service charges, is still unaffordable for many. Consideration will need to be given as to how shared ownership is made affordable to those on middle incomes, and whether there are other routes to home ownership that can help meet the needs of this group.

Issues and lessons learned: Size and mix of affordable housing

Both Councils' Affordable Housing Supplementary Planning Documents were agreed some years ago. Tables 3 & 4 above show that house prices have increased considerably since then. New affordable housing tenures have been introduced recently through the National Planning Policy Framework, and the Greater Cambridge Housing Strategy points to a need for the balance of affordable housing tenures for both districts to be reviewed.

In addition, early results from the emerging local research being carried out on the need for Build to Rent housing is indicating a need for some provision of Affordable Private Rent housing to help meet the needs of those who are unable to access social/affordable rent housing but are also unable to afford to buy or rent on the open market. These factors, and the particular importance of North East Cambridge in supporting needs of the local economy, mean that the Councils need to look beyond the previously recommended social & affordable housing/ intermediate tenure splits of 75/25 for the City and 70/30 for South Cambridgeshire.

In bringing forward any Build to Rent housing it will be important to ensure that there is not an imbalance in terms of the overall rented sector (social/affordable rent, affordable private rent and market rent) compared to other tenures.

In terms of sizes of affordable homes, plans for North East Cambridge need to consider the evidence which currently points to the need for smaller (mainly one and two bedroom) affordable homes, whilst providing some larger family homes to support a balanced community.

Issues and lessons learned: Location of affordable housing

The council's historic policy approach of having affordable housing in clusters of no more than 25 units is unlikely to be deliverable on such a high-density site.

Issues and lessons learned: Private Rented Sector housing

Having good quality, well managed private rented accommodation in close proximity to work is likely to be attractive to young professionals, perhaps on short term contracts, who are not looking to purchase a home at that time.

Although the Area Action Plan Issues & Options consultation 2019 produced a mixed response, the evidence available indicates a potential need for some purpose-built Private Rented Sector housing. Viability issues mean that any such schemes coming forward are likely to be on a reasonably large scale. Research on Build to Rent currently being commissioned by the two councils aims to identify the scale of demand, and also the potential impact of having a large Build to Rent scheme or schemes in a high density area. It is evaluating private rental sector schemes across the UK and identifying best practice, and will also give a better understanding of the extent to which an element of Affordable Private Rent may be viable. Private rented sector housing has a higher risk than other housing of creating transient communities, and these studies will be appraised in line with the placemaking and community building objectives of the emerging Area Action Plan. Minimising churn and transience are keys factors that will need to be addressed and specific ways to engage to build communities. This should build on lessons learned from both Orchard park and Eddington..

Issues and lessons learned: Housing for older people

As also identified in the Health & Wellbeing topic paper, recent research on the housing, care and support needs of older people identified that provision is required that includes and connects together a number of different components, including: [11]

- New housing which promotes independent living and provides opportunities for older people to move to more appropriate accommodation (on the basis of size, design, site and situation) as their needs change in later life;

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[11] Older People's Housing, Care & Support Needs 2017-2036, Sheffield Hallam University and Centre for Regional Economic & Social Research

- Specialist housing which assists older people with their housing and support needs in later life and delays or reduces the need for more intensive care; and

- Integrated housing, health and social care services which help meet the ongoing health needs of older people;

Data at table 11 above showing the ageing population also highlights the importance of providing a range of housing options for older people.

However, people are not always willing to move out of long-term family homes, even where their health and social care needs would be better met elsewhere, and people often only want to move if a bungalow is available. Wherever possible the homes being delivered need to be flexible to meet needs of both young and old, giving as many people as possible the opportunity to live at North East Cambridge and to remain at home as they age.

There are likely to be strategic and revenue implications for Cambridgeshire County Council in developing specialist accommodation and care beds. There are inherent difficulties in the time lapse between planning for and delivering specialist housing schemes for older people and those with disabilities where commitments to revenue funding are unable to be made.

Issues and lessons learned: Community impacts

It is generally accepted that mixing of tenures on a development can have a positive effect in terms of place making, through building mixed and sustainable communities and improving integration. The recently published National Design Guide, part of the government's collection of planning practice guidance, refers to the need for different tenures to be well-integrated and for there to be no segregation of tenure.

With mixed tenure, high densities planned for the site, there will need to be careful consideration of how to minimise any potential negative community impacts, to ensure that North East Cambridge is a pleasant place to live and can make a positive contribution to health and wellbeing. For example, it has been identified that on previous large developments in Cambridgeshire where the infrastructure and facilities are less established this has contributed towards some residents feeling isolated, often leading or contributing to mental ill health.

Noise mitigation will be particularly important given the site's proximity to the railway and the emerging spatial framework's intention to retain noise-generating industrial uses at North East Cambridge. As the site matures, it is reasonable to expect a growth of town centre noise generating uses such as schools, pubs and music venues.

Noise and anti-social behaviour related to short term lets, such as through AirBnB, is also a growing issue both nationally and locally. Issues can include: impact on permanent residents' privacy and enjoyment of homes and amenity spaces; disruption caused by visitors moving in and out; impacts on sense of security and community cohesion associated with frequent rotation of unknown neighbouring occupiers; and additional pressures in relation to management and servicing of communal areas.

The removal of residential properties from the local housing market, either as informal online rental or serviced apartments, as well as increasing local rental values, can also undermine the character of the local area and community cohesion by increasing the transitory nature of the community.

Housing needs to be delivered alongside other facilities and social infrastructure, including appropriate community, cultural and recreational provision. Accessible amenity spaces can facilitate and encourage social activity, community cohesion and help tackle inequality.

It is also important that the new development is designed to have a positive impact on, and integrate with, existing communities.

Issues and lessons learned: Accessible housing

The ageing population points to the need for level M4(2) of the accessible and adaptable building standards to be met for some or all of the new homes provided.

North East Cambridge provides an opportunity to provide good quality accessible housing for older people and others with mobility needs, in line with Housing Our

Ageing Population Panel for Innovation (HAPPI) principles.[12] However, the potential impact of meeting accessible housing standards on scheme viability was raised during the Area Action Plan Issues and Options 2019 consultation. There are also differing Local Plan policy positions between the two councils.

Issues and lessons learned: Design

Recent national research has found that the design of new housing development is overwhelmingly mediocre or poor. It points to widespread evidence that high quality design makes new residential developments more acceptable to local communities and delivers huge value to all; but that high quality design does not have to be unaffordable.[13] The National Planning Policy Framework is also clear that "good design is a key aspect of sustainable development.

The Cambridge Sustainable Design Guide is based around four key principles: Community, Connectivity, Character and Climate. Its objectives are to: address issues such as fuel and water poverty; build homes that have a positive impact on the health and wellbeing of residents; build homes that are designed and built to high design and sustainability standards; ensure new homes are easy to maintain and affordable to heat; and ensure they are adaptable, both for residents and to future climate change.

High quality housing design is recognised as important for the occupants themselves, and can also make a major contribution to place-shaping.

Quality design and construction can contribute towards addressing the climate change emergency, supporting the aim to achieve zero carbon by 2050. (See the Climate Change, Energy and Sustainable Design topic paper for more detail). Energy and water efficient homes can also help to combat fuel and water poverty.

As outlined in the Community Safety topic paper, building to Secured by Design standards can help make homes and neighbourhoods safer and more secure, helping to reduce levels of crime and anti-social behaviour, and cutting carbon

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[12] Housing our Ageing Population Panel for Innovation (HAPPI) principles
[13] Place Alliance: A Housing Design Audit for England

emissions. It can help promote a sense of public ownership and make homes easier to maintain and housing developments easier to manage.

In addition, developments need to be connected to and integrated with existing communities and with the existing natural, built and historic environment; and elements such as car parking and cycle and bin storage need to be an integral part of overall design.

The covid-19 pandemic has highlighted the importance of information technology and digital connectivity to support home life. Developments in the Area Action Plan should integrate these considerations into the design of homes, in line with the Digital Connectivity topic paper preferred approach, to ensure an equitable distribution of high quality digital infrastructure. These design considerations willsupport communication and community building that is ever more reliant on IT,

Issues and lessons learned: Trip internalisation

As detailed in the Trip Internalisation topic paper, the transport evidence base identifies significant potential for trip internalisation. (ie trips generated within North East Cambridge that both begin and end within the boundary of the Area Action Plan). A significant shift away from private vehicle journeys will be needed, and a threshold (trip budget) has been set to mitigate the impact of vehicular traffic from the development on the existing highway network.

A good mix of housing types and tenures to suit local requirements, and residential provision linked to work places have been identified as part of the solution to achieving this.

Issues and lessons learned: Health & Wellbeing

Housing has a key role to play in promoting health and wellbeing. Having a stable, secure home that is truly affordable to live in is recognised as a key determinant of good mental and physical health. Homes should have access to open space as this is critical to the welfare and mental health of new communities in particular.(See Health & Wellbeing topic paper)

Homes designed to be accessible and adaptable enable people to live independently for longer, and help to reduce strain on wider health, care and support services. As North East Cambridge is a new community, it will provide a place for new families to start, so even on small unit size properties, the need for homes to be integrated with

considerations around child placement/care/nursery provision is key to support health and wellbeing .

Given the draft proposals for high density provision of homes at North East Cambridge, meaning large numbers of flatted development and mixed use schemes, the build quality will need to ensure noise is mitigated from both external (e.g. A14 and rail) sources and internal development. Neighbour noise is critical and is something that has been learned from other recent developments. The Environmental Health topic paper and the mixed use development evidence provide further information on this.

Issues and lessons learned: Self and custom build housing

With a duty to hold a register of people interested in plots for self and custom build housing, local authorities must have regard to this and give enough suitable development permissions to meet the identified demand. Self and custom-build properties can provide market or affordable housing.

Issues and lessons learned: Viability

Energy efficiency, meeting space & accessibility standards, sizes of homes, and clustering of affordable housing are just some of the issues which can have an impact on scheme viability. Assessing where the balance should lie between all these elements can be a challenge.

The draft Area Action Plan requires 40% of the homes at North East Cambridge to be delivered as affordable housing to meet evidenced high levels of need. However, the national planning guidance benchmark for providing Affordable Private Rent housing as part of Build to Rent schemes is set at 20%. To achieve the 40%, the shortfall would need to be made up across other parts of the development.

Preferred Approach

Preferred Approach: Overall housing mix

A range of house types, tenures and sizes is needed to meet the needs of different groups from all sectors of the community, in line with the Cambridge Local Plan 2018. South Cambridgeshire's Local Plan requirements around the percentage mix of sizes of market housing are not considered appropriate for North East Cambridge, given the urban character and likely densities required on the site that differ considerably to South Cambridgeshire's largely rural setting. The need to support social inclusion and wellbeing, and to create a mixed, balanced, sustainable and successful community needs to be taken into account in deciding on the housing mix. This mix should reflect the latest evidence, identified through the pre-application process, to ensure that housing is responsive to the latest housing needs.

Preferred Approach: Tenure mix

The affordable housing provision requirement differs in the two existing 2018 local plans.. With a clear need for affordable housing, it is appropriate that the policy target in the South Cambridgeshire Local Plan 2018 of 40% affordable for all major schemes should apply to the AAP area. To achieve this, all housing that provides 10 or more net additional dwellings should include affordable housing.

The table below shows the split that would arise from such a policy, between affordable and market homes, based on delivery of 8,000 homes. The housing would be comprised of 3,200 affordable homes, being a mixture of social/affordable rent, low cost home ownership, affordable routes to home ownership and affordable private rent; and 4,800 market homes, a mix of market sale and private rent (build to rent).

Table 12: North East Cambridge- Potential number of affordable and market homes based on a 60/40 market affordable split

	Percentage	No. based on 8,000 units	Notes

Affordable	40%	3,200	Likely to be a mixture of social/affordable rent housing, low cost home ownership, affordable routes to home ownership and affordable private rent.
Market	60%	4,800	A mix of market sale and Private Rent (Build to Rent)
Total	**100%**	**8,000**	

Preferred approach: Affordable housing tenure mix

As well as recognising the high level of need for social/affordable rent housing, there is also a need to consider a broader range of affordable housing tenures. To meet the affordability challenge and to support creation of a balanced community, three affordable tenure mix options have been considered:

- A 75/25 split between social/affordable rent and other affordable housing tenures in line with Cambridge's current Local Plan;
- A 70/30 split to match South Cambridgeshire's Local Plan requirement; or
- A 60/40 split which recognises more the potential for new models of 'intermediate' tenure affordable housing for those on middle incomes. This could help to provide a wider range of housing options beyond the more traditional shared ownership model, and also support local businesses by improving provision of housing which is accessible to a wider range of local workers.

These are modelled in tables 13 to 15 below.

Table 13: Indicative Affordable Housing mix based on a 75/25 split.
The table below shows the number of social/affordable rent homes being 2,400 if representing 75% of the overall affordable housing allocation. This means that the remaining 800 homes, representing 25% of all affordable homes, would be made up of low cost home ownership, affordable private rent, Rent to Buy and other routes to home ownership,

	Percentage	No. based on 8,000 units	Notes
Social/affordable rent housing	75%	2,400	Social Rent, or Affordable Private Rent capped at an appropriate level

	Percentage	No. based on 8,000 units	Notes
Other affordable tenures	25%	800	Likely to be a mix of low cost home ownership (shared ownership), affordable private rent, Rent to Buy and other routes to home ownership, etc.
Total affordable	**100%**	**3,200**	

Table 14: Indicative Affordable Housing mix based on a 70/30 split

The table below shows the number of social/affordable rent homes being 2,240 if representing 70% of the overall affordable housing allocation. This means that the remaining 960 homes, representing 30% of all affordable homes, would be made up of low cost home ownership, affordable private rent, Rent to Buy and other routes to home ownership,

	Percentage	No. based on 8,000 units	Notes
Social/affordable rent housing	70%	2,240	Social Rent, or Affordable Private Rent capped at an appropriate level
Other affordable tenures	30%	960	Likely to be mix of low cost home ownership (shared ownership), affordable private rent, Rent to Buy and other routes to home ownership, etc.
Total affordable	**100%**	**3,200**	

Table 15: Indicative Affordable Housing mix based on a 60/40 split

The table below shows the number of social/affordable rent housing being 1,920 if representing a 60% of the overall affordable housing allocation. This means that the remaining 1,280 homes, representing a 40% of all affordable homes, would be made up of low cost home ownership, affordable private rent, Rent to Buy and other routes to home ownership,

	Percentage	No. based on 8,000 units	Notes
Social/ affordable rent housing	60%	1,920	Social Rent, or Affordable Private Rent capped at an appropriate level
Other affordable tenures	40%	1,280	Likely to be a mix of low cost home ownership (shared ownership), affordable private rent, Rent to Buy and other routes to home ownership, etc.
Total affordable	**100%**	**3,200**	

It is recommended that the 60/40 approach at table 15 is taken at North East Cambridge. This takes into account the high level of need for social/affordable rent homes, but also presents opportunities around newly emerging affordable housing tenures to create a more mixed community and meet a wider range of needs.

The potential split between affordable housing tenures other than social/affordable rent housing needs to be based on up to date evidence going forwards.

All affordable tenures should only include those where the homes or grant funding used remains available for affordable housing in the long term.

An indicative mix of the types of affordable housing tenures at outline planning stage would need to include a review mechanism to ensure that it continues to reflect an up to date assessment of housing need as the development progresses.

Preferred approach: Affordable housing size mix

With current social/affordable rent housing demand mostly for smaller properties, the following table gives an indication of size mix for such housing based on Home-Link housing register figures. This is liable to change over time, and developments coming forward in the Area Action Plan should reflect the latest evidence when determining the acceptable splits of home sizes to ensure they best respond to local needs.

Table 16: North East Cambridge – Social/affordable rent housing indicative sizes based on current demand

The table below shows that based on current evidence the affordable homes provided in the Area Action Plan should be 60% 1 bed, 29% 2 bedroom, 9% 3 bedroom, and 2% 4 bedroom.

Size	Percentage of affordable housing	Approximate numbers based on 1,920 social/affordable rent homes
1 bedroom 2 person	60%	1,152
2 bedroom 4 person	29%	557
3 bedroom 5 person	9%	173
4 bedroom 6 person	2%	38
Total	**100%**	**1,920**

Source: Greater Cambridge Housing Strategy, from Home-Link

The Help to Buy register indicates levels of demand for the more traditional forms of intermediate tenure – shared ownership, shared equity etc, (although it may not pick up potential demand for new tenures such as Affordable Private Rent).

Based on table 10 above, combined with affordability issues for larger homes, it is recommended that whilst current demand patterns remain, shared ownership provision focuses largely 1 and 2 bed properties, although there should be scope for some larger family homes also to create a better mix.

There is also the potential for competitively priced studio sized apartments within Affordable Private Rent provision to meet some of the need for those who might otherwise gravitate towards Housing in Multiple Occupation.

As with tenure, mechanisms need to be in place to review the size mix as the development progresses, to ensure that provision continues to meet up to date assessment of need.

Preferred approach: Affordability of social/affordable rent housing

Social/affordable rent housing needs to be as affordable as possible to eligible applicants.

The councils are considering how affordability should be assessed going forwards in light of the recent changes to Local Housing Allowance rates (shown in tables 6 & 7 above) which have previously been used to cap affordable rent levels.

Preferred approach: Affordability of Affordable Private Rent housing

Affordable Private Rent should be set at least 20% below private market rent levels (inclusive of service charges) for the same or equivalent property and at levels that clearly meet the needs of those on middle incomes (currently £30k to £50k), in line with up to date affordability analysis.

The discount should be calculated when an Affordable Private Rented home is rented out and when the tenancy is subsequently renewed. The rent should increase on the same basis as longer term market tenancies within the development.

Preferred approach: Location of affordable housing

Consideration needs to be given to how affordable housing is distributed within each land parcel and across the site as a whole, to meet national policy requirements, support community integration, and ensure homes can be effectively managed. clusters of social/affordable rent homes in particular need to be well integrated, tenure blind, and not confined to less prominent parts of the site as a whole or on any individual land parcel.

Any consideration of pepper-potting of affordable housing needs to take into account potential ease and efficiency of managing those homes.

Preferred approach: Local workers/ tethered housing

Local workers should be prioritised for allocations to a proportion of the Affordable Private Rent units in any Build to Rent schemes.

Consideration should also be given to whether some of the Build to Rent units should be offered to employers on a block-lease basis, so that homes are targeted specifically to individual companies as part of their recruitment offer to employees.

This could be done through local publicity or bespoke offers to companies. It could enable homes to be offered by individual companies as part of their recruitment offer to employees.

Any opportunities for block-lease would need to be explored further as part of the master-planning of the scheme. Any consideration of such offers to employers should be based on robust evidence of need.

It is recommended that a Local Lettings Plan be introduced for first lets to the social/affordable rent housing on each phase of the development, so that applicants may be given some priority if they work in the area. This would also help in developing a mixed and balanced community.

Preferred approach: Private Rented Sector Housing (Build to Rent) including Affordable Private Rent

40

As identified above, emerging evidence indicates a potential need and demand for some purpose-built Private Rented Sector housing in North East Cambridge as part of the overall range of housing provision. Purpose built Private Rented Sector schemes delivered as Build to Rent should be required to provide an element of affordable housing to help address the high level of need for affordable housing in Cambridge and the wider Greater Cambridge area. In line with National Planning Practice Guidance, at least 20% of units of all Build to Rent Units should be provided as Affordable Private Rent; more if there is a clear need and viability permits.

Given the lower contribution of Build to Rent schemes to the overall affordable homes target, and the high level of affordable housing need in Cambridge and also South Cambridgeshire, in order to achieve the overall target of 40% affordable housing in the AAP area, it is important for the shortfall to be made up elsewhere in North East Cambridge.

Consideration has been given to means of securing the most appropriate balance between build to rent provision and securing 40% affordable housing provision. Implications of different levels have been explored. If, for example, Build to Rent made up all the housing across the Area Action Plan, quite apart from not creating a mixed community, it would require developers to deliver a minimum of 1,600 affordable private rent homes, significantly less than the minimum 3,200 homes, without any social/affordable rent or other affordable tenures being delivered. If Build to Rent made up 30% of tenures on site, for example, it would require other developments to increase their provision by 6% to 46.25% affordable housing to achieve the overall 40% target. If Build to Rent made up 10% of tenures on site, this would require non-Build to Rent developments to make up the shortfall by 2%, providing around 42.22% of their developments as affordable homes.

Having considered the impacts of different levels of Built to Rent housing, it is considered that a cap on the total amount of build to rent housing of 10% of the total homes delivered at North East Cambridge is reasonable and appropriate. This numbers 800 homes (10% of the total proposed 8,000 homes). This cap helps ensure that the housing tenures within North East Cambridge remain viable and deliver on the recommended 40% affordable homes target overall across the AAP area, while supporting the delivery of a mixed and balanced community. The Viability

Study for the whole site is ongoing, and this preferred approach will be reviewed in light of the results of the study.

A range of unit sizes and household types should be required. Studio apartments may be acceptable in order to provide a more affordable housing option (subject to clear evidence of need), but only as part of a wider mix of sizes, providing a balanced offer.

Any new Private Rented Sector schemes should require a range of rent levels to meet a variety of income levels, with affordability assessed on the basis of 30 to 35% of net household income being reasonable to spend on housing costs, including any service charges.

Affordable Private Rent housing should be evenly distributed throughout the private rented development and physically indistinguishable from the market rent housing in terms of quality and size. Flexibility may be built in to alternate specific units between Affordable Private Rent and market rent over time.

Any affordable private rent homes included as part of a scheme, through a section 106 agreement, should be provided specifically as a community benefit in perpetuity. The future sale of a build to rent scheme, or the sale of individual homes within the scheme to other tenures, should not result in the withdrawal of the affordable housing contribution from the local community; it should not result in the loss of affordable housing without alternative provision being made.

Appropriate clawback arrangements in the event of future tenure change would also need to be agreed with the councils to secure the value of the Affordable Private Rent. The nature of these arrangements should depend on the circumstances at the time and evidence of good practice elsewhere.

Consideration should also be given to what is a suitable covenant period to require the retention of market Private Rented Sector homes, and what compensation mechanism would be needed if tenures are converted before the end of that period.

Such schemes need to be well managed. Developers should be required to propose a suitable management strategy for a scheme, negotiated with the councils to ensure it meets the needs of residents and the wider community.

Further recommendations may be made in this area based on the results of the Build to Rent research currently being carried out.

Preferred approach: Older people

The Greater Cambridge Housing Strategy recommends a percentage of different types of older people's accommodation to be included on new developments in Greater Cambridge as a starting point. The following table shows that percentage provision and what numbers of homes that might generate in North East Cambridge.

Table 17: Recommended breakdown of older people's accommodation on new developments in Greater Cambridge, and consequent number of homes likely to be required for North East Cambridge[14]

Housing type	Reco-mmended % of new housing supply	Number based on 8,000 homes	
Age exclusive	5%	400	Likely to be mainstream housing built with older people in mind, i.e. meeting Building Regulations Part M4 (2 or 3). To include market and affordable housing.
Specialist housing	7%	560	Could include care ready type accommodation or extra care, dependent on availability of revenue funding from the County Council.
Total specialist housing for older people	**12%**	**960**	
Care beds	Not yet established		Residential and/or nursing care taking into account health and social care policy requirements.

Research is currently under way to better understand the need for housing for particular groups, including older people, to help inform the new Greater Cambridge

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[14] Based on Older People's Housing, Care & Support Needs in Greater Cambridgeshire 2017-2036, Sheffield Hallam and Centre for Regional Economic & Social Research

Local Plan. Cambridgeshire County Council is also carrying out research in relation to residential care provision.

It is recommended that North East Cambridge aims for the breakdown at Table 17 until the results of the emerging research are known.

In addition, whilst the majority of households aspire to continue to live independently in their own home, it is essential that as many new homes as possible are future-proofed through design so that homes have the flexibility to be adapted as household's needs change.

Any plans for delivery, other than mainstream age exclusive housing, should be discussed with the County Council at pre-planning stage, and would need to be endorsed by them before any planning application is considered.

Preferred approach: Accessible homes

With differing requirements around accessible housing in the two Councils' Local Plans, and viability concerns raised through consultation, further consideration is required on the extent to which homes should be built to level M4(2) of the adaptable and accessible building standards, in addition to age exclusive housing, to meet the needs of older people and younger people with disabilities. This needs to take into account the ageing population, and the need to support social inclusion and sustainability, and promote a mixed community.

Preferred approach: Specialist housing for people with disabilities – working age

In terms of location and access to services, it is considered that North East Cambridge would be a suitable location for specialist housing for disabilities, although figures in table 12 above suggest numbers needed are likely to be small.

As with specialist housing for older people, any plans for delivery need to be discussed with the County Council at pre-planning stage, and would need to be endorsed by them before any planning application is considered.

Preferred approach: Self & custom build, and community led housing

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Given the high density planned for the area, it is likely that custom build or custom finish will be a more appropriate form of housing on the development than self-build. There is 5% self and custom build recommended for larger sites in the Greater Cambridge Housing Strategy. Given the high density make-up of the site limiting the potential for self-build, this leaves a smaller percentage for custom build. It is recommended that for North East Cambridge around 2 to 3% of homes should be brought forward as custom build/ custom finish.

The approach to custom build also has the potential to enable appropriate community led housing initiatives to be supported to help meet affordable housing need.

In bringing forward custom build/finish housing, the councils must be satisfied that the initial owner of each home will, as a minimum, have primary input into its final layout and finish.

Preferred approach: Student accommodation

Student accommodation is intended for students of the institution undertaking full-time courses of one academic year or more. As there are no Higher Education institutions offering such courses in the vicinity of North East Cambridge, the councils do not consider that there is any need to provide any student accommodation in situ unless otherwise recommended by new evidence that may emerge during the plan period.

Preferred approach: Gypsy & Traveller accommodation

It is acknowledged that the new Gypsy & Traveller Accommodation Assessment being carried out is likely to identify a requirement in Greater Cambridge for accommodation for caravan dwellers and Travelling Showmen. However, given the high densities being proposed at Cambridge North East, low density accommodation such as traveller pitches may impact on the site's ability to deliver the intended level of affordable housing.

 Existing Gypsies and/or Travellers at nearby Chesterton Fen Road should be able to benefit from the proposed Area Action Plan in other ways, this may include new travel improvements with a new foot and cycle bridge proposed in the Spatial

Framework to cross the railway tracks, and they should be able to access all local services and amenities within North East Cambridge.

Preferred approach: Housing in Multiple Occupation

No extra provision of Housing in Multiple Occupation is recommended, as some market homes are likely to become Housing in Multiple Occupation over time anyway. But a proportion of Affordable Private Rent units could be provided as studio apartments at price points comparable to the wider Cambridge City Housing in Multiple Occupation market.

Preferred approach: Phasing

Due to risks around people on new developments feeling isolated, it is critical, especially for those in higher housing need, that the bringing forward of infrastructure and facilities is phased appropriately in line with housing development, especially in relation to the affordable housing to help support an integrated community and wellbeing from the outset.

Preferred approach: Design

Homes should meet the requirements of the Greater Cambridge Sustainable Design and Construction Supplementary Planning Document unless it can be demonstrated that it is inappropriate or unviable to do so.

Housing development should also meet the principles laid down in The Cambridge Sustainable Housing Design Guide (due to be updated). [15]

Internal space standards should meet national residential space standards as a minimum, and there should be requirements around appropriate provision of private amenity space.

The Agent of Change principle should be treated as a key consideration for determining residential applications. Development proposals for housing should demonstrate how noise, pollution and other potential nuisances have been mitigated.

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[15] Cambridge Sustainable Design Guide

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Affordable housing should not be visually distinguishable from market housing by its external appearance or the space standards adopted.

Likely impact of design on residents' utility bills should be taken into account in designing homes, particularly in affordable housing, to help tackle fuel and water poverty and ensure that homes are as affordable as possible to live in.

Preferred approach: Short-term lets

Provision of purpose built visitor accommodation should not result in the loss of existing housing.

Conversion of existing housing to visitor accommodation should not adversely affect: the supply or affordability of local housing including rental values; residents amenity and sense of security; or the character of or community cohesion within the area. A service management plan should be agreed the planning authority.

Preferred approach: Viability

Given the density of the scheme, other section 106 contribution requirements, and requirements around energy efficiency, accessibility, internal and external space standards etc, it is recommended that a mechanism be developed to prioritise the different elements, to be used where viability can clearly demonstrated as an issue. This could be in the form of a cascade, or a requirement for certain percentages of properties to meet required standards in order to make a scheme viable.

Sustainability Appraisal

The sustainability appraisal of the emerging draft plan looks at the policies contained within it. This contained no recommendations on policy development for housing apart from the inclusion of the requirement for all housing to meet at least Building Regulation requirement M4(2) 'accessible and adaptable dwellings' and an appropriate proportion of housing to meet Building Regulation requirement M4(3) 'wheelchair user dwellings'. This has been covered in the design Good Design at Higher Densities policy.

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Appendix C5: Open Space Topic Paper

Introduction

Open spaces, regardless of ownership, are a key aspect of high-quality urban environments and are fundamental to the character of an area. Attractive, accessible and well-designed open space can support and enhance the appearance of an area, creating more desirable places to live and underpin good growth. Open spaces and recreation facilities provide people with a place to relax and socialise as well as encouraging healthier lifestyles by providing opportunities for sport, informal play and daily encounters with the natural environment.

An essential part of the character of Cambridge stems from its many green spaces, trees and other landscape features, including the River Cam. These not only play an important role in promoting both active and passive sport and recreational activities but also provide valuable amenity space and support for biodiversity.

Open spaces not only help support the health, social and cultural well-being of local communities but also help support strategies to mitigate the adverse effects of climate change.

This topic paper has the purpose of explaining how new residential development at North East Cambridge should contribute to the provision of open space and recreation sites/facilities.

Key Documents

- National Planning Policy Framework / Guidance
- Cambridgeshire Green Infrastructure Strategy
- Corporate Plans (Objectives and Strategies)
- Open Space and Recreation Strategy
- Greater Cambridge Playing Pitch Strategy
- Greater Cambridge Indoor Sports Facility Strategy
- South Cambridgeshire Local Plan 2018
- Cambridge Local Plan 2018

National Planning Policy Framework / Guidance

National Policy (NPPF)

A revised National Planning Policy Framework was published February 2019. National policy in the NPPF includes the presumption in favour of sustainable development at the heart of the planning system. This sets a clear expectation on planning authorities to plan positively to promote development and create sustainable communities.

Paragraph 91 explains how the planning policies and decisions should aim to achieve healthy, inclusive and safe places. The should a) promote social interaction, including opportunities for meetings between people who might not otherwise come into contact with each other; b) are safe and accessible, and include high quality public space, which encourage the active and continual use of public areas; and c) enable and support healthy lifestyles, including identified local health and well-being needs, examples include the provision of safe and accessible green infrastructure, sports facilities, access to healthier food, allotments and layouts that encourage walking and cycling.

Paragraph 92 explains how planning policies and decisions should provide social, recreational, and cultural facilities including services needed by the community. It includes the need for: (a) local authorities to plan positively for the provision of community facilities such as meeting places, sports venues, open space and other local services to enhance the sustainability of communities and residential environments; and (b) take account of, and supporting the delivery of local strategies to improve the health, social and cultural well-being of all sections of the community.

Paragraph 96 highlights the importance of providing access to a network of high-quality open spaces and opportunities for sport and physical activity for the health and well-being of communities. It recommends the need for planning policies to be based on robust and up-to-date assessments of the need for open space, sport, and recreation facilities (including quantitative or qualitative deficits or surpluses) and opportunities for new provision. Information gained from the assessments should be used to determine what open space, sport and recreational provision is needed, which plans should then seek to accommodate.

Paragraph 97 states open spaces should not be built on unless one of three exceptions can be satisfied. These exceptions area as follows: the land is surplus to requirements; the loss can be replaced by equivalent or better provision in terms of quantity and quality in a suitable location; the development is for alternative sports and recreational provision.

Paragraph 98 advises planning policies and decisions to protect and enhance public rights of way and access, including taking opportunities to provide better facilities for

users, for example by adding links to existing rights of way networks including National Trails.

National Guidance (NPPG)

National Guidance (NPPG) provides a series of notes about healthy communities explaining its importance in sustainable communities and advising on how it should be integrated with other uses/strategies. Those that have a bearing on open spaces are summarised as follows:

Paragraph: 001 Reference ID:53-001-20190722

Positive planning can make a significant contribution to creating a healthy community with the design and use of the built and natural environments, including green infrastructure. These are major determinants of health and wellbeing by creating environments that support and encourage healthy lifestyles.

Paragraph: 001 Reference ID: 37-001-20140306

How should open space be taken into account in planning?

Open space should be taken into account in planning for new development and considering proposals that may affect existing open space. Open space, which includes all open space of public value, can take many forms, from formal sports pitches to open areas within a development, linear corridors and country parks. It can provide health and recreation benefits to people living and working nearby; have an ecological value and contribute to green infrastructure, as well as being an important part of the landscape and setting of built development, and an important component in the achievement of sustainable development. It is for local planning authorities to assess the need for open space and opportunities for new provision in their areas.

Paragraph: 002 Reference ID: 37-002-20140306

How do local planning authorities and developers assess the needs for sports and recreation facilities?

Authorities and developers may refer to Sport England's guidance on how to assess the need for sports and recreation facilities.

Paragraph: 003 Reference ID:53-003-20191101

A healthy place is defined as one which supports and promotes healthy behaviours and environments and a reduction in health inequalities for people of all ages. It will provide the community with opportunities to improve their physical and mental health, and support community engagement and wellbeing.

It is a place which is inclusive and promotes social interaction. It meets the needs of children and young people to grow and develop, as well as being adaptable to the needs of an increasingly elderly population and those with dementia and other sensory or mobility impairments.

The NPPG also provides a series of notes about green infrastructure explaining what types of spaces this can embrace and support a range of environmental strategies. Those that have a bearing on open spaces are summarised as follows:

Paragraph: 004 Reference ID: 8-004-20190721

Green infrastructure can include a range of spaces and assets that provide environmental and wider benefits. Examples include woodland, parks, and other areas of open space.

Paragraph: 006 Reference ID: 8-006-20190721

Green infrastructure can help reduce air pollution and noise as well as mitigating climate change and flooding. High-quality networks of multifunctional green infrastructure contribute a range of benefits, including ecological connectivity and facilitating biodiversity net gain.

County Wide Strategies

Cambridgeshire Green Infrastructure Strategy

The Cambridgeshire Green Infrastructure Strategy was designed to assist in shaping and co-ordinating the delivery of green infrastructure in the county, to provide social, environmental and economic benefits now and in the future.

This strategy is based on the analysis of public policy and key baseline data grouped into seven themes identified as important elements of green infrastructure, biodiversity, climate change, green infrastructure gateways, heritage, landscape, publicly accessible open space and rights of way. In addition, three cross-cutting/overarching issues were considered: economic development, health and well-being, and land and water management.

A 'Strategic Network' of green infrastructure priorities for Cambridgeshire was identified by mapping these themes and other important factors relating to green infrastructure to show where each theme is most important for green infrastructure in Cambridgeshire. It provides a county-wide framework upon which to provide or enhance green infrastructure in Cambridgeshire up to and beyond 2031. It is designed to offer county-wide connectivity, identify opportunities to support the delivery of the four objectives, and link into green infrastructure provision outside

Cambridgeshire. It is this Strategic Network that identifies the need and the opportunities to provide additional provision.

Corporate Plans (Objectives and Strategies)

South Cambridgeshire Business Plan 2019-24

The South Cambridgeshire Business Plan 2019-24 sets 4 priority areas for the district one of which is:

- Being green to our core – we will create a cleaner, greener and zero carbon future for our communities

Under this priority area the Council will focus on protecting and enhance the district's heritage and environment and will identify sites and opportunities for tree planting and habitat enhancement to offset the environmental impact of developments in the district. One of the measures to achieve the priority is to carry out an assessment to identify natural capital opportunities and strategic open space for tree-planting and biodiversity/carbon offsetting by end of March 2020.

South Cambridgeshire Healthy Communities objectives for Northstowe Area Action Plan, 2007

The Northstowe Area Action Plan makes reference to the Community Strategy's vision which is split into 6 aims one of which is to provide 'Active, Safe and Healthy Communities where residents can play a full part in community life, with a structure of thriving voluntary and community organisations.

One of the development principles is to ensure that the town of Northstowe will be developed as a balanced, viable and socially inclusive community where people can live in a healthy and safe environment, and where most of their learning needs are met.

Policy NS/19 Public Open Space and Sports Provision states that Northstowe's residents should be able to find that their sport, leisure and recreational needs are met locally so that they can lead a healthy lifestyle and enjoy a high quality of life and leisure time. The policy also states that recreational facilities and associated landscaping will be delivered early within the development such that the needs of the development are met at all times.

Cambridge City Corporate Plan 2019-2022

The Cambridge City Corporate Plan 2019-2022 sets out 5 strategic objectives, one of which is to protect our environment and tackle climate change. This objective is unpinned by a series of actions, initiatives and strategies that look to:

- Make our streets and open spaces and communities more resilient to the impacts of climate change so Cambridge's streets and open spaces can continue to be enjoyed by future generations

- Manage Cambridge's streets and open spaces for the benefit of both wildlife and people by ensuring that biodiversity protection and enhancement is taken into account in all development decisions and management practices. This will be measures by the % of City Council owned and managed parks and open spaces actively designated and / or managed for biodiversity

- Keep our streets and open spaces clean, green and safe, including by: supporting communities to assist us in caring for their streets and open spaces. The management of our streets and open spaces is supported by an active band of community volunteers. A High quality, environmentally friendly street and open space environments achieved. This will be measured by % of streets achieving Grade A cleanliness standard, Number of open spaces with active friends' groups, Number of volunteer hours contributed to maintaining streets and open spaces and the number of Green Flag sites

- Deliver the Streets and Open Spaces service development strategy, 2017-21, including investing in new technologies and ways of working. This will result in our Streets and Open Spaces service being able to respond to the impacts of growth and associated service demands without increasing costs. Our customers are able to raise and track streets and open spaces service requests digitally. This will be measured by Operational unit cost to maintain streets and open spaces

Local Council Strategy Documents

Open Space and Recreation Strategy for Cambridge City Council

Cambridge City Council produced the Open Space and Recreation Strategy (OSRS) 2011 to support the plan-making process. This strategy replaced the 2006 strategy, which was adopted in November 2006, incorporating relevant changes made to the Cambridge Local Plan 2006 during the Inquiry process. The 2011 strategy reassessed open spaces within the city, which were considered as a part of the previous strategy, evaluated a range of additional sites and included a new quality assessment of all sites surveyed.

The 2011 OSRS assessed around 400 sites across the city for their environmental and recreational importance and subsequent protected from new development. It also explains how some wards have significant open space deficiencies and is used by the Council to ensure on-site delivery in these areas where possible. The OSRS will be updated in 2020, subject to Covid-19 movement restrictions. This will take account of those sites previously assessed and new sites delivered since the 2011 assessment, this will include sites in South Cambridgeshire District Council which adjoin the fringes of Cambridge City Council, south of the A14, such as Orchard Park and east of the M11 such as Eddington and Trumpington Meadows.

Playing Pitch Strategy and Indoor Sports Facility Strategy for Greater Cambridge

Cambridge City Council and South Cambridgeshire District Council, in partnership with Sport England, developed two sports strategies: a Playing Pitch Strategy 2015-2031 for grass and all weather pitches covering both areas; and an Indoor Sports Facility Strategy 2015-2031 to guide future provision and management of indoor sports halls, swimming pools and outdoor cycling facilities to serve existing and new communities in Cambridge and South Cambridgeshire. These strategies assessed existing facilities, the future need for sport and active recreation facilities, and opportunities for new provision. The Playing Pitch Strategy and Indoor Sports Facility Strategy take into account planned growth to 2031. These will be updated to support the growth at both North East Cambridge and the proposed growth anticipated in the new Joint Local Plan for Greater Cambridge. These documents have the purpose of identifying strategic sports facilities such as full-size artificial grass pitches and sports halls..

It should be noted that Sport England advise the use of their Sports Facility Calculator to calculate the quantum of any formal sports provision generated by new large-scale residential developments. More details specific to North East Cambridge are provide below, in the section 'Sports England's Sports Facility Calculator'.

South Cambridgeshire Local Plan 2018

Policy NH/11: Protected Village Amenity Areas

Protected Village Amenity Areas are identified on the Policies Map where development will not be permitted within or adjacent to these areas if it would have an adverse impact on the character, amenity, tranquillity or function of the village.

Policy NH/12: Local Green Space

Local Green Space identified on the Policies Map will be protected from development that would adversely impact on the character and particular local significance placed on such green areas which make them valued by their local community. Inappropriate development, as defined in the NPPF, would not be approved except in very special circumstances and in discussion with the local community.

Policy SC/2: Health Impact Assessment

New development will have a positive impact on the health and wellbeing of new and existing residents. Planning applications for developments of 20 or more dwellings or 1,000m2 or more floorspace will be accompanied by a Health Impact Assessment to demonstrate this.

    a. For developments of 100 or more dwellings or 5,000m2 or more floorspace a full Health Impact Assessment will be required;

    b. For developments between 20 to 100 dwellings or 1,000 to 5,000m2 or more floorspace the Health Impact Assessment will take the form of an extended screening or rapid Health Impact Assessment.

Policy SC/7: Outdoor Play Space, Informal Open Space and New Developments

1. All housing developments will contribute towards Outdoor Playing Space (including children's play space and formal outdoor sports facilities), and Informal Open Space to meet the need generated by the development in accordance with the following minimum standards:

    a. Outdoor play space, informal open space and allotments and community allotments: 3.2 hectares per 1,000 people comprising:
        i. Outdoor Sport 1.6ha. per 1,000 people
        ii. Open Space 1.2ha. per 1,000 people
        iii. Allotments and community orchards 0.4ha. per 1,000 people

    b. Subject to the needs of the development the open space requirement will consist of:
        iv. Formal Children's Play Space 0.4ha. per 1,000 people
        v. Informal Children's Play Space 0.4ha. per 1,000 people
        vi. Informal Open Space 0.4ha. per 1,000 people

2. Only family dwellings of two or more bedrooms will be required to contribute to the provision of Children's Play Space.

3. Housing provision consisting of Sheltered housing, Extra Care housing, and residential and nursing homes will not be required to provide Outdoor Play Space except Informal Open Space.

4. Where appropriate, provision will be on-site so that provision is integrated into the development and benefits to the health and wellbeing of new residents are maximised, guided by Figure 10. However, an appropriate contribution will be

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required for "off-site" provision of the types of space not provided on-site. This may be for new facilities and/or improvements to existing facilities. On individual sites negotiation may take place on the types of space provided on site, taking account of the needs of the area, existing provision and any identified deficiencies in provision.

5. In developments of less than 10 homes, it is expected that only the Informal Open Space element will be provided on-site. Where an individual phase comprises 10 or fewer dwellings but will form part of a larger scheme exceeding that total, a proportional contribution to future on-site provision will be required.

6. Depending on the nature of provision, contributions may also be required to meet maintenance and/or operating costs either as pump priming or in perpetuity.

7. Where on-site provision is required, the Council may seek the option of a commuted capital sum to construct the facility. In these circumstances, a serviced site (as appropriate for the facility concerned) will be transferred to the Council free of charge by the developer.

Cambridge Local Plan 2018

Policy 7: The River Cam

The River Cam is of considerable importance to the city of Cambridge which Cambridge sweeps in from the rural hinterland to the heart of the city. The River Cam is a key part of the defining character of Cambridge[1].

The River Cam is a designated county wildlife site in recognition of the river's importance in linking semi-natural habitats, including ecologically designated Local Nature Reserves in the city with the wider countryside of South Cambridgeshire. The different aspects of the river are addressed in Policy 7 of the Cambridge Local Plan 2018 (CLP2018).

Policy 67: Protection of open space

An essential part of the character of the city stems from the spaces and grounds around buildings and their natural features. Policy 67 is the Council's established mechanism for protecting open space within Cambridge's administrative area. The loss or relocation of any formal sports facilities would also need to comply with Policy 73 (Community, sports and leisure facilities), where applicable.

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[1] Cambridge Landscape Character Assessment 2003

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Policy 68: Open space and recreation provision through new development

Policy 68 requires new residential developments to provide public open space with provision given early consideration in the design process. The specific requirements are calculated using the Open Space and Recreation Standards (see CLP2018, Appendix I) and will have regard to the Council's adopted Open Space and Recreation Strategy, Playing Pitch Strategy and Indoor Sports Facility Strategy.

Appendix I: Open Space and Recreation Standard

The Council's open space and recreation standards are listed in Table 1 below. They apply to all schemes for new residential developments and the requirement is based on the net number of residents accommodated in the new development.

Table 1: CLP 2018 Appendix I, Table I.1: Open space and recreation standards

Type of open space	Definition	Standard	CIL[+]	Onsite or S106[+]
Outdoor sports facilities	Playing pitches, courts and greens	1.2 hectares per 1,000 people	No	Yes
Indoor sports provision	Formal provision such as sports halls and swimming pools	1 sports hall for 13,000 people 1 swimming pool for 50,000 people	Yes	No
Provision for children and teenagers	Equipped children's play areas and outdoor youth provision	0.3 hectares per 1,000 people	No	Yes
Informal open space	Informal provision, including recreation grounds, parks, natural greenspaces and, in town centres or urban locations, usable, high quality, public hard surfaces	2.2 hectares per 1,000 people	No	Yes
Allotments	Allotments	0.4 hectares per 1,000 people	No	Yes

[+] Indicative, and subject to the adoption of the Community Infrastructure Levy and associated Regulation 123 list

Policy 73: Community, sports and leisure facilities

Policy 73 supports new and improved formal sports facilities where they improve the range, quality and access to facilities both within Cambridge and, where appropriate, in the sub-region. Proposals should have regard to the Playing Pitch Strategy and

Indoor Sports Facility Strategy. This policy is relevant to a wide range of facilities from health clubs and tennis courts to an indoor sports complex and swimming pools.

Provision for new sports facilities

Guidance on the provision of new indoor and outdoor sports facilities is provided in the Indoor Sport Facilities Strategy and Playing Pitch Strategy, respectively; both of which take into account planned growth to 2031. However, there will be instances where large windfall sites come forward which have not been accounted for in the strategies. Where this is the case, applicants should provide a sports strategy (also known as a facilities development plan) setting out the details of specific facilities to be developed, the rationale and need for these. The process will involve consultation with Sport England and the relevant National Governing Bodies for sport. At the time when these strategy documents were produced, the NEC area was not allocated for residential development and was therefore not included in these documents.

Provision for new on-site spaces

On-site provision for children and teenagers, informal open space and allotments should be considered at the early stage of design. This should consider how best these spaces can be provided on-site in accordance with the requirements of Policy 68 and the recommendations outlined in the council's Open Space and Recreation Strategy. In areas where there is a shortage of public open space, all attempts to maximise high quality, low maintenance on-site provision should be considered to avoid the over dependence on a limited number of existing public open space sites.

Quantum of new provision for a standard residential development in Cambridge

Appendix I, paragraph I.14 of CLP 2018 explains how the open space standards should be applied for each type of open space or sports provision for new residential proposals.

Applicants will need to calculate the number of new residents arising from the development using the number of bedrooms in each unit as a guide. Without knowing the type of dwelling proposed only the number, the city's most recent average number of residents per dwelling. At present, this is 2.3 people per dwelling.

Where more detailed knowledge of the dwelling size is known, a more accurate calculation of the indicative development population should be provided, based upon bedroom numbers e.g. a three bedroom house will be occupied by three people. This number will need to be provided in the design and access statement. The specific requirements are calculated using the Open Space and Recreation

Standards (see CLP2018, Appendix I) and will have regard to the Council's adopted Open Space and Recreation Strategy, Playing Pitch Strategy and Indoor Sports Facility Strategy.

Open Space & Recreation Standards To Be Applied at North East Cambridge

The NEC area straddles two local planning authorities each with their own open space standards for new residential development. These are based upon each area's general characteristics and needs; standards in South Cambridgeshire reflect its rural nature while those in Cambridge relate to its more urban environment. Due to the high-density nature of development at NEC, it is considered reasonable to apply the current adopted open space standards detailed in the Cambridge Local Plan 2018 including their recommended application and deficiency tests outlined in Appendix I.

Calculation of Open Space and Recreation Standards at NEC

Population Profile of NEC

The projected/estimated population figures provided by Cambridgeshire County Council are provided in table 2 below.

Table 2: Population Age Profile for North East Cambridge

Age	Population
0-3	1,655
4-10	1,348
11-16	608
17+	14,280
Total residential population	17,891

Sports England's Sports Facility Calculator

Applying the population profile of NEC (in Table 2 above) to Sports England's Sports Facility Calculator (SFC), generates demand for:

- Sports halls - 5.28 courts (1.32 sports halls, 4 courts). Cost £3.655m
- Swimming Pools - 182.86m2 (0.86 of a 4-lane pool). Cost £3.647m

The SFC looks at a specific area of population growth and what is needed there to meet the needs of that specific population.

More detail about how this provision can be delivered will be provide below, in the section 'Approach to Providing Open Spaces at North East Cambridge'.

Application of Open Space and Recreation Standards at NEC

Providing Open Spaces in High Density Developments

There is limited application in the rest of Greater Cambridge for high-density developments proposed at NEC however, there are samples found across the UK and Europe where high density developments have contributed positively towards open space and have delivered innovative and well managed facilities that provide opportunities for physical activity, public realm, landscaping, sustainable urban drainage and biodiversity/habitat.

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It is the intention of the NEC to provide as much open space on-site, where practical and subject to viability. However, it is recognised that these may take more innovate forms than might be normally provided in a traditional Cambridge development. Some facilities may also need to be provided off-site but still within an accessible location to NEC.

Some recreation activities and features typically available in low density developments such as private spaces can be substituted by public or semi-public/communal space. For example:

- Community gardens and allotments
- A shed space or similar for all age groups, for making things
- Dog parks and off-road trail circuits
- Social gathering spaces/doorstep play as communal open space
- A pleasant garden landscape for restorative values and civic pride
- Children's open space closer to medium high-density dwellings (i.e. 300m rather than 400m)

There is often a high demand for swimming pools and social court sports and gyms in higher density areas because of the relatively high proportion of young adults living in in this type of housing. However, apart from sports courts, it is not desirable that every development has a small gym or swimming pool as these have risk management issues and are often too small to deliver the quality of service sought.

Similarly, full-sized football pitches are unlikely to be provided on-site due to their single large land take. However, a range of alternative formal sports facilities could be provided on-site, these could include 5-a-side pitches, tennis, netball and other artificial court surfaces which can also support a range of other active pursuits.

The proximity of housing to existing public spaces may also exacerbate conflict between residents and sports and recreation activities due to, for example, the noise of children or sports or the provision of floodlights. Careful design will therefore be required to ensure these spaces avoid conflict. This may require some of these formal spaces to be provided inside to minimise noise and light pollution.

Where possible, new facilities will be provided on-site, it is also essential that nearby opportunities that are accessible to NEC are also considered to provide some of these facilities. This will also have the benefit of helping to integrate new and existing communities.

Approach to Providing Open Spaces at North East Cambridge

This section will outline how the standards should be applied providing suitable innovative examples for each type of open space and how the need generated by the development could be provided.

Given the high-density characteristics of the proposed development at NEC, the approach to delivering the various types of open spaces will need to be tailored accordingly to making the best use of the limited land available. Notwithstanding this, it is recommended that open space provision to serve the NEC area is met in the first instance on-site and through off-site contributions as an exceptional circumstance through the provisions set in the existing Cambridge Local Plan 2018 Policy 68.

Standards Compliance

Proposals that require the delivery of open space through new development should explain how the proposed on-site provision and off-site contributions comply with the standards.

Design

Any on-site provision should be an integral part of the overall development scheme and therefore should be considered at the earliest stage of design.

Delivery

Unless otherwise agreed with the Local Planning Authority, where relevant, the S106 agreement should ensure the delivery of on-site provision is linked and effectively phased to the delivery of new residential units.

While the presumption is to provide as much formal sports provision and open space on-site, it is also essential that any existing open spaces deficiencies in neighbouring residential areas are identified. These could provide opportunities for new off-site provision in order to meet the need of both new and existing communities. These spaces could also allow new provision during the construction phase to meet the needs of early new residents. This approach would also support integrating the new community with neighbouring communities.

Open Space Resilience

There is a need to build in resilience and capacity into the existing open space provision for NEC. Alongside any on-site provision, opportunities to use S106 contributions outside the city on large-scale green infrastructure should be considered. This will avoid pressure building up on existing parks, open spaces and cycleways, which might otherwise lose their biodiversity and other qualities. For example, undertaking negotiations for specific S106 contributions for growth sites straddling the Cambridge/South Cambridgeshire boundary could explore opportunities for improving existing parks beyond the city (e.g. Milton Country Park) in order to avoid over-investment in and over-use of the city's parks.

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Connectivity with Other Open Spaces

It is essential that new and existing spaces are integrated within the area's urban form and connected with footpaths, running trails and cycle routes. They should also be linked to surrounding green spaces to form an extensive green network which supports active and healthy lifestyles.

Given the area's high-density urban character, it is important that development proposals facilitate improved access to important neighbouring green spaces, including Milton County Park and other facilities in North Cambridge.

There is a need to build in resilience and capacity into the existing open space provision for NEC. Alongside any on-site provision, opportunities to use S106 contributions outside the city on large-scale green infrastructure should be considered. This will avoid pressure building up on existing parks, open spaces and cycleways, which might otherwise lose their biodiversity and other qualities. For example, undertaking negotiations for specific S106 contributions for growth sites straddling the Cambridge/South Cambridgeshire boundary could explore opportunities for improving existing parks beyond the city (e.g. Milton Country Park) in order to avoid over-investment in and over-use of the city's parks.

NEC provides a unique opportunity for the enhancement, extension and improved connectivity of areas such as Bramblefields Local Nature Reserve (LNR), the protected hedgerow on the east side of Cowley Road (City Wildlife Site) and the First Public Drain wildlife corridor and other habitats including ponds and areas of woodland, scrub and grassland. It also provides an opportunity to create a new biodiversity hotspot at Chesterton Fen which can deliver a suite of priority habitats and species that reflect the local landscape. This feature would also serve as a green gateway on the edge of the city which connects to wider schemes such as the National Trust Wicken Vision as well as the River Cam corridor. This offers greater opportunities for public engagement with nature, and the subsequent health and well-being benefits that this brings.

Relevant City/Area-Wide/Regional Strategies

All forms of new open space should support relevant city/regional strategies, where possible, such as the Cambridgeshire Green Infrastructure Strategy.

Flexible/Multi-functional Spaces

All spaces should be both flexible and multi-functional, where practical to do so and allow for a range of 'occasional' events that will help support community activities and sporting events. It is essential that communities can use spaces to foster community interaction and allow people to follow a healthy lifestyle, for all ages throughout the year.

Highly Accessible Spaces

All on-site communal open spaces will need to be high quality, low maintenance and multi-functional to maximise their utility as well as being both available and functional throughout the year.

In Spring, they should encourage people to spend time outdoors. In Summer, they should provide sufficient shade to allow play and minimise localised solar heating, e.g. they should allow some respite from excessive heating during long hot summer days. In Autumn, they should be sufficiently sheltered to allow their continued use, e.g. they should not be located in exposed areas that discourage their use in windy conditions. In Winter, these areas should also be usable spaces e.g. they should not be subject to surface water flooding due to prolonged bouts of rain.

Planning proposals for formal sports facilities (e.g. pitches, pools and courts) will be considered against the requirements set out in NEC Policy 9: Social and Community Infrastructure.

Private ancillary sports and, or leisure facilities incorporated into an employment centres or single, large employment development

Employment centres and, or large, single employment developments may want to include some sports and leisure facilities for use by their employees. It is important that these facilities are commensurate in size to the number of people expected to use them. These should also not have an adverse impact on other similar sports and leisure facilities.

Proposals for ancillary corporate sports and leisure facilities, as part of an employment centre and, or large employment development should therefore use Sport England's Sports Facility Calculator, where possible to calculate the quantum of sports provision generated by the number of people expected to be employed on-site new large-scale employment centres incorporating their own sports and leisure facilities.

Formal Outdoor Sports Provision

New on-site, publicly available formal sports facilities could include 5-a-side pitches, tennis, netball and other artificial court surfaces which can also support a range of other active pursuits.

Trim trails, pedestrian paths and cycle routes can also contribute to formal outdoor space if they are of a sufficient size and standard (which is maintained) to allow for sports events. These routes should be of sufficient width to avoid conflict between pedestrians, runners and cyclists. These should also be of sufficient length to support regular activities such as '5km' park runs and parts of a triathlon circuit.

Opportunities to make existing NEC facilities publicly available, at certain times such as those at Cambridge Regional College will be explored. Given the specific constraints of the land available, a small portion of the formal outdoor spaces may need to be provided inside to minimise noise and light pollution as well as facilitating their availability throughout the year.

With improved access to Milton Village's existing sport and leisure facilities (with a new underpass under the A14) comes the opportunity of providing additional formal sports provision at this location, to help meet the needs of NEC. This will require careful consideration to ensure the needs of both the new and existing communities are met.

Due to the potential for flooding, the Chesterton Fen area will not be considered as part of any calculation for formal recreational provision.

Indoor Sports Provision

Applying the projected NEC demographics to Sport England's Sports Facility Calculator, NEC will generate a need for: 1.32 sports halls or 4 courts; and 182.86 sqm or 0.86 of a 4 lane swimming pool.

A new sports hall could be provided on-site as part of a new community, sports, leisure hub. Alternatively, the Indoor Sports Facility Strategy indicates that there is capacity to expand premises at North Cambridge Academy's 3 court sports hall with existing community access. This type of facility is will ensure both new and existing communities can benefit from a range of accessible activities across the wider northern Greater Cambridge area.

In terms of swimming pool provision, Cambridge City and South Cambridgeshire Councils have commissioned a Swimming Pool Delivery Strategy for Greater Cambridge. In addition to NEC's demand for approximately 0.8 of a swimming pool, there are a number of other proposed swimming pools in the area (West Cambourne, Northstowe and Waterbeach).

The study will: analyse demand for swimming pools in NEC and the wider Cambridge area, using Sport England's Facilities Planning Model; analyse existing supply (including new provision); and advise on how best to deliver swimming pool provision across Greater Cambridge including NEC. It is anticipated that NEC development will collect monies for swimming pool provision which will be invested in off-site swim provision, accessible to NEC residents.

Provision for children and teenagers

On-site, a range of spaces should be provided to cater for all ages including teenagers. They should also be close proximity to residential areas. It is expected that more people will be living in much taller buildings than those normally found in other parts of Cambridge. This means, more time is taken to access the ground floor

level. To compensate for this, open spaces close to medium high-density dwellings should be no more than 300 metres away, in actual walking distance rather than the norm of 400 metres.

In exceptional circumstances, where it is considered more beneficial to provide facilities off-site, then regard for existing open spaces deficiencies in neighbouring residential areas should be identified and considered for off-site provision. Cambridge's Outdoor Play Investment Strategy contains 'Target Lists' for Kings Hedges and East Chesterton and should therefore be considered when considering off-site provision and/or enhancement to existing facilities.

North of NEC, Milton Country Park and Milton Village have several existing sport and leisure facilities. Whilst access to these facilities will be improved through a new underpass under the A14, these are not considered sufficiently accessible for children to access from NEC.

Informal open space

Where possible, despite the limited amount of space available, as much informal open space as possible should be provided on-site. Where it is not possible to do so, then this deficient should be compensated by ensuring those spaces provided are very high-quality similar to that of an established park area which are able to cater for all-ages throughout the year.

These park areas will be flexible, highly accessible and multi-functional spaces, where practical to do so and allow for a range of 'occasional' events that will help support community activities and sporting events. It is essential that communities can use spaces to foster community interaction and allow people to follow a healthy lifestyle, for all ages throughout the year.

They should also support regional/city/area-wide strategies, where practical such as mitigating flood risk and the effects of climate change as well as supporting ecological initiatives and enhancing the area's biodiversity.

Several specific off-site opportunities that will benefit NEC by providing access to informal open spaces have been identified. In addition to the requirement to provide high quality informal open space, specific off-site contributions will be sought towards informal open space at Bramblefields nature reserve, Milton Country Park; Orchard Park, Chesterton Fen and accessibility to River Cam including pedestrian/ cycle bridge crossing over railway.

The River Cam will also be made more accessible through new pedestrian and cycling routes and this will provide access to informal recreation space and serve wider needs.

Allotments

It is unlikely that there will be sufficient space to provide all of this space on-site. Off-site provision should therefore be considered to provide this. On-site community gardens, communal shed spaces and integrated areas supporting local food production will also be an acceptable format. A balance will need to be found that maximises the benefits to the local community and environment.

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Policy 23: Open Space, Sport and Recreation Standards

Policy 23: Open Space, Sport and Recreation Standards requires new residential development to provide new opens spaces and recreational facilities. It also explains how this is calculated, for all types of spaces. Normally, informal and formal children's play spaces are provided on-site with off-site contributions collected to finance much larger one-off facilities like sports halls and swimming pools.

Policy 9: Social and Community Infrastructure

Policy 9 is applicable for all formal sports and leisure facilities (all leisure categories in Table 8.3 of the CLP2018), both public and private to ensure these and other relevant matters are given careful consideration.

Proposals for new formal leisure facilities often involve a much wider catchment area than their immediate neighbourhoods and can therefore have an adverse impact on similar facilities in neighbouring communities which need to be given careful consideration before approval. These also include gymnasiums.

This is also the case for ancillary formal sports and leisure facilities provided as part of an employment centre or a large, single development provided for use by their employees. It is important that these facilities are commensurate in size to the number of people expected to use them. These should also not have an adverse impact on other similar sports and leisure facilities.

Proposals for ancillary corporate sports and leisure facilities, as part of an employment centre and, or large employment development should therefore use Sport England's Sports Facility Calculator, where possible to calculate the quantum of sports provision generated by the number of people expected to be employed on-site new large-scale employment centres incorporating their own sports and leisure facilities.

Delivery Comparison of Public Open Space between the Southern Fringe and North East Cambridge (AAP)

Open Space & Recreation Standards

As discussed above in this paper, the Council's open space and recreation standards are listed in Table I.1 of the Cambridge Local Plan 2018. They apply to all schemes for new residential developments and the requirement is based on the net number of residents accommodated in the new development. The current 2018 standards are different to the standards in the Cambridge Local Plan 2006 which

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were applicable for most planning application in Cambridge including Clay Farm in the Southern Fringe of Cambridge. The main difference is as follows:

Table 3: Summary of differences between the 2006 and 2018 Cambridge Open Space Standards

Open Space Type	2006 Local Plan (per 1,000 population)	2018 Local Plan (per 1,000 population)
Informal open space	1.8 hectares	2.2 hectares
Allotments	0.4 hectares for urban extensions only	0.4 hectares for all developments

Open Space Provision Calculation

This section provides a summary of the estimated amount of space that NEC will need to provide or contribute towards. These calculations use the Local Plan 2018 Open Space & Recreation Standards (see Table 1) unless an alternative means of calculation will be used. It should be noted that the standard is applied to the total population for the applicable age group(s) listed in NEC's Population Profile (see Table 2). An indicative approach to delivering these different types is also provided.

As discussed earlier, delivering open spaces in high-density developments, where there is a limited amount of space available, there are alternative high-quality means of providing open spaces which achieve the same outcomes as those provided in traditional residential developments. Quality and availability are often more important that the actual quantum provided. The challenge is to incorporate as much as possible on-site with innovative types of spaces which encourage active and healthy lifestyles which are available, throughout the year. Table 4 provides a summary of the amount of open space that should be provided, based upon the current standards and population profile and how these types could be provided on or off-site.

Table 4: Summary of Open Space Provision Calculation by Open Space Typology

Open Space Typology	Quantum needed	Delivery
Formal outdoor provision (Playing	(16,236 people @ 1.2 ha/1000)	On-site (tennis courts, running trails and other formal all-weather spaces).

pitches, Courts & Greens)	19.4 hectares	Possibility that some extra indoor provision provided (increased public accessibility) to ensure space is usable in all-weathers. An updated Local Plan Playing Pitch Strategy will also plan for off-site pitch provision nearby along with other growth to 2040. This update may also change the quantum of formal outdoor provision required by North East Cambridge.
Formal provision of sports halls	5.28 courts (1.32 sports halls, 4 courts) Sports England's Sports Facility Calculator	On-site. Options include new community hub, an extension to Cambridge Regional College as well as at North Cambridge Academy. An updated Local Plan Indoor Sports Facility Strategy will also plan for NEC development along with other growth to 2040. This update may change the quantum of formal indoor provision required by North East Cambridge.
Formal provision of swimming pools	182.86m2 (0.86 of a 4-lane pool). Sports England's Sports Facility Calculator	Off-site. Swimming Pool Delivery Strategy for Greater Cambridge will report on how NEC can contribute to an accessible swimming pool nearby.
Informal open space	(17,891people @ 2.2 ha/1000) 39.3 hectares	Unlikely full quantum will be provided on-site. High quality park areas to be provided to allow them to be useable throughout the year.
Informal provision of natural greenspaces	There is no specific standard requirement for this category.	Access will be provided by facilitating access to local green infrastructure.
Multi-Use Games Area (Tennis	Category is part of formal outdoor	On-site

/netball/5-a-side football nets)	provision	
Equipped children's play areas	(3,611 people @ 0.3 ha/1000) 1.1 hectares	On-site provision including: Local Area of Play (LAP); Local Equipped Area for Play (LEAP); Neighbourhood Equipped Area for Play (NEAP); and Space for Imaginative Play (SIP). Possibility that some is provided off-site on open spaces nearby.
Allotments	(16,236 people @ 0.4 ha/1000) 6.5 hectares	On-site in the form of community garden/sheds/orchards

Formal Indoor Sports & Swimming Provision Calculation

As discussed above in the section 'Sports England's Sports Facility Calculator', Sport England treat the standards for both outdoor and indoor formal sports provision as an indicative measure of what should be provided for these typologies. This means they can be used for high-level master planning when there is limited detail about the future population's profile. However, once this is known, it should be applied to Sports England's Sports Facility Calculator (SFC). For NEC, the SFC generates demand for:

- Sports halls - 5.28 courts (1.32 sports halls, 4 courts). Cost £3.655m
- Swimming Pools - 182.86m2 (0.86 of a 4-lane pool). Cost £3.647m

Formal Outdoor Sports Provision Calculation

Given the unique high-density nature of NEC, it is not envisaged large, strategic outdoor pitches will be provided on-site that have been traditionally provided in developments such as those at Trumpington Meadows and Clay Farm, rather these would be delivered in the form of more smaller, flexible all-weather surfaced courts and other forms of outdoor facilities such as a designated running trails supporting and encouraging regular running and outdoor fitness activities. These would be separate to cycling lanes and walking trails.

The Playing Pitch Strategy will also be updated to inform the Greater Cambridge Local Plan. This review will take account of the growth planned at NEC along with other growth to 2040 and recommend how off-site pitch provision could be provided nearby.

Comparison to Providing Open Spaces at North East Cambridge

Below is a general summary of open space provision for NEC and Cambridge Southern Fringe, for the purpose of providing an indicative comparison between the two developments. It should be noted that swimming provision is an off-site contribution for both developments and therefore does not feature in the comparison table below.

Formal provision of sports halls for NEC is 1.32 sports halls (4 courts). At the Southern Fringe, A 4 court sports hall is provided however public access is restricted because the facilities (including some formal outdoor sports spaces) are shared with Trumpington Community College. The remaining open space categories are listed below for indicative comparison.

Table 5: Comparative Summary of Open Space Provision between North East Cambridge and the Southern Fringe

	NEC	Southern Fringe
Population (approx.)	**17,891**	**9,232**
No. of dwellings	**8.400**	**4,000**
Open Space Typology	**Hectares**	**Hectares**
Formal outdoor provision (Playing pitches, Courts & Greens)	19.4	11
Informal open space	39.3	16.6
Equipped children's play areas:	1.1	2.7
Allotments	6.5	3.6
Total	**66.3**	**33.9**
Total per 1000 Pop	**3.70**	**3.68**

These figures are relatively the same because the applicable standards are similar. The main differences are with equipped children's play areas and informal open space. Given the relatively low number of children expected to live at NEC (see Population Profile above) there will less need for equipped children's play areas.

The requirement for informal provision for parks is also relatively higher in part because the 2018 Open Spaces & Recreation standard was increased by 0.4 hectares per 1000 population. However, it should be noted that it is unlikely that this

quantum will be achieve on-site. While there are several identified opportunities to increase access to informal open space. Nonetheless, there is significant potential to offset the reduced quantum of on-site provision by providing much higher-quality spaces, equivalent to that of an established pocket park.

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Appendix C6: Retail & Commercial Leisure Topic Paper

Introduction

A key aspect of sustainable communities is good access to shops and other local services such as cafés and restaurants which help meet the day-to-day needs of the local communities. It is therefore important that both new and existing communities have easy access to these types of facilities, including during the construction phase to reduce the need for residents to travel and, maintain vibrant and viable local and neighbourhood centres

Cambridge's city centre provides the majority of the city's floorspace for both retail and commercial leisure activities. As such, for local people it is an important destination for shopping, tourism, cultural, arts and recreational pursuits and serves as a regional destination for retail, arts and other leisure activities.

At a more local scale, the various district, neighbourhood and local centres distributed around the city provide a range of local services and community facilities that serve the day-to-day needs of residents and local workers. A good example of which is Mill Road, located to the east of the city centre consisting of two district centres, one on either side of the main railway bridge. The road is characterised by its large number of diverse and independent retail traders creating a cosmopolitan feel to the area. There are a wide range of restaurants, cafés and hot food takeaways, particularly west of the railway bridge, which add to its viability although this can also lead to amenity problems.

It is therefore important that new centres help nurture equivalent diversity and distinctiveness of an area. This can be achieved by promoting a range of retail options including independent retailers to avoid creating bland, unappealing centres. Similarly, it is important to limit the number of uses that, if allowed to dominate an area could lead to anti-social behaviour and amenity issues.

The broad range of services and facilities already provided in and around the city make an important contribution to the vibrant and diverse character of the city and its charm as a place to inhabit and visit. It is therefore essential that any new centres at NEC are given careful consideration to ensure they do not have an impact on those that already exist.

This topic paper has the purpose of explaining how new retail proposals at North East Cambridge should contribute to new and existing centres.

Key Documents

- National Planning Policy Framework / Guidance
- Cambridgeshire Green Infrastructure Strategy
- The Greater Cambridge Retail and Leisure Study (2020)
- NEC Retail Statement (2020)
- Cambridge Local Plan 2018

National Planning Policy Framework / Guidance

National Policy (NPPF)

A revised National Planning Policy Framework was published February 2019. National policy in the NPPF includes the presumption in favour of sustainable development at the heart of the planning system. This sets a clear expectation on planning authorities to plan positively to promote development and create sustainable communities.

Annex 2 of the NPPF, in the glossary defines:

Main town centre uses as "Retail development (including warehouse clubs and factory outlet centres); leisure, entertainment and more intensive sport and recreation uses (including cinemas, restaurants, drive-through restaurants, bars and pubs, nightclubs, casinos, health and fitness centres, indoor bowling centres and bingo halls); offices; and arts, culture and tourism development (including theatres, museums, galleries and concert halls, hotels and conference facilities)."

Town centre as "Area defined on the local authority's policies map, including the primary shopping area and areas predominantly occupied by main town centre uses within or adjacent to the primary shopping area. References to town centres or centres apply to city centres, town centres, district centres and local centres but exclude small parades of shops of purely neighbourhood significance. Unless they are identified as centres in the development plan, existing out-of-centre developments, comprising or including main town centre uses, do not constitute town centres."

Paragraph 53 supports the use of Article 4 directions to remove national permitted development rights should be limited to situations where this is necessary to protect local amenity or the well-being of the area.

Paragraph 85 explains how planning policies and decisions should support the role of centres, by taking a positive approach to their growth, management and adaptation. Planning policies should: a) define a network and hierarchy of centres and promote their long-term vitality and viability. A flexible approach should also be taken to support their growth as well as allowing them to adapt to changes in the

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retail and leisure industries, permitting a suitable mix of uses which reflects their distinctive characters; b) define the centres and the range of uses permitted in such locations, as part of a positive strategy for the future of each centre; and d) allocate a range of suitable sites in town centres to meet the scale and type of development likely to be needed.

Paragraph 86 advises Local Planning Authorities to apply a sequential test to planning applications for main town centre uses that are not in an existing centre and are not in accordance with an up-to-date Local Plan.

Paragraph 89 recommends an impact assessment is completed if the development is over a proportionate, locally set floorspace threshold (if there is no locally set threshold, the default threshold is 2,500m of gross floorspace). This should include assessment of: a) the impact of the proposal on existing, committed and planned public and private investment in a centre or centres in the catchment area of the proposal; and b) the impact of the proposal on town centre vitality and viability, including local consumer choice and trade in the town centre and the wider retail catchment (as applicable to the scale and nature of the scheme).

Paragraph 90 advises that if an application fails to satisfy the sequential test or is likely to have significant adverse impact on one or more of the considerations in paragraph 89, it should be refused.

Paragraph 91 explains how the planning policies and decisions should aim to achieve healthy, inclusive and safe places. The should a) promote social interaction, including opportunities for meetings between people who might not otherwise come into contact with each other, examples of which include mixed-use developments, strong neighbourhood centres, highly accessible street layouts for both pedestrians and cyclists; and active street frontages; b) are safe and accessible, which reduce crime and the fear of crime, include high quality public space, which encourage the active and continual use of public areas; and c) enable and support healthy lifestyles, including identified local health and well-being needs, examples include the provision of local shops, access to healthier food and layouts that encourage walking and cycling.

Paragraph 92 explains how planning policies and decisions should provide social, recreational, and cultural facilities including services needed by the community. It includes the need for: (a) local authorities to plan positively for the provision of community facilities such as local shops, meeting places, public houses and other local services to enhance the sustainability of communities and residential environments; (b) take account of, and supporting the delivery of local strategies to improve the health, social and cultural well-being of all sections of the community; c) guard against the unnecessary loss of valued facilities and services, particularly where this would reduce the community's ability to meet its day-to-day needs; d) ensure that established shops, facilities and services are able to develop and

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modernise, and are retained for the benefit of the community; and e) ensure an integrated approach to considering the location of housing, economic uses and community facilities and services.

National Guidance (NPPG)

National Guidance (NPPG) provides a series of notes about retail, the function of centres and importance of creating healthy environments. These include explanations about how centre uses can be allowed to change as well as providing more detail about the application of a sequential test and impact assessment. Given the detailed guidance, these are only summarised as follows:

Paragraph: 001 Reference ID: 2b-001-20190722

This section summarises the role planning authorities can perform in supporting centres and how to do so including, the promotion of a centre's vision and the assessment of the impact this may have on neighbouring centres. The inclusion of a wide range of complementary uses can, help to support the vitality of centres. The same is true of temporary activities such as 'pop ups', which will often benefit from permitted development rights.

Evening and night time activities have the potential to increase economic activity within centres and provide additional employment opportunities. They can allow centres to diversify and help develop their unique brand and offer services beyond retail. In fostering such activities, local authorities will also need to consider and address any wider impacts in relation to crime, noise and security.

Paragraph: 007 Reference ID: 2b-007-20190722

When is planning permission not required for changes involving town centre uses?

This section briefly summarises when planning permission is required and includes examples of some permitted development rights that allow a change of use without any application process. Further detail is also provided for some permitted development rights that allow for a change of use subject to prior approval by the local planning authority for specific planning matters.

Paragraph: 008 Reference ID: 2b-008-20190722

Are there other permitted development rights that can support flexibility in town centres?

To support new ventures and pop-ups and avoid buildings being left empty, a separate right allows a range of uses to convert temporarily to another use for a single continuous period of up to three years. This allows start-ups to test a new business model, and then to seek planning permission for the permanent change of use on that or another site.

The same right now allows for the temporary change of use to specified community uses (health centre, art gallery, museum, public library, public hall or exhibition hall) to provide a greater mix of uses on the high street and increase footfall, and bring community uses closer to communities.

Other permitted development rights provide for physical works to support the operation of shops or financial and professional services.

Paragraph: 009 Reference ID: 2b-009-20190722

What is the sequential test?

The sequential test guides main town centre uses towards town centre locations first, then, if no town centre locations are available, to edge of centre locations, and, if neither town centre locations nor edge of centre locations are available, to out of centre locations (with preference for accessible sites which are well connected to the town centre). It supports the viability and vitality of town centres by placing existing town centres foremost in both plan-making and decision-taking.

Paragraph: 010 Reference ID: 2b-010-20190722

How should the sequential approach be used in plan-making?

In plan-making, the sequential approach requires a thorough assessment of the suitability, viability and availability of locations for main town centre uses. It requires clearly explained reasoning if more central opportunities to locate main town centre uses are rejected.

This section provides a checklist setting out the matters that need to be considered when using the sequential approach as part of plan-making. These include

- A needs assessment for main town centre uses.
- An assessment of alternative town centre site for their suitability, accessibility, availability and viability
- An assessment of the next sequentially preferable sites

Paragraph: 011 Reference ID: 2b-011-20190722

This section explains how the sequential test should be used in decision-making. The application of the test will need to be proportionate and appropriate for the given proposal. Where appropriate, the potential suitability of alternative sites will need to be discussed between the developer and local planning authority at the earliest opportunity. A checklist of considerations is also provided to determine whether a proposal complies with the sequential test.

Paragraph: 012 Reference ID: 2b-012-20190722

How should locational requirements be considered in the sequential test?

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Use of the sequential test should recognise that certain main town centre uses have particular market and locational requirements which mean that they may only be accommodated in specific locations. Robust justification will need to be provided where this is the case, and land ownership does not provide such a justification.

Paragraph: 013 Reference ID: 2b-013-20190722

How should viability be promoted?

The sequential test supports the Government's 'town centre first' policy. However as promoting new development on town centre locations can be more expensive and complicated than building elsewhere, local planning authorities need to be realistic and flexible in applying the test.

Paragraph: 003 Reference ID:53-003-20191101

A healthy place is defined as one which supports and promotes healthy behaviours and environments and a reduction in health inequalities for people of all ages. It will provide the community with opportunities to improve their physical and mental health, and support community engagement and wellbeing.

It is a place which is inclusive and promotes social interaction. It meets the needs of children and young people to grow and develop, as well as being adaptable to the needs of an increasingly elderly population and those with dementia and other sensory or mobility impairments.

Local Council Strategy Documents

The Greater Cambridge Retail and Leisure Study

The Greater Cambridge Shared Planning Service have commissioned The Greater Cambridge Retail and Leisure Study to support the review of the joint Local Plans for Cambridge and South Cambridgeshire. The study comprises of three sections: a review of current retail and leisure provision in Greater Cambridge; a NEC Retail Statement (2020) informing the quantum of retail needed to support the vision for the North East Cambridge Area Action Plan; and to inform plan preparation of the Greater Cambridge Local Plan.

NEC Retail Statement (2020)

The NEC Retail Statement (2020) draws on evidence collated as part of The Greater Cambridge Retail and Leisure Study and focuses on the NEC area, setting out the required response to the Study Brief in order to inform the preparation of the AAP. Based on sound evidence, it advises on the scale and mix of retail and leisure floorspace within the NEC, addressing the opportunities and challenges for the site and identifying how provision will relate to existing town centres and also the needs of surrounding existing communities.

It provides conclusions on the most appropriate scale of retail and leisure floorspace to ensure the new development meets the needs of the emerging new community whilst seamlessly integrating into the existing network and hierarchy of centres. The Councils require this piece of work to provide assurance that new retail floorspace will not have a detrimental impact on existing centres. The outputs provide recommendations in respect of retail policy to inform preparation of the preferred option AAP.

It sets out the total floorspace for each centre and a guide to the number and size of units in each to advise on commercial composition and scheme design. These should support smaller shops providing local shopping facilities and small-scale commercial services/facilities such as cafés and restaurants to help meet the day-to-day needs of local people. The figures include providing convenience foodstores in each centre, such as a larger store of 800 sq m net within the district centre. It also notes that any changes within the overall floorspace threshold (i.e. larger store, more than one anchor store) must be considered alongside the car free vision of NEC and related issues around car parking levels.

The Retail Statement also explains the recommended floorspaces for comparison retail, i.e. non-food shops and for all other uses within each centre. It also includes consideration for the use of Article 4 Directions to restrict changes of use that do not

require planning permission, but which could adversely affect the vitality and vibrancy of NEC's centres.

Cambridge Local Plan 2018

Policy 6: Hierarchy of centres and retail capacity

Policy 6 outlines the hierarchy of centres in Cambridge along with the circumstances when a sequential approach and, or impact assessment are required. It also explains the amount of retail capacity that is needed to be provided and where this should be delivered.

Policy 10: The City Centre

Policy 10 ensures that Cambridge City Centre is the primary focus for developments attracting a large number of people and for meeting retail, leisure, cultural and other needs appropriate to its role as a multi-functional regional centre. Particular focus is also given towards retail, leisure and other mixed uses at the Fitzroy/Burleigh Street/Grafton Area of Major Change, under Policy 12.

Policy 72: Development and change of use in district, local and neighbourhood centres

Policy 72 controls new A1 (shop) uses and other uses in Cambridge's district, local and neighbourhood centres explaining when these will be permissible including the uses suitable on ground floors and those above.

Policy 73: Community, sports and leisure facilities

This policy is applicable to existing facilities and sites last used for community, sports or leisure purposes, in order to avoid situations where these facilities are lost through demolition without any planned replacement facility. The definition of community facilities is provided in Table 8.2, overleaf. Community facility and leisure categories are defined in Table 8.3, overleaf. A community facility category is related to its size and the area it serves while the three broad leisure categories (sports, arts and culture, and entertainment) relate to their function.

Commercial leisure is treated as any leisure use that receives no public subsidy. These can include any use in either of the three leisure categories below as well as other uses such as a café, public house or restaurant where people congregate in their leisure time.

Table 8.2: Definition of community facilities

Community facilities include:

•   Uses in class D1[1] (non-residential institutions), except university teaching accommodation. Core class D1 uses include:
      o   the provision of traditional and complementary medical or health services, except for the use of premises ancillary to the home of the consultant;
      o   the provision of education;
      o   a crèche, day nursery or playgroup;
      o   a place of worship or religious instruction;
      o   a community centre, public hall or meeting place; and
      o   a public library
•   A local retail unit or public house (Note: safeguarded public houses are specifically addressed by Policy 76).
•   The following sub-categories of class C2 (residential institutions):
      o   hospitals, residential schools, colleges or training centres; and
      o   other uses that provide either a community service or a public utility such as facilities for the emergency services, public toilets and court buildings.
N.B. The lists of uses are not exhaustive.

Table 8.3: List of community facility and leisure categories

Category of provision	Example uses (not exhaustive). A use may fall into more than one category depending on the area it serves
Local	• A community or civic room
Neighbourhood	• Community house – typically the size of an average three-bed house – or community hall • Primary school • Day nursery
District	• Public library • Primary care facility • Community centre and other shared use/services buildings • Function room • Secondary school • Place of worship
City-wide	• Acute health care • Civic and court buildings • Colleges and universities
Leisure category	**Example uses (not exhaustive)**
Leisure sports	Leisure sport facilities allow for supervised, organised or competitive sports, primarily indoors. Facilities include sports stadia, ice rinks, sports halls, boxing centres, badminton and

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[1] Use Classes Order (as amended)

	squash courts, swimming pools (including outdoor), gymnasiums, indoor bowling centres, indoor tennis centres, health and fitness centres
Leisure arts and culture	Arts and cultural uses such as concert halls, performance venues and theatres, cinemas, ten-pin bowling alleys, punting stations, museums and galleries
Leisure entertainment	Nightclubs, snooker/pool halls, bowling alleys

Approach to Providing Retail at North East Cambridge

How the retail policy does what it does and why

Strong local centres to serve the needs of local people living and working at NEC

NEC will provide a balanced range of shops and services that meet the needs of local residents, employees and visitors to the area while not creating a 'destination' location for people living further afield and reduce the reliance to travel by car.

In order to achieve these aspirations, it is essential that new centres provide local-in-scale uses that do not create a need for ancillary car parking which may in turn facilitate and motivate people to drive to the area. It is therefore necessary to resist any proposal that will create a need for specific car parking provision.

It is essential that NEC develops strong, accessible neighbourhood centres, by supporting a balanced yet diverse range of uses. These will meet the day-to-day needs of local people with clear intent to limit those uses which can encourage anti-social behaviour or unhealthy lifestyles. Strong and attractive centres cannot be created if they are dominated by a concentration of either less active uses such as a row of betting shops or night-time uses such as a row of takeaways. An over-concentration of these types of uses could lead to amenity issues.

Attractive, accessible and well-designed centres will also support their vibrancy and activity. This, in turn helps form and support local communities as well the character of the area. They can also encourage healthier lifestyles by providing opportunities to shop on foot or on bike as well as reducing the need for people to drive to access the most basic of necessities. It is important to create healthy, inclusive and safe places to ensure they support their local communities.

Hierarchy of Centres & Quantum of Permissible Development

Policy 10a defines: the proposed hierarchy of centres, i.e. the district, local and neighbourhood centres; the quantum of permissible floorspace for each type of floorspace category: convenience (food shopping); comparison (non-food) shopping;

and all other uses. It also explains how these different categories should be delivered including how the balance between these different categories will be maintained with relevant planning applications.

A1 Convenience 'Anchor' Foodstores

Every centre will, ideally have at least one convenience food store to act as an 'anchor' for the centre to attract people to do their food shopping. These will be commensurate to the size of the centre. This should be achievable within the District Centre by having at least two different food stores that vary in size from between 400 and 800 sqm along with other smaller scale, independent shops. In other local and neighbourhood centres, at least one convenience store should be provided in each centre, providing approximately 200 sq m and 150 sq m net floorspace, for each store in the local and neighbourhood centres, respectively.

As a minimum, a third of the floorspace available in the centre should be retained for A1 convenience food shopping. In effect these uses will act as an 'anchor' store for other centre uses. Proposals that lead to the loss of this minimum 30% threshold should be resisted to avoid undermining the centre's main purpose of meeting the everyday needs of local residents and employees.

Smaller A1 convenience food shops and other non-food shops

The proposed convenience use capacities (outlined in Policy 10a) indicate enough capacity, in all the centres to provide for these convenience food stores along with a range of smaller, individual food and non-food shops. Based upon the popularity and success of Mill Road in Cambridge, the vision for NEC's centre is to help re-create this same appeal with a range of individual shops which will in turn help them foster their own popular identity and character.

Other Town Centre Uses

Other town centre uses will help foster opportunities for greater social interaction, provide services to meet the day-to-day needs of local residents and workers alike as well as complementing the proposed food and non-food shops.

A range of diverse and independent retail traders will help create strong and vibrant centres. It is, however recognised that hot food takeaways and betting shops are often quite prevalent in such centres; a concentration of which can also have an adverse effect on local amenity. An issue experienced on Mill Road in Cambridge. The proximity of takeaway outlets to schools can also increase the risk of young

people regularly eating unhealthy food. This can have a significant negative impact on encouraging children to lead healthier lifestyles.

Uses typically associated with anti-social behaviour should not be allowed where they will have a detrimental effect, individually or cumulatively, on the character or amenity of the area through smell, litter, noise or car parking. For this reason, space for take-aways and betting shops will be limited in the district centre and local centres with no permissible use in the neighbourhood centre.

In the district centre, no more than 200 sq m net should be in either A5 take-away use or sui generis betting shop use. Only one of either of these uses will be permitted in a local centre and none in a neighbourhood centre. Following concerns raised by Public Health England, no A5 take-away use should be located within 400 metres, in a straight line of any school premises. This will discourage children from following unhealthy lifestyles by frequenting these types of food providers during their school routine.

It is recognised that there may be a need for some private social and healthcare facilities such as daycare centres, nurseries and dentists in local centre units, it is essential that enough provision is retained for meeting the day-to-day needs for people. The types of permitted ground floor uses should be commensurate in scale and function of the centre, to meet local need.

Local-in-scale commercial leisure uses such as cafés and restaurants will be an acceptable 'other town centre' use in NEC's centres. These are essential to ensure NEC remains a sustainable destination while not creating a destination location; one that draws large numbers of people to the area other than from immediate neighbourhoods. It is not intended for NEC to accommodate any large-scale entertainment or arts and culture leisure facilities such as a cinema complex, a ten-pin bowling facility or a large music/performance centre. These would most likely not be able to respect NEC's 'trip-budget' and have the potential to undermine other established centres already providing similar uses. As such, leisure uses involving entertainment, arts and culture will also need to comply with Policy 9: Social and Community Infrastructure, where applicable. Larger commercial leisure facilities will continue to be located within Cambridge City Centre and the Cambridge Leisure Park; recommendations will be set out in the emerging Greater Cambridge Retail and Leisure Study.

Other neighbouring centres

Similarly, new centres should not undermine other centres or exceed the agreed 'trip budget' for Milton road. The indicated retail capacities are intended to ensure this

balance is retained, in terms of floorspace. These will encourage a range of food and non-food shops, local services and places where people can meet such as in pubs and restaurants. These will support local entrepreneurs to set-up (and hopefully) expand in flexible units. These centres will support healthy lifestyles by providing opportunities to shop on foot or on bike. It is anticipated that a diverse range of uses provided by many independent retail traders, will create centres that local people and workers will want to support.

Small and flexible floorspaces

NEC Retail Statement indicates that commercial retail units located within local or district centres would require smaller format units of between 55-110 sqm net floorspace. Some flexibility to allow for different floorspaces is supported as it will help retailers to adapt to fluctuating demand and changing consumer trends.

Flexible floorspaces allowing for both smaller and larger units to operate will also provide greater opportunity for a range of different retail uses to establish themselves, including independent retailers. It is therefore proposed to allow different floor space configurations to allow greater flexibility for shops and other local services to set-up, operate and allow some expansion. This approach should also allow for centres to adapt to changes in consumer trends and habits in a sustainable manner. However, in order to avoid the creation of large units that would be out of character with the intended approach of attracting small, independent retails a limit to the size of these flexible units up to 150 sq m net (GIA) will be permitted. Similarly, the merging of separate flexible, internally configurable units will not be permitted. This approach should also allow for centres to adapt to changes in consumer trends and habits in a sustainable manner.

Permitted development rights & Article 4 Directions

The use of Article 4 Directions or equivalent will need to reflect the Permitted Development regime in operation. Their use is intended to ensure all NEC centres remain vibrant and attractive for local people and cater to their day-to-day needs. Widespread conversion of units to non-food retail use will have a significant adverse effect on their ability to fulfil their primary function. Controls may therefore be necessary to ensure the character and function of each centre is properly protected through the planning process. This will allow people to be involved in any decision to change their centres.

Uses typically associated with anti-social behaviour should not be allowed where they will have a detrimental effect, individually or cumulatively, on the character or amenity of the area through smell, litter, noise or car parking. For this reason, space

for take-aways and betting shops will be limited in the district centre and local centres with no permissible use in the neighbourhood centre.

Temporary uses

It is also recognised that not all facilities/centres will be provided until certain development trigger points have been reached. However, it is essential that occupants from an early stage of occupation have local access to facilities that meet their day-to-day needs. A flexible approach will therefore need to be taken towards empty buildings and vacant sites, planned for alternative uses in the final plan, that could be used on a temporary basis to provide residents and office users with an alternative to having to travel to access essential day-to-day goods and services. Time limited conditions should therefore be used and linked to the opening of new centre units to ensure permitted uses are temporary. Policy 11: Meanwhile Uses provides further clarification on temporary uses.

Temporary planning permissions in buildings that would otherwise remain empty or underused will be permitted, on a temporary basis where the temporary use meets the day-to-day needs of the local community, subject to any relevant amenity issues. Time limited conditions should be used, linked to the opening of new centre units.

Design

The policy limits the ground floor uses to those that would normally support an active centre with open frontages i.e. with large windows showing the goods and services available or a receptionist in attendance. All units should provide an active frontage, such as a window display and visual sight through to the shop floor, which is in keeping with the character of the centre.

Relevant City/Area-wide/Regional Strategies

All forms of new retail and leisure should support relevant city/regional strategies, where possible, such as The Greater Cambridge Retail and Leisure Study.

Draft NEC AAP 2020

Policy 9: Social and Community Infrastructure

Policy 9 is applicable for all formal sports and leisure facilities (all leisure categories in Table 8.3 of the CLP2018), both public and private to ensure these and other relevant matters are given careful consideration.

Proposals for new formal leisure facilities often involve a much wider catchment area than their immediate neighbourhoods and can therefore have an adverse impact on similar facilities in neighbouring communities which need to be given careful consideration before approval. These also include gymnasiums.

This is also the case for ancillary formal sports and leisure facilities provided as part of an employment centre or a large, single development provided for use by their employees. It is important that these facilities are commensurate in size to the number of people expected to use them. These should also not have an adverse impact on other similar sports and leisure facilities.

Proposals for ancillary corporate sports and leisure facilities, as part of an employment centre and, or large employment development should therefore use Sport England's Sports Facility Calculator, where possible to calculate the quantum of sports provision generated by the number of people expected to be employed on-site new large-scale employment centres incorporating their own sports and leisure facilities.

Policy 10a: Retail

Policy 10a is applicable for all proposals within a designated centre and those that may have an impact on their vibrancy and vitality outside. It has the aim of delivering the retail vision for NEC, creating attractive and vibrant centres.

The policy defines: the proposed hierarchy of centres, i.e. the district, local and neighbourhood centres; the quantum of permissible floorspace for each type of floorspace category: convenience (food shopping); comparison (non-food) shopping; and all other uses. It also explains how these different categories should be delivered including how the balance between these different categories will be maintained with relevant planning applications.

Policy 10a will permit a range of uses including estate agents, cafés, restaurants, public houses, hot food takeaways and other useful facilities or services such as a laundrette. These uses will help foster opportunities for greater social interaction, provide services to meet the day-to-day needs of local residents and workers alike as well as complementing the proposed food and non-food shops.

Uses typically associated with anti-social behaviour such as take-aways and betting shops will be limited in the district centre and local centres with no permissible use in the neighbourhood centre. In the district centre, no more than 200 sq m net should be in either A5 take-away use or sui generis betting shop use. Only one of either of these uses will be permitted in a local centre and none in a neighbourhood centre.

As specifically requested by Public Health England, no A5 take-away use should be located within 400 metres, in a straight line of any school premises.

To ensure the centres remain vibrant and attractive locations, the policy restricts ground floor uses to those will support their frequent usage and the use of active frontages to help reduce the dear of crime. The types of permitted ground floor uses should be commensurate in scale and function of the centre, to meet local need. Smaller and flexible floorspaces will be supported along with temporary uses during the construction phase to allow the maximum usage of these centres.

The widespread conversion of units to non-food retail use will have a significant adverse effect on their ability to fulfil their primary function. Controls on these conversions may therefore be necessary to ensure the character and function of each centre is properly protected through the planning process. Such controls include the use of Article 4 Directions.

Appendix C7: Skills, Training & Local Employment Topic Paper

Introduction

The aim of this paper is to set out Cambridge City Council's (CCC) and South Cambridgeshire District Council's (SCDC) joint commitments to ensuring that there are opportunities to access skills, training and local employment within Cambridgeshire. The paper will also highlight the current initiatives in place that may have impact on the North East Cambridge development.

Cambridge is internationally recognised as a global leader for its knowledge and innovation in a range of sectors including life sciences, engineering and creative industries. As a result, there is a need for a development of skill bases that ensure young people and businesses can find employment and contribute to the economic growth within Cambridgeshire.

Context

National Planning Policy Framework 2019

The National Planning Policy Framework[1] (NPPF) discusses the need to build a strong, competitive economy that proactively encourage sustainable growth (Paragraph 81). In order to achieve a prosperous economy, the NPPF states that planning policies should 'identify strategic sites, for local and inward investment' as well as 'seek to address potential barriers to investment, such as inadequate infrastructure, services or housing'. The NPPF addresses need for local employment opportunities and skills and training are an important component of this.

Cambridge City Council Local Plan (2018)

Further targets set by CCC are incorporated into the Cambridge Local Plan[2] with several strategic objectives set out. These highlight different concerns including the need to "promote and support economic growth in environmentally sustainable and accessible locations, facilitating innovation and supporting Cambridge's role as a world leader in higher education, research, and knowledge-based industries, while maintaining the quality of life and place that contribute to economic success".

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[1]National Planning Policy Framework 2019

[2] Cambridge Local Plan 2018

Section Five: Supporting the Cambridge Economy discusses the Council's aim to strengthen and diversify the economy in Cambridge. In order to ensure it remains a world leader in the fields of education and research several policies designate areas for employment sites. This section identifies the need to promote Skills and Training to encourage local employment across a range of sectors and not just technology-based industries.

South Cambridgeshire District Local Plan Policy (2018)

SCDC's Local Plan[3] (2018) also highlights the need to support economic growth by "supporting South Cambridgeshire's position as a world leader in research and technology-based industries, research and education; and supporting the rural economy". Chapter 8: Building a Strong and Competitive Economy discusses how the Council will assist in achieving a strong sustainable local economy with encouragement of 'entrepreneurship, innovation and inward investment'.

Cambridgeshire and Peterborough Skills Strategy (2016-2021)

Alongside CCC and SCDC's targets to promote Skills, Training and Local Employment Opportunities, Cambridgeshire and Peterborough Combined Authority provides an approach to address local need to reduce the skills gap in the Skills Strategy[4] (2016-2021). The strategy document emphasises the need to "take into account the views and needs of businesses, education and learning providers and other stakeholders' organisations and citizens to help increase and develop existing and future workforce". In order to do so the Skills strategy aims to identify the higher-level skills gap, provide targeted skills training for businesses, help young people aged 16-24 into training and employment and enhance opportunities to vulnerable and low-skilled residents.

Key issues

Identifying the need for Skills and Training in Cambridge

In Cambridge approximately 30% of the city's jobs are in the knowledge intensive sector, and the jobs require specialist skills and are highly-paid. However, there is a small but significant and growing proportion of jobs in the city that are paid below the Real Living Wage - 13.1% jobs in 2018 (14,000) compared to 11.4% in 2017 (12,000).

Due to the success of the University and the tech sector, there are a large number of high-skilled jobs, some unskilled or low-skilled jobs, but very few jobs requiring mid-level skills

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[3] https://www.scambs.gov.uk/media/12740/south-cambridgeshire-adopted-local-plan-270918_sml.pdf

[4] https://www.supportcambridgeshire.org.uk/docs/skills-strategy-for-cambridgeshire-2016-2021.pdf

compared to other parts of the country. This makes it very difficult for people with limited qualifications or skills to secure jobs with salaries that are high enough to meet the high cost of living and housing in the city.

Within Cambridgeshire there is also an increasing demand for people with higher-level qualifications highlighting the increasing inequalities between high-level and low-level skill sets. The City Deal also conveys the importance of ensuring that employment opportunities are provided with appropriate learning and training, reducing the skills gap in Cambridge.

According to the Cambridge County Council's Annual demographic and socio-economic report[5], 93.1% of year 11 leavers were continued in full-time education. 1.5% of school leavers in the wards surrounding the NEC AAP development area were not in NEET but were actively seeking one of the three in 2016. The most popular occupation for students leaving secondary schools was within the construction industry (30%) however, 21% of leavers were enrolled in the Entry to Employment Scheme (E2E).

Data from Anti-Poverty Strategy

To further illustrate these considerations and demonstrate the need for other types of jobs beyond high-skilled tech jobs, the recent Anti-Poverty Strategy provides the key data set out below.

- In 2018, 64.0% of jobs in the Cambridge economy were in the top 3 out of 9 Office for National Statistics employment classifications (managers, directors, senior officials; professional occupations; and associate professional and technical occupations). This is a very much higher proportion than in the rest of Cambridgeshire and the UK as a whole.
- The proportion of jobs in mid-level occupations in Cambridge (administrative and secretarial occupations; skilled trades occupations; caring, leisure and other service occupations) decreased from 19.6% in 2014 to 14.9% in 2018.
- There is an educational attainment gap in the city, which impacts on longer term life chances for young people from low income households. In 2015 less than 28.1% of pupils receiving Free School Meals achieved GCSE 5+ grades A*-C including English and Maths, compared to two thirds (66.4%) of children not eligible for free school meals in the city.

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[5] https://cambridgeshireinsight.org.uk/wp-content/uploads/2017/10/Cambridge-City-District-Report-2011.pdf
[6] https://www.cambridge.gov.uk/media/3814/170920_revised_anti-poverty_strategy_2017-2020_-_final_v2.pdf

- A high proportion of Cambridge employees have high skills levels. 58.1% of the working age population in Cambridge had higher level qualifications (NVQ Level 4 and above) in 2017, which was the second highest level of any city in the UK (according to the Centre for Cities). Opportunities for higher-skilled, higher-paid employment may be limited for young people who have lower qualifications in Cambridge, because they are competing for jobs with people from across the UK and the globe who have high skill and qualification levels.

Initiatives and Employment Opportunities

Current initiatives in place across Cambridgeshire aim to promote ways of working with local employers, schools and academies to develop local skills. Through business and enterprises, the Greater Cambridge Partnership (GCP) aims to improve provision through 400 new apprenticeships[6]. The apprenticeships scheme has been developed to reduce the skills gap and increase the number of qualified employees. Cambridge Regional College and Future CIC will manage the scheme on behalf of the GCP, supporting businesses and students to secure positions in science, technology, engineering and maths subjects.

Publication from the Social Mobility Commission[7] (2019) states that current initiatives are focussed on education and development of skills for young people but there is an increasing need to focus on the adult skills gap. Types of training would include induction, health and safety training, professional/occupational training in order to improve career prospects for lower-skilled or qualified people.

Additionally, the document highlights that 47% of the poorest adults have not received training since leaving schools and are more at risk of losing their jobs due to increased use of technology in low-skilled roles. As a result, the report highlights the need to improve social mobility through three key aims:

- Increased employer spend on lower-skilled, low-paid workers
- Government support for increased availability of, and access to, free courses for those who cannot pay themselves
- Increased quality of training in terms of earning gains, and improved careers, education, information, advice and guidance.

[7] https://www.greatercambridge.org.uk/news/new-apprenticeship-service-greater-cambridge/

[8] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/774085/Adult_skills_report_2019.pdf

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Other current initiatives to increase employability include the focus on academies and early career provisions from companies. In order to intensify the number of young people seeking jobs, Cambridge Launch Pad aim to create a number of apprenticeship roles. For school leavers looking to further their career, Anglia Ruskin University (ARU) has set up degree apprenticeships with a range of employers paying tuition fees alongside Government funding.

Preferred approach

The North East Cambridge development is likely to bring 10,000 to 15,000 new jobs through a mix of employment opportunities supporting local residents and the Greater Cambridge economy. This alongside promoting ways to work with local employers, schools and academies such as through local apprenticeship schemes and training reducing the skills gap as a result. Cambridge Regional College which is based within the North East Cambridge area should be able to play an important role in this respect.

There will also be training and employment opportunities from developers secured through Section 106 agreements during the construction stage of development. To ensure that developers responsibly deliver skills and training within new job opportunities within North East Cambridge, operational developers should provide an Employment and Skills Plan (ESP). This will allow for the provision of meaningful employment and training opportunities through a range of mixed employment in North East Cambridge.

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Appendix C8: Digital Infrastructure Topic Paper

Introduction

The explosive growth of connectivity over the last decade has resulted in digital technologies increasingly touching on almost every aspect of modern living, meaning that demand for ever faster global connectivity is only expected to increase. There is an opportunity to create ambitious plans for connectivity for North East Cambridge that will not only support good Internet access for residents and businesses, but which will also provide a platform for some of the "smart" technologies, including environmental monitoring and management, energy efficiency and future transport solutions that are being considered as part of the area action plan. This includes both fibre to the premise (FTTP) for all properties as a minimum and provision for infrastructure to support mobile services including 5G and subsequent generations of mobile technology. The provision of low-power wide-area network (LPWAN) networks are also likely to play a key role in the rollout of low-cost sensors that will enhance monitoring of the environment, in line with the Environmental Health Topic Paper.

This will:

- Support ambitions for the NEC to become an innovation district, i.e. a centre for knowledge-based industries cluster together, primarily in small areas
- Help unlock economic opportunities particularly in industry 4.0, i.e. new digital industrial technology to gather and analyse data across machines, enabling faster, more flexible, and more efficient processes to produce higher-quality goods at reduced costs. This could include advanced manufacturing, support 3D printing etc.
- Enable new mobility solutions and facilitate ease of transition when changing between transport modes, which supports the aims to minimise the need travel, reduce the impact of the private car and encourage a switch to more sustainable modes.
- Provide effective solutions to servicing requirements, including the operation of 'last green mile' deliveries
- Enable the delivery of future facing intelligent infrastructure including energy, waste, water, transport etc. allowing the Area Action Plan to better manage these aspects of the development
- Support environmental monitoring
- Support the transition to zero carbon by enabling new technologies

- Enable residential properties to be future proofed as homes become more connected and entertainment within the home demands greater bandwidth support things like Augmented Reality (AR) and Virtual Reality (VR)
- Enable connectivity to support health care and the development of community.

The availability of high-quality communications is vital to modern day business operations from payments to supply chain management and research projects. It also provides essential access to residents for online services, education and the ability to stay in contact with family & friends. Digital connectivity is now considered by many to be an additional utility and is therefore expected to be included in any new development both residential and business. Ensuring a future facing digital Infrastructure which can adapt to emerging technology is included in the development design provides multiple benefits to developers, service providers, local councils, highway authorities, businesses and residents:

- It ensures the design and equipment locations for communication infrastructure are integrated into the overall design of the development.
- There is a significantly lower cost both financially and environmentally to install communications ducts, chambers, power cables and cabinets at a time when footways/carriageways are being constructed and other utilities installed.
- Disruption to residents and commuters is minimised by ensuring a majority of the construction work takes place at the same time as the general development and primarily before first occupation.
- The quality of finish for new surfaces, in particular footways and carriageways, is maintained by avoiding the need to retrofit underground apparatus.
- Digital Connectivity is becoming an increasingly important factor for home owners and businesses on where they choose to live, work and invest.
- The availability of high quality digital connectivity is a pre-requisite for many future facing technologies.
- The availability of a fibre duct system means that fibre networks can be replaced, extended to new areas and upgraded with minimum cost and disruption to the existing fibre and highway networks. Fibre optic cables are currently considered the best and fastest option for providing fixed connectivity that have a long lifespan expected to last several decades.

Failure to include "open access" Digital Infrastructure, that allows any telecoms provider access to the infrastructure to supply a service through an agreement with the asset owner, as part of the development design and site construction is likely to lead to significant delays

in the provision of high quality gigabit capable communications to the development. This is due to the higher costs and inherent additional difficulties in retrofitting infrastructure meaning commercial suppliers are more likely to prioritise investment in other locations where there is likely to be a lower cost and a quicker return on investment.

Key Evidence Documents

Evidence that we already have:

- Future Telecoms Infrastructure Review (FTIR) - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/732496/Future_Telecoms_Infrastructure_Review.pdf
- Cambridgeshire and Peterborough Digital Infrastructure Review 2019 - https://www.connectingcambridgeshire.co.uk/wp-content/uploads/2019/07/Connecting-Cambridgeshire-Digital-Connectivity-Review-2018-2019-with-map.pdf
- Delivering a Digital Connectivity Strategy for Cambridgeshire and Peterborough 2018 -2022 - https://www.connectingcambridgeshire.co.uk/wp-content/uploads/2018/07/Connecting-Cambridgeshire-Digital-Connectivity-Strategy-2018-2022.pdf

Topic Papers:

- Environmental Monitoring
- Future mobility
- Health & wellbeing
- Environmental Health
- Climate Change
- Community safety
- Anti poverty
- Internalisation

National Planning Policy Framework and other relevant national legislation

National Planning Policy Framework
Section 10 of the **National Planning Policy Framework (NPPF 2018)** – Supporting high quality communications – describes how the rollout of high quality communications should be supported with paragraph 9 stating - "*Advanced, high quality and reliable communications infrastructure is essential for economic growth and social well-being. Planning policies and decisions should support the expansion of electronic communications networks, including*

next generation mobile technology (such as 5G) and full fibre broadband connections. Policies should set out how high quality digital infrastructure, providing access to services from a range of providers, is expected to be delivered and upgraded over time; and should prioritise full fibre connections to existing and new developments (as these connections will, in almost all cases, provide the optimum solution)".

Electronic Communications Code

The **Electronic Communications Code** that came in to force on 28 December 2017 is set out in schedule 3A of the Communication Act (2003). The Code is designed to facilitate the installation and maintenance of electronic communications networks as well as including certain "immunities" from the Town and Country Planning Legislation. The Bill includes a Code of Practice designed to make the rights of operators to install and maintain equipment on both public and private land clearer, give greater flexibility to use the rights and encourage the sharing of network apparatus.

Telecommunications Infrastructure Bill

Telecommunications Infrastructure Bill 2019-20 – passed the second reading in the House of Commons on 22 January 2020. The Bill once approved will amend the Electronics Communications Act to reduce barriers to telecommunication operators to install services to multi-dwelling buildings where a landlord has not responded to their request. This is part of the Government's approach to reduce barriers preventing the nationwide rollout of gigabit-capable broadband.

Background/Context/Relevant Data/Corporate Council Objectives and Strategies

Future Telecoms Infrastructure Review

The importance of high quality gigabit capable digital connectivity has recently been highlighted by the **Government** setting a target in the Review of having full fibre coverage across the UK by 2033 and announcing their investment alongside Mobile Network Operators (MNOs) in a Shared Rural Network (SRN) to significantly reduce rural 'not-spots' where mobile coverage is unavailable across the UK. There also have been/and are a number of Bills being introduced designed to facilitate the rollout of the required infrastructure. The Government has also invested in a number of 5G testbed and trial projects across the UK as part of their plans to improve mobile connectivity.

Cambridgeshire County Council and **Cambridge and Peterborough Combined Authority (CPCA)** are both supporting the Connecting Cambridgeshire Programme in the development of the Digital Connectivity Strategy for Cambridgeshire. Targets have been agreed by the County Council's Economy and Environment Committee for more than 30% of properties in Cambridgeshire having full fibre to the premise by 2022. An Enabling Digital Delivery team was created in 2018 to support and facilitate the rollout of improved digital connectivity by working with telecommunications suppliers and all other stakeholders offering advice and support on any matter relating to digital connectivity. The County Council and the Cambridgeshire and Peterborough Combined Authority have also adopted a policy to include fibre ducting in all transport and other infrastructure schemes which also includes schemes commissioned by the Greater Cambridge Partnership (GCP) to help reduce the barriers and speed up the rollout of full fibre across Cambridgeshire.

Cambridge City Council Local Plan

Cambridge Local Plan (2018) includes Policy 42 - Connecting new developments to digital infrastructure - which States:-

"*Provision for high capacity broadband (such as ducting for cables) should be designed and installed as an integral part of development, to minimise visual impact and future disturbance during maintenance. All telecommunications infrastructure should be capable of responding to changes in technological requirements over the period of the development.*

5.22 Early provision of high-quality broadband to new homes and offices in Cambridge can avoid future disruption and harm to the street scene, and ensure that all new development is fully integrated into modern communications technology. This will:

- *help communication for business and residents;*
- *allow for increased home working (impacting on demand for business land);*
- *reduce the need to dig up pavements; and*
- *help address isolation.*"

South Cambridgeshire District Council Local Plan

South Cambridgeshire Local Plan (2018) includes Policy TI/10 – Broadband – which states:-

"*New development (residential, employment and commercial) will be expected to contribute towards the provision of infrastructure suitable to enable the delivery of high speed broadband services across the district. As a minimum, suitable ducting to industry standards*

should be provided to the public highway that can accept fibre optic cabling or other emerging technology. Other forms of infrastructure, such as facilities supporting mobile broadband and Wi-Fi, should be included where possible and viable.

10.60 Broadband is a key infrastructure element for the district. Increasing broadband coverage in rural areas will encourage local enterprise, give more people the flexibility to work from home, save transport costs and reduce congestion. Wider access to broadband will also bring opportunities to provide health, education and public services in better ways. This includes supporting elderly and vulnerable people so they can live independently, and helping young people and adult learners to develop the skills they need to succeed. It will support implementation of the South Cambridgeshire Economic Development Strategy and the Cambridgeshire and Peterborough Broadband Plan, prepared by the Connecting Cambridgeshire partnership."

There is already significant alignment between Central Government, Cambridgeshire County Council, Cambridge City Council and South Cambridgeshire District Council on policy regarding digital connectivity and the recognition of the important role it plays in modern society. The development of North East Cambridge provides an excellent opportunity to build on this to ensure that the highest standard of future proofed digital connectivity is included from the outset of the design of the development and that best practice is incorporated to ensure that ubiquitous gigabit capable connectivity is available to facilitate day to day living, business operations, transport, education, environmental monitoring and future facing technology.

Digital Infrastructure Opportunities and Key Issues

Embed infrastructure in the development design and built environment

Opportunity
- Reduces time & cost to install infrastructure as part of the overall development build increasing the likelihood of commercial investment
- Lessens the visual impact of digital infrastructure such as cabinets, poles and masts
- Appropriate infrastructure will enable future communications technology to be rolled out at minimal disruption and cost

Risk
- Lack of digital infrastructure design knowledge could mean the network is not designed appropriately to meet the requirements of multiple suppliers
- The availability of locations to install communications equipment may be compromised by embedding in the planned built environment
- The input of experienced digital infrastructure designers may not be utilised or readily available leading to poor infrastructure design

Open Access infrastructure/Neutral Host model

Opportunity
- Reduces the requirement for physical infrastructure therefore reducing impact on residents, business and the environment both for the installation and the impact on the street scene
- Maximises the number of suppliers who can readily access the market ensuring competition and a wider range of service providers for residents/businesses

Risk
- Some telecoms suppliers have a preference to own the infrastructure on/in which they install their equipment and may therefore choose not to invest in the area
- Developers may want to exclusively own the digital infrastructure as a source of revenue if a multiple supplier open access element is not included in planning conditions

Low-power wide-area network (LPWAN)

Opportunity
- Put in place connectivity to support deployment of sensors and support the environmental monitoring topic paper
- Support business to develop new ideas
- Unlock innovation by allowing new sensors to be created utilising the low cost communication network
- Support the operation of infrastructure by allowing large scale monitoring via low cost devices

- This is a relatively new market with a number of emerging technologies/use cases, it may therefore be difficult to ensure the correct technology providing longevity is deployed

Better plan and manage existing and future communications

Opportunity

- Development of a digital twin, a digital replication of the physical assets of North East Cambridge, to understand the communication landscape in the area
- Support innovation through providing a variety of appropriate communication methods to new devices and technologies that require it to operate
- Support the rollout of new technologies such as 5G by understanding the interactions of the existing networks and required supporting infrastructure

Risk

- It may not be possible to plan for some new technologies as the preferred design of these new networks is still being developed
- Some suppliers have historically been sensitive about making their network design publicly available that could impact on the ability to map their networks

Support economic growth and innovation

Opportunity

- Connectivity will support innovation across the site
- Support Industry 4.0 and economic growth
- Support alternative models for mobility, including 'Mobility as a Service'.

Risk

- Poor connectivity will put business/industry off using the site.
- Grid capacity to support the additional power demands

Preferred Approach

High quality provision with choice of providers
- Ensure that all new developments (housing, offices, retail, industrial, leisure, community and transport) have access to high quality communications via the latest generation of high speed gigabit-capable broadband from a choice of providers and that mobile coverage will be suitable for a growing population.

Open access broadband
- Broadband infrastructure should be "open access" infrastructure and provided by at least 2 suppliers, where possible, across the development to ensure that residents & businesses have a selection of suppliers and that service quality & pricing should be competitive.

Assessment of existing conditions
- Developers should assess the likely impact of developments on the existing mobile networks in the area and take appropriate action. Development proposals should include where appropriate pre-designated locations for future mobile mast installations that include suitable design of the land or building to accommodate the equipment as well as the provision of power and backhaul connectivity to the mast location.

Fibre connectivity in street furniture
- Rollout of 5G should be facilitated by ensuring that fibre connectivity is designed in a way that it will be easily accessible for connection to street furniture such as street lighting columns. Street furniture specifications should be designed in such a way that the installation of telecoms equipment and other sensors can be included.

Consider wireless connectivity within building as part of design
- The design of buildings within the development should consider the impact of the design on wireless connectivity within the building. In-building solutions should be provided if the building design is expected to impact on the quality of wireless signals.

Submit a digital infrastructure strategy with planning application
- A digital infrastructure strategy should be submitted as part of the planning application outlining how digital connectivity will be included to meet the current and future anticipated requirements of the development in terms of residential, business, public building/space and transport connectivity as well as environmental monitoring.

Contribute to digital twin with 3-D models

- Developments should support the creation of a Digital Twin, by providing 3D models of their schemes to be assessed by the Greater Cambridge Shared Planning Authority.

Reasons for preferred approach

A) Embedding innovation in NEC

The open data approach outlined above enables the development of services and amenities by private, public, and third sector organisations. This is further supported by ensuring that development provides high quality infrastructure, and contributes to the development of a digital twin, draft policies will contribute to the innovation by default.

B) Carbon reduction

Increasing the quality of digital infrastructure can help with monitoring of environmental performance, as described in the environmental monitoring topic paper, and support a transition in behaviours that supports the climate emergencies declared by the councils.

C) Support industry and economic activity

High quality digital infrastructure will help the growth economic activities by ensuring that

tenants – both residential and employers – and visitors will have access to the best quality

connections to support their activities.

D) Support sustainable infrastructure, mobility, energy, water and waste

Digital infrastructure provision is an enabler of other services, and the high quality approach outlined above in the preferred approach can accelerate the development of smart and fourth industry services.

E) Support community cohesion

Ensuring that Wi-Fi is publicly available, and digital infrastructure is equitably distributed can help community cohesion. The proposals for open data will also provide opportunities for start ups and new services to emerge.

F) Create attractive residential properties and business premises

Digital living, as made clear by the Covid-19 pandemic, is now a key part of home life. The preferred approach outlines how the draft policies can ensure that all residents at North East Cambridge will be able to be connected to the highest quality infrastructure regardless of tenure.

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Appendix C9: Environmental Monitoring Topic Paper

Introduction

North East Cambridge provides a major opportunity to deliver sustainable development and to create a low carbon place. There is an opportunity for new digital tools to be used in both the planning and monitoring of the development.

Advances in sensing technology and communications have significantly lowered the cost of collecting information. This is often referred to as the 'Internet of things' and is the idea that things can be connected to the internet with the information they produce being brought together and stored. This allows for intelligence and understanding to be drawn from the information collected. In the pre-application phase data can be collected to inform the modelling and planning of developments, during construction the impact of the development process can be measured and upon completion the success of the development measured (movement etc.). This will allow for early interventions if systems within the development aren't performing as expected or if impacts are less than anticipated allow for the acceleration of the development timeline. This intelligence can then be presented in ways that advance our understanding of performance via dashboards graphs and visualisations.

North East Cambridge will be an opportunity to use innovative new methods of modelling such as 'Digital Twins' which bring a number of systems (transport, energy etc.) into a single environment, monitor impacts in real time and help engage residents and local communities. This work could draw on the expertise in the Centre for Smart Infrastructure and Digital Built Britain at the University of Cambridge, and the use of third party suppliers such as Vu.City or Sensat.

Information can be gathered from sensors in real-time (as it is happening), near real-time (with some delay) or can be historic where data is not time critical. To help with the collection, processing and discovery of data, a data architecture will be needed and this could either be at a city scale such as the Intelligent City Platform developed by the Smart Cambridge programme or a site wide platform.

The preferred approach contained herein is aimed at supporting the emerging Area Action Plan in its ambitions to:

- Minimise vehicle use to and within the site – as detailed in the trip budget proposed in the transport paper and the internalisation of trips topic paper – to maximise the take-up of non-car modes including walking, cycling, micro mobility, bus and rail use, and promote an appropriate mix of land uses that encourage trips to be retained on-site where possible.

- Monitor the Environmental Impact Assessment

- Support the mitigation of adverse noise impact issues as detailed in the emerging Environmental Health Topic Paper.

- Create better understanding of the impact of development

- Monitor the impact of the construction phase

- Measure the success of the AAP based on the delivery of development outcomes within the Plan's timeframe.

- Understand how water is being used and managed.

- Utilise low-tech green solutions coupled with high tech and smart city technology

- Support the transition to zero carbon and embed climate change resilience, responding to issues such as water resource availability and energy generation and use.

- Create a supporting data layer and data tools that can support decision makers; to enable planners, developers and communities to understand the impacts of the development on areas such as energy, waste, movement air quality etc.

Key Evidence Documents

Evidence that we already have:

- Future of Planning – State of the Art Innovations (2016) Future Cities Catapult - http://futurecities.catapult.org.uk/wp-content/uploads/2016/12/FCC-FoP-State-of-the-art-innovations-December-2016.pdf
- Digital Planning Manifesto – RTPI and the Connected Places Catapult - https://s3-eu-west-1.amazonaws.com/media.cp.catapult/wp-content/uploads/2019/11/07101808/RKPI_Manifesto.pdf
- Smarter Infrastructure Planning RTPI - https://www.rtpi.org.uk/media/3481458/smarterinfrastructureplanning.pdf
- Transport and Health JSNA 2015 (Air Pollution) - https://cambridgeshireinsight.org.uk/wp-content/uploads/2017/08/Transport-and-Health-JSNA-2015-Air-Pollution.pdf
- Assessing Environmental Impacts – Guidance - https://www.gov.uk/guidance/assessing-environmental-impact-guidance

Topic Papers:

- Future mobility
- Digital connectivity
- Health & wellbeing
- Environmental Health
- Climate Change
- Community safety
- Anti poverty
- Internalisation

NPPF and other relevant national legislation

National Planning Policy Framework

The **National Planning Policy Framework (NPPF 2018)** has a presumption in favour of sustainable development for both plan-making and decision-taking. The NPPF has a requirement for developments which generate significant amounts of movement to be supported by a Transport Assessment or Transport Statement and Travel Plan.

The NPPF requires the planning system to actively manage patterns of growth through directing significant development to locations which are or can be made sustainable, namely areas that limit the need to travel and/or offer a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health.

Paragraph 102 sets out that transport issues should be considered from the earliest stages of plan-making and development proposals and that opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised. Also that;

- opportunities to promote walking, cycling and public transport use are identified and pursued
- the environmental impacts of traffic and transport infrastructure are identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains

Paragraph 109 states that development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

Paragraph 111 states all developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.

Section 14 of the NPPF considers the role of planning in dealing with climate change and flood risk, noting the role of the planning system in supporting the transition to a low carbon future in a changing climate. Planning should help to shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience, and support renewable and low carbon energy and associated infrastructure. Footnote 48 of paragraph 149 goes on to note that planning policies should be in line with the objectives and provision of the Climate Change Act 2008.

The Climate Change Act 2008 was amended in August 2019 to set a legally binding target for the UK to become net zero by 2050.

One of the aims of the NPPF is an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

The NPPF also sets out the need for an Environmental impact assessment: A procedure to be followed for certain types of project to ensure that decisions are made in full knowledge of any likely significant effects

Background/Context/Relevant Data/Corporate Council Objectives and Strategies

There are four relevant authorities that will be involved in the development of the NEC development; Cambridgeshire County Council, Cambridge City Council and South Cambridgeshire District Council and Cambridgeshire and Peterborough Combined Authority. They are accompanied by the city deal, Greater Cambridge Partnership, who support on the delivery side.

These are the objectives and strategies that are relevant to this topic paper:

Cambridgeshire County Council Vision
The County Council has a vision to make the county 'a great place to call home' with three priority outcomes:

- A good quality of life for everyone – by nurturing healthy communities that can access resources, connect with others and become sustainable. Improve social and economic equality and encourage people to choose healthy lifestyles.
- Thriving places for people to live – by investing in the environmental, infrastructure and services and building supportive, resilient communities that are great places to live.
- The best start for Cambridgeshire's children.

Greater Cambridge transport
The Transport Strategy for Cambridge and South Cambridgeshire (TSCSC) (2014) ensures that local councils plan together for sustainable growth and continued economic prosperity in the area.

It supports the Cambridge and South Cambridgeshire Local Plans (2018) and takes account of future levels of growth in the area. Approximately 44,000 new jobs and 33,500 new homes will be created in the Greater Cambridge area by 2031. The strategy provides a plan to address the rising population and increase in demand on our travel network by shifting people from cars to other means of travel including cycling, walking and public transport. It details the transport infrastructure and services necessary to deliver this growth.
https://www.cambridgeshire.gov.uk/residents/travel-roads-and-parking/transport-plans-and-policies/cambridge-city-and-south-cambs-transport-strategy

The County Council has declared a Climate Emergency and has developed **a climate change and environment strategy** which was to go to full council in March 2020 for adoption, but has been postponed due to Covid-19. It sets out a vision to deliver net zero

carbon by 2050. Transport is a priority area of the strategy and the county will manage its highways to prioritise walking, cycling and public transport and support the uptake of electric vehicles. This will minimise carbon emissions and improve air quality. These strategy aims have been embedded into the Combined Authority's local transport plan.

Joint Municipal Waste Strategy (Cambridgeshire and Peterborough)
https://www.recap.co.uk/about-recap

The Councils:

- are committed to increasing recycling in order to maximise use of finite resources thereby minimising energy use and waste disposal.
- want to develop services that bring about reductions in carbon emissions.
- support the waste hierarchy and understands the need to emphasise waste prevention and reuse.

Cambridgeshire Flood Risk Management Strategy
https://democracy.cambridge.gov.uk/documents/s30563/Appendix%20A%20CLFRM.pdf

The flood risk management strategy looks to Improve flood prediction, warning and post flood recovery. If flooding is a potential risk thought needs to be given about how sensors and data can predict and warn of flooding events.

Cambridgeshire Flood and Water SPD
The Supplementary Planning Document (SPD) forms part of each of the Cambridgeshire Local Planning Authority's (LPAs) suite of planning documents. This SPD has been developed by Cambridgeshire County Council (as Lead Local Flood Authority (LLFA)) in conjunction with LPAs within Cambridgeshire, and other relevant stakeholders, to support the implementation of flood risk and water related policies in the Local Plans. It provides guidance on the implementation of flood and water related policies in each authority's respective local plan.

Cambridgeshire and Peterborough Combined Authority (CPCA)
The devolution deal for Cambridgeshire and Peterborough sets out key ambitions for the combined authority.

As the CPCA is now the local transport authority with strategic transport powers it has prepared a local transport plan which sets out its aims and objectives. The plan supports the CPCA's non statutory spatial framework which looks to align essential infrastructure, housing and job growth. The plan brings together the local transport plans prepared by

Cambridgeshire County Council and Peterborough City Council, supporting the objectives set out for the TSCSC.

Cambridge City Council:
The city council has a vision to lead a unified city 'one Cambridge fair for all'
Cambridge - caring for the planet: A city that takes robust action to tackle the local and global threat of climate change, both internally and in partnership with local organisations and residents, and to minimise its environmental impact by cutting carbon, waste and pollution.

This vision is delivered through a number of policies, plans and strategies;

Air Quality Action Plan 2018-2023

This sets out priorities for maintain and improving air quality. The actions fall into three main categories:

- Reducing local traffic emissions as quickly as possible to meet national objectives.
- Maintaining pollutant levels below national objectives.
- Improving public health by reducing population exposure to air pollutants.

Proposals include:

- lowering emissions from taxis, by increasing the number of electric and hybrid vehicles through incentives and installing more charging points.
- reducing bus and coach emissions, by working with partners to invest in more environmentally friendly vehicles.
- reducing HGV emissions in the city centre, by promoting 'greener' methods for making deliveries of goods, such as by cycle.
- using planning policies to improve access to sustainable modes of transport.
- educating people about the health impacts of poor air quality and encouraging 'greener' lifestyles.

Climate Change Strategy 2016-2021

Sets out a number of key objectives including 'reducing emissions from transport by promoting sustainable transport, reducing car travel and traffic congestion and encouraging behaviour change'. This will be achieved through the cities partnership within the Greater Cambridge Partnership which is investing City Deal funding to make improvements to public transport and cycling infrastructure with the aim of tackling congestion, reducing journey times, reducing greenhouse gas emissions and improving air quality and promoting low emission buses and taxis. The City Council have declared a climate emergency with an ambition to be carbon neutral by 2050.

The strategy sets out a number of key areas where monitoring will be important:
•Reducing energy consumption and emissions by promoting energy efficiency measures, sustainable construction, renewable energy sources, and behaviour change
•Reducing emissions from transport by promoting sustainable transport, reducing car travel and traffic congestion, and encouraging behaviour change
•Reducing consumption of resources, increasing recycling and reducing waste

Cambridge Local Plan (2018)

The local plan sets out the way we will meet the development needs of Cambridge to 2031. Over that time the city has plans to grow significantly; supporting the nationally important economic contribution the city makes and the factors that are inseparable from that success, seen in the exceptional quality of life and place that Cambridge benefits from. The vision for the local plan sets out a number of relevant strategic objectives, including:

- contribute to the vision of Cambridge as an environmentally sustainable city, where it is easy for people to make a transition to a low carbon lifestyle. This means making best use of energy (including community energy projects), water and other natural resources, securing radical reductions in carbon emissions, minimising environmental impact and being capable of adapting to the impacts of climate change;
- be highly water efficient, contribute to overall flood risk reduction through water sensitive urban design, and help to improve the quality of the River Cam and other water features in the city;

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- be located to help minimise the distance people need to travel, and be designed to make it easy for everyone to move around the city and access jobs and services by sustainable modes of transport;
- ensure appropriate and timely provision of environmentally sustainable forms of infrastructure to support the demands of the city, including digital and cultural infrastructure; and
- promote a safe and healthy environment, minimising the impacts of development and ensuring quality of life and place.

The following policy areas support the delivery of the vision and relevant to this topic paper:

Policy 5: Strategic transport infrastructure - Development proposals must be consistent with and contribute to the implementation of the transport strategies and priorities set out in the Cambridgeshire Local Transport Plan (LTP) and the Transport Strategy for Cambridge and South Cambridgeshire (TSCSC).

Policy 15: Cambridge Northern Fringe East and new railway Station Area of Major Change. Designates the NEC as an area of major change.

Policy 28: Carbon reduction, community energy networks, sustainable design and construction, and water use. Monitoring will be integral to;
- carbon reduction
- water management
- site waste management

All new development will be required to meet the following minimum standards of sustainable construction, carbon reduction and water efficiency as set out in the plan.

Policy 31: Integrated water management and the water cycle

Policy 32: Flood risk

Policy 35: Protection of human health and quality of life from noise and vibration – noise and vibration can be managed through the use of on-site sensors, support monitoring of the noise impact assessment.

Policy 36: Air quality, odour and dust monitoring will support:
- there is no adverse effect on air quality in an air quality management area (AQMA);
- pollution levels within the AQMA will not have a significant adverse effect on the proposed use/users;
- the development will not lead to the declaration of a new AQMA;

Policy 80: Supporting sustainable access to development

Development will be supported where it demonstrates that prioritisation of access is by walking, cycling and public transport, and is accessible for all**.**

Policy 81: Mitigating the transport impact of development – measuring and understanding the impact on movement both within and outside of the developments area.

Policy 82: Parking management

New developments will be favoured where they take a holistic, early and design-led approach to the management of parking.

South Cambridgeshire District Council:
South Cambridgeshire has a vision to put the heart into Cambridgeshire by:

- Helping businesses to grow - Helping to ensure people's homes are close to their jobs and can be accessed by walking, cycling and using public transport
- Building homes that are truly affordable to live in - Working with partners to provide alternatives to private car travel through new and improved walking, cycling and public transport routes
- Being green to our core - Installing new air quality monitors so that we can track, maintain and improve air quality, Installing electric vehicle charging points at Council offices and incentivising taxi operators and drivers to make the move to electric vehicles
- Putting our customers at the centre of everything we do

South Cambridgeshire has declared a climate emergency with an ambition to be zero carbon by 2050. The Business Plan 2019-24 includes a broad and far-reaching programme consisting of 14 high level actions on zero carbon.

South Cambridgeshire Local Plan 2018

The South Cambridgeshire Local Plan sets out the planning policies and land allocations to guide the future development to meet the needs of the district up to 2031. It includes policies on a wide range of topics such as housing, employment, services and facilities, and the natural environment. The policies relevant to this topic paper are:

Policy S/2: Objectives of the Local Plan
- To protect the character of South Cambridgeshire, including its built and natural heritage.

- To deliver new developments that are high quality and well-designed with distinctive character that reflects their location, and which responds robustly to the challenges of climate change.
- To maximise potential for journeys to be undertaken by sustainable modes of transport including walking, cycling, bus and train.

Policy SS/4: Cambridge Northern Fringe East and Cambridge North railway station

a. Take into account existing site conditions and environmental and safety constraints;

b. Demonstrate that environmental and health impacts (including odour) from the Cambridge Water Recycling Centre can be acceptably mitigated for occupants;

c. Ensure that appropriate access and linkages, including for pedestrians and cyclists, are planned for in a high quality and comprehensive manner;

Policy CC/1: Mitigation and Adaptation to Climate Change

Planning permission will only be granted for proposals that demonstrate and embed the principles of climate change mitigation and adaptation into the development.

Policy CC/2: Renewable and Low Carbon Energy Generation

Policy CC/3: Renewable and Low Carbon Energy in New Developments

Policy CC/4: Water Efficiency - All new residential developments must achieve as a minimum

water efficiency equivalent to 110 litres per person per day and non-residential development demonstrates BREEAM standard for 2 credits.

Policy CC/6: Construction Methods

Policy CC/7: Water Quality

Policy CC/8: Sustainable Drainage Systems

Policy CC/9: Managing Flood Risk

Policy SC/10: Noise Pollution - Conditions may be attached to any planning permission to ensure adequate attenuation of noise emissions or to control the noise at source.

Policy SC/12: Air Quality - Development will not be permitted where it would adversely affect air quality in an Air Quality Management Area (AQMA); or lead to the declaration of a new AQMA through causing a significant deterioration in local air quality by increasing pollutant levels either directly or indirectly; or if it would expose future occupiers to unacceptable pollutant levels**.** Larger development proposals that require a Transport Assessment and a Travel Plan as set out in Policy TI/2 will be required to produce a site based Low Emission Strategy. This will be a condition of any planning permission given for any proposed development which may result in the deterioration of local air quality and will be required to ensure the implementation of suitable mitigation measures**.**

Policy TI/2: Planning for Sustainable Travel - Developers will be required to demonstrate they will make adequate provision to mitigate the likely impacts (including cumulative impacts) of their proposal including environmental impacts (such as noise and pollution) and impact on amenity and health. Travel Plans must have measurable outputs, be related to the aims and objectives in the Local Transport Plan and provide monitoring and enforcement arrangements. Planning obligations may be an appropriate means of securing the provision of some or all of a Travel Plan, including the requirement for an annual monitoring and progress report. Submission of area-wide Travel Plans will be considered in appropriate situations.

Policy TI/3: Parking Provision

The Council will encourage innovative solutions to car parking, including shared spaces where the location and patterns of use permit, and incorporation of measures such as car clubs and electric charging points.

Policy TI/10: Broadband

Policy SC/2: Health Impact Assessment

New development will have a positive impact on the health and wellbeing of new and existing residents.

Policy SC/4: Meeting Community Needs

Policy HQ/1: Design principles

Policy SC/2: Health Impact Assessment

Greater Cambridge Sustainable Design & Construction SPD

This supplementary planning document sets out the standards required to meet the visions, objectives and policies of the Cambridge and South Cambridgeshire Local Plans as sustainably as possible. It comes at a critical time in the approach to climate change and the environmental crisis by both local and national government, and after Parliament revised the 2008 Climate Change Act to bring carbon reductions to 100% by 2050, a target that both local authorities recognised earlier in the year.

Applicable to schemes across Cambridge and South Cambridgeshire, it is recommended that consideration of the following issues should be included within the Sustainability Statement:

- The integration of smart technologies;

Environment Monitoring Opportunities and Key Issues

Sensors

Sensors allow the monitoring of changes in environmental conditions such as air quality, water levels, noise and vibration, movement (vehicles, cyclists or pedestrians) and parking this information can then be analysed creating intelligence. The ubiquity of connectivity (mobile, fibre, and low-power wide area networks), increased battery life, and the ability to put intelligence into devices (at the edge) has made it cheaper and easier to deploy devices into the environment. The Smart Cambridge programme has been trialling sensors to measure movement, air quality as well as noise. The information collected has then been analysed and visualised using the Intelligent City Platform built by the University of Cambridge. This will need to ensure that all data collected will be in line with General Data Protection Regulation (GDPR) complying with industry standards, and council statutory duties.

Opportunities
- To create a network of sensors which help the developers/promoters and planners to understand whether the development is meeting the expected environment standards, thresholds and/or targets. e.g. trip budgets, car parking, air quality, noise etc.
- To take a strategic approach to sensing which reduces the cost of deployment and operation
- To use innovative new sensing products that build on the NEC ambitions to be an innovative new development.

Risks
- Sensor market is still maturing and there is no certification process for sensors which carries a risk that the data produced is of insufficient quality. The sensor strategy should be developed in partnership with relevant specialists.

Data

The information produced by sensors 'data' will need to be stored somewhere ready for processing and analysis. NEC will need to either develop a data infrastructure of its own which will need to be interoperable with other data infrastructure or may have opportunity to use a wider city platform. Thought needs to be given to the data standards and schemas that are used so data be combined with other similar data sets. Particularly where cameras are used (movement data) there needs to be thought given to privacy aspects of how data is

collected and used and the governance process needs to ensure that data is used In an ethical manner.

Data is only of use if intelligence is drawn from it. There have been significant advances in the intelligence that can be drawn from data. Advanced modelling techniques can help developers and planners understand the impact of the development. The development of 'digital twins' which bring a number of systems into one environment (air quality, transport, energy etc.) can bring understanding to the interrelationship between different systems. This will be particularly important in helping to meet carbon targets. NEC is an opportunity to explore how digital twins can support development and is an area of significant interest to the University of Cambridge through the Centre for Smart Infrastructure and Digital Built Britain. Digital Twins can be 3D environments which link the physical form to data collected and can help engage residents.

For decision makers tools such as visualisations and dashboards can give a view of the environmental performance of the development as well as movement. This can support a more agile decision and planning approach. An example of this may be where development is generating far fewer trips than anticipated and so future phases can be brought forward at pace, or if movement thresholds are going to be missed interventions can be brought forward to address the issues.

Opportunities
- To gain a granular near real-time understanding of the development, to support decision makers.
- Present information at the right temporal scale in a way that engages communities, members, planners and developers.
- Support the development in achieving targets around waste reduction, movement (particularly reducing vehicle trips), air quality, noise, vibration and water usage as well as energy and carbon impacts.
- Support innovation by making data available for 3rd parties to build products that support the development. Open data also helps to engage the community and local residents.
- By aggregating and sharing data across a number of developments and the city there maybe savings to be made in the commissioning and collecting of data.

- Data needs to be collected in a transparent and ethical manner. There is a risk that if a proper governance framework isn't in place residents/communities will object.
- Sensors aren't of the appropriate quality and that the information collected is poor affecting decision making.

Communications

To get the information from sensors to the data infrastructure the NEC development will need to develop a suitable communications infrastructure (see the connectivity topic paper). Most sensors can use a Low Power Wide Area Network (LPWAN) (standards such as Long Range (LoRa) protocol, wide area network (WAN), or internet of things providers SIGFOX or narrow band (NB) internet of things (IoT), for sensors that send back small packets of information. Because they are low power it increases the battery life of sensors to 10/15 years. Image based and more sophisticated sensors are likely to need 4G/5G mobile communications or if available fibre.

Opportunities

- Ubiquitous mobile and LPWAN can make the deployment for sensors relatively cheap and easy
- Can support innovation across the development

Risks

- Poor communications can impact the ability to collect data.

Preferred Approach

That NEC become a testbed for Sensor and Data innovations
- NEC should embrace the opportunity to develop sensor networks embedded into the development which supports the meeting of high environmental standards.
- Create a testbed that supports the testing and trialling of innovative new solutions.
- Develop a framework for sensing and data that allows the system to flex and adapt as new technologies are developed.

NEC should use new data tools such as 'Digital Twins' dashboards and visualisations to
- Support decision making processes
- Engage residents, businesses, and local communities
- Better manage any on/off street parking that is available
- 'Manage the kerb' for deliveries and drop-off/pick-ups

Develop a framework for data collection and handling
- Develop an ethical and governance framework to build trust in data collection
- Ensure using common standards and schemas for data collection which support interoperability
- Develop an approach to data infrastructure for the development/city
- Work with partners and domain experts to develop architecture, standards and cybersecurity

Support 3rd party innovation
- Open communications networks and open data can support business innovation, particularly in the building management, mobility and environmental spaces.

Embed the collection and use of data across topic areas
- Ensure that data collection/monitoring are embedded into other topic areas (energy, water management, mobility, etc.)

Reasons for preferred approach

A) Embedding innovation in NEC

Ensure that North East Cambridge can support an ecosystem of innovation by providing opportunities for public, private, and third sector organisations to access data to establish new services and assets that can benefit the community in a transparent way.

B) Carbon reduction

Harnessing new technologies to monitor environmental performance can provide actionable insights for resource efficiency gains to support carbon reduction.

C) Understand environmental performance including energy consumption waste, water, pollution etc.

Providing a framework for residents, visitors, workers, and the public sector to understand the environmental performance will be key to enabling the councils in meeting their climate emergency targets.

D) Support the reduction in vehicle trips

New ways to collect information could support the delivery of the trip budget target by providing opportunities to understand highway impacts in real time.

E) Minimise the impacts of pollution – air and noise

Data collection and dispersal can provide opportunities to manage any environmental health issues at North East Cambridge.

F) Manage the construction phase to minimise the impact on surrounding communities

Opportunities to ensure that construction can be considerate to existing and surrounding tenants and that contractors fulfil their obligations to work in an environmentally responsible manner.

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Appendix 10: Future Mobility Topic Paper

Introduction

The North East Cambridge (NEC) AAP supports a new approach in terms of the way people travel to and around the area. New advances in mobility can support a radical rethink of road vehicle use breaking the dependency on private cars (particularly sole occupancy) by creating an integrated transport system that is flexible, frictionless and personalised. Emerging technology can promote easy navigation and transition between sustainable transport modes using density and critical mass to support and sustain public transport solutions. Innovation in the mobility system will support the development meeting the relevant objectives set out in the AAP:

- NEC will provide a new model for low car dependency living, through maximising the use of and integrating with public transport, walking and cycling infrastructure.
- NEC will be a new walkable district for Cambridge that promotes easy navigation and transition between sustainable transport modes using density and critical mass to support and sustain uses.
- NEC will be demonstrably resource efficient, supporting the transition to zero carbon living that successfully combines low-tech green solutions with high-tech smart city technology to respond positively to the challenges of climate change
- NEC will deliver economic growth and prosperity that achieves social justice and equality

As well as considering how people and goods move into, out of and around the site the development will support the move away from unnecessary trips by providing future proofed communication networks that will support home working (see connectivity paper), alternative means of accessing goods and services and by providing local co-working spaces.

This new approach to mobility and the removal of the private car from significant areas of the development will impact on land use. Currently in urban areas around 15-30% of land is designated to parking spaces. New mobility models may also reduce the need for road space. This means that land can be reallocated increasing the land area available for development, for pedestrians and cyclists or greening and public realm, with associated benefits including improved physical and mental health and mitigating the higher temperatures and air pollution of urban areas and helping to create a better place.

Future facing mobility models are starting to drive greater choice in mobility solutions from on-demand shared cars, Demand Responsive Transport, autonomous pods/shuttles, free floating bike and scooter schemes (Micro mobility), and even augmented reality and digital wayfinding that supports walking and cycling. These new mobility models can support the sustainability of public transport solutions by solving the first/last mile challenge feeding travellers into the higher capacity core transport network, rail, bus or a system like the proposed Cambridge Autonomous Metro (CAM). Creating a door to door transport service to provide a strong level convenience that can incentivise sustainable travel.

Consumers are demanding a much more personalised and flexible public transport system that allows easy booking and payments, good customer experience and flexibility in how they travel. To deliver a seamless experience that can rival the ease of owning a private a car, a concept called 'Mobility as a Service' (MaaS) is emerging to bring different mobility options into one platform, often offering one click payments across a range of options from bus/train/bike/car clubs/hire car/bike hire/taxi/autonomous vehicles (AVs). When residents

first move into a new development or employees start a new job it is a key opportunity for behaviour change.[1] A high quality MaaS offer embedded in NEC AAP along with personalised travel advice and potentially incentivised (Mobility credits/loyalty/reward) along with the spatial aggregation of modes (new and traditional), traveller facilities (Electric Vehicle (EVs) charging) and complimentary 'utility' functions (co-working spaces, small-scale retail, pharmacy, parcel lockers) would be a powerful enabler to mode shift away from the private car.

Key Evidence Documents

Evidence that we already have:

- Cambridge and South Cambridgeshire Transport Plan Adopted March 2014 - https://www.cambridgeshire.gov.uk/residents/travel-roads-and-parking/transport-plans-and-policies/cambridge-city-and-south-cambs-transport-strategy

- Cambridgeshire and Peterborough Combined Authority Local Transport Plan - While a new CPCA Local Transport Plan was adopted in February 2020 for the CPCA area. This supersedes an interim document – an amalgamation of Cambridgeshire County Council and Peterborough City Council's Local Transport Plans – that was adopted by the CPCA in June 2017 as single plan for the whole area - https://cambridgeshirepeterborough-ca.gov.uk/assets/Transport/Draft-LTP.pdf

- Cambridge City Council – Electric Vehicle and Infrastructure Strategy (2019)- https://www.cambridge.gov.uk/media/7988/electric-vehicle-and-infrastructure-strategy.pdf

- Future Mobility Is one of the four grand challenges of the UK's industrial strategy (2019) - https://www.gov.uk/government/publications/industrial-strategy-the-grand-challenges/industrial-strategy-the-grand-challenges

- Cambridgeshire and Peterborough Economic Review (2018) - https://www.cpier.org.uk/

- DfT - Road to Zero - Next steps towards cleaner road transport and delivering our Industrial Strategy (July 2018) - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/739460/road-to-zero.pdf

- Future of Mobility: Urban Strategy (Department for Transport) - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/846593/future-of-mobility-strategy.pdf

- Greater Cambridge Autonomous Vehicle Strategy – Published 2020

- Ready for Innovation - The Opportunity for Innovation in Rural Transport – Connected Places Catapult https://ts.catapult.org.uk/intelligent-mobility/im-resources/publications/

- Zenzic – UK Connected and Autonomous Roadmap to 2030 - https://zenzic.io/roadmap/

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[1] Transport Xtra, 2018., Changing Travel Behaviour. Online: https://www.transportxtra.com/publications/local-transport-today/news/56894/changing-travel-behaviour/

- The Future of Mobility foresight report (2019), Government office for science- https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/780868/future_of_mobility_final.pdf

- The opportunity for Mobility as a Service (Transport Systems Catapult) - https://ts.catapult.org.uk/wp-content/uploads/2016/08/Mobility-as-a-Service_Exploring-the-Opportunity-for-MaaS-in-the-UK-Download.pdf

- NEC Transport Evidence and Addendum

Topic Papers:

- Environmental Monitoring
- Digital connectivity
- Health & wellbeing
- Environmental Health
- Climate Change
- Community safety
- Anti poverty
- Internalisation

NPPF and other relevant national legislation

The **National Planning Policy Framework (NPPF 2018)** has a presumption in favour of sustainable development for both plan-making and decision-taking. The NPPF has a requirement for developments which generate significant amounts of movement to be supported by a Transport Assessment or Transport Statement and Travel Plan.

The planning system should actively manage patterns of growth by directing significant new development to locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.

Paragraph 102 states that transport issues should be considered from the earliest stages of plan-making and development proposals and that opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised. Also that;

- opportunities to promote walking, cycling and public transport use are identified and pursued
- the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains

Additionally, paragraph 105 states that there is a need to ensure an adequate provision of spaces for charging plug-in and other ultra-low emission vehicles.

Paragraph 108 states - In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

- appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;

- any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

Paragraph 109. Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

Paragraph 110. Within this context, applications for development should:

(a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

(b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

Paragraph 111. All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.

Background/Context/Relevant Data/Corporate Council Objectives and Strategies

There are four relevant authorities that will be involved in the development of the NEC development, Cambridgeshire County Council, Cambridge City Council and South Cambridgeshire District Council and Cambridgeshire and Peterborough Combined Authority. These are supported by the Greater Cambridge Partnership on the delivery side. These are the objectives and strategies that are relevant to this topic paper:

Cambridgeshire County Council

The County Council's vision is to make the county 'a great place to call home' with three priority outcomes:

- A good quality of life for everyone – by nurturing healthy communities that can access resources, connect with others and become sustainable. Improve social and economic equality and encourage people to choose healthy lifestyles.
- Thriving places for people to live – by investing in the environmental, infrastructure and services and building supportive, resilient communities that are great places to live.
- The best start for Cambridgeshire's children.

Mobility is integral in helping to achieve these aims. The County Council is the Highway Authority with responsibility for on-street parking and for maintaining the county's roads. Some of its strategichighway responsibilities have now passed to the Cambridgeshire and Peterborough Combined Authority. In its previous role the County Council put together the Transport Strategy for Cambridge and South Cambridgeshire which covers the NEC AAP area.

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The Transport Strategy for Cambridge and South Cambridgeshire (TSCSC) was adopted by Cambridgeshire County Council on 4 March 2014 and ensures that local councils plan together for sustainable growth and continued economic prosperity in the area.

Approximately 44,000 new jobs and 33,500 new homes will be created in Cambridge and South Cambridgeshire by 2031. The strategy provides a plan to address the rising population and increase in demand on our travel network by shifting people from cars to other means of travel including cycling, walking and public transport.

This strategy has two main roles:

- It provides a detailed policy framework and programme of schemes for the area, addressing current problems, and is consistent with the Cambridgeshire Local Transport Plan 2011-26. It is part of how the Council manages and develops the local transport network of the County as a whole
- It supports the Cambridge and South Cambridgeshire Local Plans, and takes account of future levels of growth in the area. It details the transport infrastructure and services necessary to deliver this growth

The strategy contains details of the major schemes proposed in the short, medium and longer term. The programme will be regularly reviewed given the extent of growth and development in the area.

What the Strategy does

- States the Council's aim for more journeys to be made by bus, train, bike and on foot so that traffic levels aren't increased.
- Ensures extra capacity for traffic to travel round the outskirts of Cambridge, so that road space into and across the city can be prioritised for buses, cyclists and pedestrians
- Provides additional Park and Ride options on the fringes of Cambridge, to reduce the amount of unnecessary traffic travelling through the city
- Ensures public transport, cycling and walking are the best ways of getting around and across the area, since they will be quicker and more convenient than by car
- Reduces car traffic by using a variety of techniques, which may mean limiting the available road space for cars
- Enables people to use public transport for at least some of their journey into Cambridge or surrounding towns, by creating a frequent, quality service across major route
- Development of local transport solutions with communities, which link to public transport along key routes

What we are doing in Cambridge:

- Encourage more people to walk, cycle and use public transport for journeys into, out of and within the city
- Promote bus routes that connect key economic hubs and link to the new train station at Cambridge Science Park Railway Station
- Persuade more people to car share
- Prioritise pedestrian, cycle and bus trips across the city and make these methods of transport more convenient than using a car
- Maintain general traffic at current levels

The County Council has declared a Climate Emergency and is developing a **climate change and environment strategy** was meant to go full council in March 2020, but has been delayed due to Covid-19. It sets out a vision to deliver net zero carbon by 2050. Transport is a priority area of the strategy and the county will manage its highways to prioritise walking, cycling and public transport and supporting the uptake of electric vehicles. This will minimise carbon emissions and improve air quality. Active network management will allow all communities to access alternative forms of transport such as autonomous vehicles and electric vehicles. These strategy aims have been embedded into the Combined Authority's local transport plan.

Cambridgeshire and Peterborough Combined Authority (CPCA)

The devolution deal for Cambridgeshire and Peterborough sets out key ambitions for the combined authority. Most relevant to this topic paper is its ambition to 'deliver outstanding and much needed connectivity in terms of transport and digital links'.

As the CPCA is now the local transport authority with strategic transport powers it has prepared a local transport plan which sets out its aims and objectives. The plan supports the CPCA's non statutory spatial framework which looks to align essential infrastructure, housing and job growth. The plan brings together the local transport plans prepared by the County Council and the local transport plan for Peterborough supporting the objectives set out for the TSCSC.

Cambridge City Council:

The City Council has a vision to lead a unified city 'one Cambridge fair for all'

Cambridge - a great place to live, learn and work: A city where getting around is primarily by public transport, bike and on foot.

Cambridge - caring for the planet: A city that takes robust action to tackle the local and global threat of climate change, both internally and in partnership with local organisations and residents, and to minimise its environmental impact by cutting carbon, waste and pollution.

This vision is delivered through a number of policies, plans and strategies;

Air Quality Action Plan 2018-2023 sets out priorities for maintain and improving air quality

The actions fall into three main categories:

- Reducing local traffic emissions as quickly as possible to meet national objectives. Proposals in this area include:
    - lowering emissions from taxis, by increasing the number of electric and hybrid vehicles through incentives and installing more charging points.
    - reducing bus and coach emissions, by working with partners to invest in more environmentally friendly vehicles.
    - reducing HGV emissions in the city centre, by promoting 'greener' methods for making deliveries of goods, such as by cycle.
- Maintaining levels of pollutants below national objectives, including by using planning policies to improve access to sustainable modes of transport.
- Improving public health, including by educating people about the health impacts of poor air quality and encouraging 'greener' lifestyles.

Electric Vehicle and Infrastructure Strategy (2019) – sets out a plan for how the city council will support the deployment of charging infrastructure and the move to electric vehicles.

Climate Change Strategy 2016-2021

Sets out a number of key objectives including 'reducing emissions from transport by promoting sustainable transport, reducing car travel and traffic congestion and encouraging behaviour change' This will be achieved through the cities partnership within the Greater Cambridge Partnership which is investing City Deal funding to make improvements to public transport and cycling infrastructure with the aim of tackling congestion, reducing journey times, reduing greenhouse gas emissions and improving air quality and promoting low emission buses and taxis. The City Council have declared a climate emergency with an ambition to be carbon neutral by 2050.

Cambridge Local Plan (2018)

The local plan sets out the way we will meet the development needs of Cambridge to 2031. Over that time the city has plans to grow significantly; supporting the nationally important economic contribution the city makes and the factors that are inseparable from that success, seen in the exceptional quality of life and place that Cambridge benefits from. The local plan is supported by the TSCSC, setting out the transport mitigations for new development. The relevant policies in the local plan are;

Policy 1: The presumption in favour of sustainable development – Future mobility will support the move to more sustainable modes of transport, supporting the economic development of the area and improving quality of life.

Policy 5: Strategic transport infrastructure – Cambridge City Council will work to support the uptake of sustainable transport by supporting.

> 1. delivery of local and strategic transport schemes, subject to the outcome of up-to-date, detailed assessments and consultation, where appropriate;
>
> 2. promoting greater pedestrian and cycle priority through and to the city centre, district centres and potentially incorporating public realm and cycle parking improvements;
>
> 3. promoting sustainable transport and access for all to and from major employers, education and research clusters, hospitals, schools and colleges;
>
> 4. working with partners in supporting the TSCSC's aim for a joined-up, city- wide cycle and pedestrian network by addressing 'pinch-points', barriers and missing links;
>
> 5. linking growth to the proposed city-wide 20 mph zone; and
>
> 6. easing pressure on the air quality management area (AQMA) in the city centre.

Policy 15: Cambridge Northern Fringe East and new railway Station Area of Major Change. Designates the Cambridge Northern Fringe East and the new railway station to enable the creation of a revitalised, employment focussed area centred on a new transport interchange. This formed the basis of the Area Action Plan, which has now grown to include the Science Park and other areas of west of Milton Road.

Policy 28 Carbon Reduction, community energy networks, sustainable design and water use – focus on promoting patterns of development that reduce the need to travel by less environmentally friendly modes of transport. The sustainability statement should address how the proposals meet policies relating to sustainability including, transport mobility and access.

Policy 36: Air quality, odour and dust – development will only be permitted if it has adverse effect on air quality in the Air Quality management area (AQMA) or lead to a new AQMA

Policy 80: Supporting sustainable access to development – ensure that development on the edge of the city are supported by high quality public transport linking them to the city centre and major centres of employment and supporting public transport, walking and cycling to, from and within the development

Policy 81: Mitigating the transport impact of development – Developments will only be permitted where they do not have an unacceptable transport impact.

Policy 82: Parking management - Planning permission will not be granted for developments that would be contrary to the parking standards.

New developments will be favoured where they take a holistic, early and design-led approach to the management of parking for motor vehicles and cycles. Car parking standards are an important means of managing traffic levels in and around a development, especially when combined with measures to increase access to transport alternatives to the private car. The Council continues to promote lower levels of private car parking in order to help achieve modal shift, particularly for non-residential developments where good, more sustainable transport alternatives such as walking, cycling and public transport exist.

Car-free and car-capped development, where new on-street permits are restricted to existing (not new) residents, is supported by the Council where the development will not impact negatively on the surrounding area by displacing car parking. It is therefore important that where car-free development is proposed, the appropriate on-street parking management is in place

The Council strongly supports contributions to and provision for car clubs at new developments to help reduce the need for private car parking. Electric vehicle charging points or the infrastructure to ensure their future provision should be provided within a development where reasonable and proportionate.

The Cambridge Local Plan is currently being reviewed and a joint Greater Cambridge Local Plan with South Cambridgeshire being developed.

South Cambridgeshire District Council:

South Cambridgeshire has a vision to put the heart into Cambridgeshire by:

o   Helping businesses to grow - Helping to ensure people's homes are close to their jobs and can be accessed by walking, cycling and using public transport
o   Building homes that are truly affordable to live in - •Working with partners to provide alternatives to private car travel through new and improved walking, cycling and public transport routes
o   Being green to our core - Installing new air quality monitors so that we can track, maintain and improve air quality, Installing electric vehicle charging points at Council offices and incentivising taxi operators and drivers to make the move to electric vehicles

o Putting our customers at the centre of everything we do

South Cambridgeshire has declared a climate emergency with an ambition to be zero carbon by 2050.

South Cambridgeshire Local Plan (**2018)**

The South Cambridgeshire Local Plan sets out the planning policies and land allocations to guide the future development to meets the needs of the district up to 2031. It includes policies on a wide range of topics such as housing, employment, services and facilities, and the natural environment. The policies relevant to future mobility are:

Policy SS/4: Cambridge Northern Fringe East and Cambridge North railway station

c. Ensure that appropriate access and linkages, including for pedestrians and cyclists, are

planned for in a high quality and comprehensive manner;

Policy CC/1: Mitigation and Adaptation to Climate Change - Planning permission will only be granted for proposals that demonstrate and embed the principles of climate change mitigation and adaptation into the development. To mitigate climate change, proposals should demonstrate: promotion of sustainable forms of transport, such as using buses, cycling or walking, and reduction of car use (Policy HQ/1 & Transport Policies);

Policy HQ/1: Design Principles - All new development must be of high quality design, with a clear vision as to the positive contribution the development will make to its local and wider context. As appropriate to the scale and nature of the development, proposals must: Achieve a permeable development with ease of movement and access for all users and abilities, with user friendly and conveniently accessible streets and other routes both within the development and linking with its surroundings and existing and proposed facilities and services, focusing on delivering attractive and safe opportunities for walking, cycling, public transport and, where appropriate, horse riding; Ensure that car parking is integrated into the development in a convenient, accessible manner and does not dominate the development and its surroundings or cause safety issues;

Policy SC/12: Air Quality - Where development proposals would be subject to unacceptable air quality standards or would have an unacceptable impact on air quality standards they will be refused. Larger development proposals that require a Transport Assessment and a Travel Plan as set out in Policy TI/2 will be required to produce a site based Low Emission Strategy. The development promotes sustainable transport measures and use of low emission vehicles in order to reduce the air quality impacts of vehicles.

Policy TI/2: Planning for Sustainable Travel - Development must be located and designed to reduce the need to travel, particularly by car, and promote sustainable travel appropriate to its location. Planning permission will only be granted for development likely to give rise to increased travel demands, where the site has (or will attain) sufficient integration and accessibility by walking, cycling or public and community transport, including: Developers of 'larger developments' or where a proposal is likely to have 'significant transport implications' will be required to demonstrate they have maximised opportunities for sustainable travel and will make adequate provision to mitigate the likely impacts through provision of a Transport Assessment and Travel Plan. All other developments will be required to submit a Transport Statement. Where a Transport Assessment / Statement or Travel Plan is required, a Low Emissions Strategy Statement should be integrated.

Policy TI/3: Parking Provision - The Council will encourage innovative solutions to car parking, including shared spaces where the location and patterns of use permit, and incorporation of measures such as car clubs and electric charging points.

Existing Issues

Congestion

Cambridge experiences over 206,000 vehicle movements into and out of the city every day.[2] Issues with affordability of housing (average house price is 15.62 times higher than the average salary) means employees are moving further away from the city and spending more time travelling, significantly impacting quality of life and health as well as creating dependence on the private car. The Greater Cambridge area is growing rapidly with plans to build 33,500 houses by 2031 and to create 44,000 new jobs. This will put increasing pressure on the road network and if nothing is done to address it road traffic will increase by 30% at peak in Cambridge and by 40% at peak in surrounding areas doubling the time travellers will spend in traffic. The amount of traffic is having a significant impact on the operation of the public transport system with buses particularly at peak time being caught in congestion making journey times slow and unreliable.

The Ely to Cambridge Transport Study (January 2018) considered the transport needs of the Ely to Cambridge corridor as a whole, including the needs of the major developments on the corridor such as the new town north of Waterbeach and North East Cambridge. Currently around 76% of work trips to the North East Cambridge area are made by car. This is significantly higher than many other areas in and around Cambridge, such as the Cambridge Biomedical Campus or CB1 around Cambridge Station. The opening of Cambridge North railway station, and delivery of public transport, cycling and walking improvements mean there is a real opportunity to greatly improve this situation.

The growth of e-commerce / convenience economy is generating traffic. Miles travelled by vans has increased by 56% since 2000, according to a report by the Society of Motor Manufacturers and Traders - vs 9% passenger car miles https://www.smmt.co.uk/wp-content/uploads/sites/2/SMMT-Light-Commercial-Vehicles-Delivering-for-the-UK-economy.pdf

In view of the evidence of existing and future highway constraints, the emphasis is on seeking a very low share of journeys by car to, from and within the area. A trip budget approach is proposed for managing car trips. This essentially identifies the level of car trips that can be accommodated to and from Milton Road, and to and from Kings Hedges Road, without leading to further impact on the road network.

The Greater Cambridge Partnership has a programme of work to help address issues of congestion and is aiming to get 1 in 4 people out of their cars and using more sustainable modes including walking, cycling or public transport by creating a world class public transport system that is better than the private car. The CPCA's Local Transport Plan sets out its ambitions relating to tackling congestion (see policy section) and it is in the process of developing a mass transit system, CAM metro that would likely serve the development.

Pollution

Without action the levels of congestion will cause a significant worsening of air quality. The centre of Cambridge has been within an Air Quality Management Area since 2004. Air quality has been improving, albeit slowly, in most parts of Cambridge in recent years, but there are parts of the city, including the busy central streets, where levels of nitrogen dioxide (NO2) continue to be high. The main source of NO2 in Cambridge is vehicle emissions.

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[2] https://cambridgeshirepeterborough-ca.gov.uk/assets/Transport/Future-Mobility-Zone-for-Greater-Cambridge-Redacted.pdf

Public Health data attributed 257 deaths in Cambridgeshire in 2013 to Particulate Air Pollution, compared with 34 from Road Traffic Accidents; of which 47 deaths were in Cambridge.[3]

Traffic and congestion are also contributing to noise nuisance. In England alone, the annual social cost of urban road noise was estimated in 2010 to be £7–£10 billion. This includes the costs of sleep disturbance, annoyance and health impacts from heart attacks, strokes and dementia.

Climate Change

Greenhouse gas emissions: Today, transport is the largest greenhouse gas emitting sector in the UK, accounting for 27% of greenhouse gas emissions. Road transport accounts for 91% of these.

Land Use

Inefficient use of limited space: There are six cars for every ten people in the UK, but the average car is unused 96% of the time. According to one report, parking spaces occupy around 15-30% of a typical urban area.

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[3] https://cambridgeshireinsight.org.uk/wp-content/uploads/2017/08/Transport-and-Health-JSNA-2015-Air-Pollution.pdf

Future Mobility Opportunities and Key Issues

Autonomy

- Public Transport applications – these tend to be shuttles/pods and range currently in size from 4 seats to 12. There are a number of companies demonstrating this technology (Navya, Easy Mile and RDM). It is anticipated that Cambridge will be demonstrating a 12 seat autonomous shuttle on the busway in 2020 and Rotterdam have been running a successful link for a number of years. Operationally they tend to run either at low speeds or on segregated infrastructure providing a first/last mile link into the core network bus/rail or CAM Metro. These can take significant space in the public realm and create severance, which need to be mitigated by urban design.

- Autonomous cars – Most experts agree that driverless technologies are coming and their arrival, at scale, is inevitable within the next 30 years. There exists differences of opinion regarding the rate of arrival, and the technical detail of the intermediate steps (For example, there is a huge difference between the idea that some driverless cars will be on our roads and will be able to operate freely under certain conditions, and the idea that all cars will be fully driverless and can operate on the full extent of our road system anywhere, any time, and under any conditions: Connected and self-driving vehicles could enable smoother driving, reduce accident-induced delays and improve overall network management. It has been estimated that even a low (25%) penetration of connected and self-driving vehicles in urban areas could lead to peak journey time savings of 21% and a reduction in journey time variability of nearly 80%.

  However the Lords select committee publication 'Connected and Autonomous Vehicles: The future?' says: "The theoretical potential of CAV to reduce traffic congestion varies depending on the level of vehicle autonomy and the penetration rate. While we cannot say with any certainty what the impact on congestion will be, it is possible to imagine a situation of total gridlock as CAV crawl around city centres. It is important that the right policy decisions relating to CAV are made in order to reduce the likelihood of this occurring. (Paragraph 96)"

  Opportunities
- To develop a first/last mile autonomous shuttle offering to feed residents into the core transport network.
- For cars with autonomous parking systems to drop residents off at their destinations and to then park at the edge of the site
- To use autonomous cars to develop an on-demand shared taxis service
- To utilise the technology to address issues of congestion and to support sustainable mobility

  Risks
- Uncertainty to the impact of autonomous vehicles and the impact on both the transport network and land use. How will policy respond to the challenge and harness the benefits while mitigating any negative impacts.

New Mobility Models

We are seeing the emergence of a number of new mobility models and existing models that are being transformed by new technologies. These models begin to develop the

mobility system in a way that gives residents options other than the private car to travel. This can support residents in not needing a car when they move into a development. These include;

Micromobility – providing access to on-demand scooters, bikes, electric bikes and potentially other devices that come into the market. An example of these are the Mobikes which are currently deployed in Cambridge

Demand Responsive Transport – A flexible service that provides shared transport in response to requests from users specifying desired locations and times of pickup and delivery. Examples of this are mini-bus services such as Arriva Click or Uber Pool. They are primarily shared vehicles and can support traditional bus services.

Ride-sharing - Formal or informal sharing of rides between unlicensed drivers and passengers with a common or similar journey route. Ride-sharing platforms charge a fee for bringing together drivers and passengers. Drivers share trip costs with passengers rather than making a profit.

On-demand vehicles – This can allow residents to access a vehicle when needed, because its on-demand this could be a car of varying sizes dependant on use, a van or some other vehicle.

Opportunities

- Give residents mobility options which support a move away from car ownership which will address issues of congestion and allow land to be re-allocated for alternative uses as car parking and the infrastructure needed to support private car use isn't needed.
- Support economic development and equality by giving access to mobility options.

Risks

- Understand the implications for land use and place making. How do residents access on-demand transport, do a network of 'mobility hubs' need to be developed. There have been examples where on-demand bikes and scooters have littered pavements and shared spaces, how can this be prevented?
- Potential conflict between users – electric mobility conflicting with pedestrians and giving rise to safe concerns regarding differential speeds.

Advanced Network Management

Management of the network can be split into two areas – **Surrounding road network** - the management of the surrounding road network, looking to lessen the impact on travellers coming into the development by giving better information on sustainable choices. Giving residents better network information to inform choices. **Within the development –** how to manage the kerb. The NEC AAP sets out a development with low car dependency. That gives an opportunity to re-purpose land to create better places. The land that is allocated to vehicles, parking, deliveries and space for new mobility needs to be managed carefully. The 'Kerb' can be managed in a much more dynamic way, changing the way its use by time of day or demand e.g. used for deliveries out of hours or by prioritising sustainable freight movements, pick up and drop of for share autonomous cars, community uses. Even road space could be used dynamically, allocated to different user's dependant on demand. Parking can now managed by using real-time data, to give availability, support booking and frictionless payments.

Opportunities

- To reallocate land to be used for people, development or community uses
- Support the move away from the private car
- Support the sustainable movement of freight into and out of the development
- Manage the amount of vehicles that enter the development

Risks

- Ensure that more efficient managing of parking spaces doesn't encourage trip generation
- Reliance on the availability of suitable technological / smart solutions

Freight

Deliveries – Technology has a role to play in managing deliveries particularly the last mile. Cambridge has seen the first drone delivery by Amazon and is beginning to see companies look at autonomous delivery vehicles. Companies like Starship are carrying out autonomous deliveries of small items and are currently trialling in Milton Keynes. Cambridge has been a pioneer in cycle deliveries with a consolidation centre at the edge of the city that disaggregates parcels on to smaller cycle-logistic bikes. The NEC is an opportunity to develop a consolidation hub that would enable smaller electric vehicles and bikes to serve the development.

Opportunities

- To create better places and lower emissions by creating a system of low carbon delivery vehicles
- Prevent large delivery vehicles from entering the site
- Potential for land savings as you need less space for deliveries.
- Consolidation of deliveries into a reduced number of trips with vehicles entering the development and conflicting with people.
- More consumer friendly, flexible and agile system, enabling the selection of a delivery slot to avoid repeat deliveries.

Risks

- Unable to service business in an economic and timely manner
- A consolidation hub requires delivery by a private enterprise

Travel Behaviour

Travel consumers are demanding a much more personalised and flexible public transport system that allows easy booking and payments, good customer experience and flexibility in how they travel. To deliver a seamless experience that can rival the ease of owning a private a car, a concept called 'Mobility as a Service' is emerging to bring different mobility options into one platform, often offering one click payments across a range of options from bus/train/bike/car clubs/hire car/bike hire/taxi/AV. When residents/ employees first move into a new development it is a key opportunity for behaviour change. A high quality MaaS offering embedded in NEC AAP would support a cultural shift from private car to more sustainable modes. This can be combined with travel packs for residents moving into new developments which raises awareness of options (cycle map) / timetable information / discounted travel and to help guide residents through mobility options. When residents or

new employees move into the development or new jobs it is a key opportunity to shift behaviours.

Opportunities

- Shift behaviours and embed a culture of using more sustainable modes
- Create a user experience that is better than the private car
- Reduction in the land take for private vehicles which can be repurposed for development or community uses

Risks

- A poor customer experience, lack of availability of sustainable transport or mobility options doesn't support a move to other mobility options
- Business case makes MaaS unaffordable.
- Reliance on the availability of suitable technological / smart solutions.
- Short term subsidy of travel may not offer long-term solutions once subsidy ceases.

Support the need not to travel

Future proofed digital infrastructure (see connectivity paper) will support home working which reduces the need to travel. This can be supported by co-working spaces where residents need a workspace outside of the home and can access on-demand. An example of these are companies like We-Work and Regis.

Opportunities

- Reduce the number of trips needed particularly at peak times
- Better quality of life
- Increased demand for local facilities.

Risks

- How to future proof digital infrastructure
- Creating space that can flex with the demand and potential uses.

Electric Vehicles

Government have set the direction for the electrification of motor transport by banning sales of internal combustion engine cars by 2040 to deliver cleaner air and reduce carbon emissions, as set out in the 'Road to Zero' policy document, and the support for EV in the government's industrial strategy. As a result demand for electric vehicles and charging infrastructure is growing daily. The move to ultra-low emission vehicles is necessary to meet the local climate change commitments to be net zero carbon by 2050 and to meet air quality objectives set out in the Cambridge Air Quality Action Plan. Infrastructure will need to be provided to support electric vehicles and thought needs to be given as to where these are located and managed. Cambridge has significant challenges with its grid capacity and this needs to be factored when considering the deployment of infrastructure. However there is also a significant opportunity for vehicles to become part of the energy grid and to act as battery storage.

Opportunities
- Support the move to electric vehicles by providing the infrastructure needed
- Contribute to climate change targets and to reduce air pollution
- Vehicles to become an integral part of the power infrastructure supporting localised storage and contributing to addressing issues of grid capacity.

Risks

- Lack of infrastructure limits the opportunity for electric vehicles
- Interoperability between different charging systems
- Results in a switch from combustion engine to electric vehicles, with no benefit to levels of congestion or in terms of land take for parking

Data

Data is integral to the development and deployment of future mobility solutions, whether its feeding real time and static mobility data into travel apps, understanding what is happening in the road network to the kerbside, understanding the impact of development of movement, or understanding the role an electric vehicle can play to support the grid. Consideration needs to be given to how data is collected, stored and used on the development. How can this data support both the development process, managing movement and supporting residents?

Opportunities

- Support more sustainable travel and a better customer experience
- Better manage mobility by matching supply and demand
- Better understanding of the impact of the development on mobility, movement and the network.
- Begin to integrate mobility into other city systems such as energy
- Data, well presented, is a way of engaging with residents

Risks

- Lack of data slows the deployment of new mobility models
- No thought given to systems and standards can impact on interoperability
- There could be ethical issues with collection of some data sets

Preferred Approach

That the NEC become a testbed for future mobility innovations

- The NEC should embrace the opportunity to enhance personal mobility through the Greater Cambridge Shared Planning Service working with academia, developers, and operators to embed mobility innovations in the neighbourhood.
- Create a testbed that supports the testing and trialling of innovative new solutions
- Supports the development of a data infrastructure that supports mobility, including Mobility as a Service and demand responsive solutions
- Develop a framework for 'future mobility' that allows the system to flex and adapt as new technologies are developed

The NEC should use mobility innovation to support the better use of space

- Dynamic management of the kerb for deliveries of goods and for mobility purposes
- Encourage the use of sustainable modes of transport and move away from the need for car parking
- Better manage any on/off street parking that is available

Ensure future mobility puts needs of people walking and cycling first

- Walking and cycling should be the primary choice of travel. No innovation should de-incentivise or inhibit active travel movements in the neighbourhood or accessibility in the public realm

Develop a strategy for freight and deliveries

- That minimises the impact of commercial freight deliveries on the network and the public realm but supports the economic vibrancy of the area
- Supports home deliveries but minimises the impact on the network and the public realm

Reasons for preferred approach

A)   Embedding innovation in NEC

Enabling NEC to become a location for future mobility experiments will ensure new innovations are tested and piloted in situ to ensure that new developments can benefit from new transport.

B)   Carbon reduction

New mobility solutions can reduce reliant on car travel and increase the uptake of sustainable modes and active travel to support the councils' response to their declared climate emergencies.

C)   Place making and social equity

Future mobility can improve the ability of all residents, visitors and workers to move around, while providing potential for improvements in streetscape, greening, and road safety.

D)   Improved connectivity

Future mobility integration at NEC can enhance intra and inter-Area Action Plan mobility enabling people to move around the site using sustainable modes and improving its overall integration with Cambridge.

E)   Significant reduction in vehicle trips

Future mobility improvements aim to enhance the potential for the site to meet its trip budget by providing alternatives to car use that are both time efficient and accessible.

F)   Minimise the impacts of pollution, particularly air quality

Future mobility can help with he reduction of pollution including noise and air pollution by supporting modal shift towards active and sustainable travel modes.

Appendix

Future Mobility, definitions:

Autonomous/Automated Vehicles

The use of autonomous vehicles refers to vehicles which form part of the public transport system that are capable of operating without a driver, initial deployments are likely to have a safety driver on-board.

Mobility as a Service

Describes a shift away from personally-owned modes of transport towards the integration of various modes of transport along with information and payment functions into a single mobility service. Recent services that allow customers to purchase monthly subscription packages giving them access to public transport and private taxi and bike hire schemes are an example.

Demand responsive transport

A flexible service that provides shared transport in response to requests from users specifying desired locations and times of pickup and delivery. Dial-a-ride services scheduled through next day or advance bookings are a traditional example.

Dynamic demand responsive transport

More recent applications of demand responsive transport seek to work dynamically, adjusting routes in real time to accommodate new pickup requests often made minutes in advance.

Shared mobility

Transport services and resources that are shared among users, either concurrently or one after another. Public transport, or mass transit, as well as newer models such as car-sharing, bike-sharing and ride-sharing, are all types of shared mobility.

Ride-hailing

Ride-hailing services use smartphone apps to connect paying passengers with licensed taxi drivers or private hire vehicle operators who provide rides for profit.

Ride-sharing (sometimes known as car-pooling): Formal or informal sharing of rides between unlicensed drivers and passengers with a common or similar journey route. Ride-sharing platforms charge a fee for bringing together drivers and passengers. Drivers share trip costs with passengers rather than making a profit.

Micromobility

The use of small mobility devices, designed to carry one or two people, or 'last mile' deliveries. E.g scooters both electric and non-electric, on-demand bikes, cargo bikes, e-bikes and other personal travel devices such as skateboards.

Appendix C11: Waste Management and Collection Topic Paper

Introduction

The Greater Cambridge Shared Waste Service provides a waste management collection to over 126,00 households and empties over 32,000 bins each day. GCWS recognises it has a spectrum of housing types both established and new to service and this diversity is expanding. This paper summarises the position of the GCWS in its approach to waste management provision at existing and new developments to inform the North East Cambridge Area Action Plan.

Key Evidence Documents

- Resources and Waste Strategy for England
- 25 Year Environment Plan
- Waste Management Plan for England
- National Planning Policy for Waste
- Cambridgeshire and Peterborough Joint Waste Management Strategy
- Cambridgeshire and Peterborough Supplementary Planning Document and Design Guide for developers
- Greater Cambridge Shared Waste collection Policy

National Planning Policy Framework

The environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

Waste Management Plan for England

The Waste Management Plan for England sets out the Government's ambition to work towards a more sustainable and efficient approach to resource use and

management. Positive planning plays a pivotal role in delivering this country's waste ambitions through:

- delivery of sustainable development and resource efficiency, including provision of modern infrastructure, local employment opportunities and wider climate change benefits, by driving waste management up the waste hierarchy;

- ensuring that waste management is considered alongside other spatial planning concerns, such as housing and transport, recognising the positive contribution that waste management can make to the development of sustainable communities;

- providing a framework in which communities and businesses are engaged with and take more responsibility for their own waste, including by enabling waste to be disposed of or, in the case of mixed municipal waste from households, recovered, in line with the proximity principle and dealt with as close to the source of the waste;

- helping to secure the re-use, recovery or disposal of waste without endangering human health and without harming the environment; and ensuring the design and layout of new residential and commercial development and other infrastructure (such as safe and reliable transport links) complements sustainable waste management, including the provision of appropriate.

Greater Cambridge Waste Service Aims and objectives 2019-20

The key objectives of the shared waste service are to:

- deliver a safe and legally compliant service;

- maintain and improve service quality that residents can see and appreciate;

- lower operational costs, particularly in the areas of premises, management, administration, fleet and equipment costs;

- increase opportunities to market and compete for additional business, for instance in relation to trade waste;

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- find new opportunities to reduce net costs in relation to fleet procurement and maintenance;

- achieve service improvements, greater resilience and better performance, through shared knowledge and experience;

- enhance opportunities to work with other Cambridgeshire local authorities via the Recycling in Cambridgeshire and Peterborough Waste Partnership (RECAP) to reduce waste collection and disposal costs, improve income and secure service improvements;

- deliver the KEY Performance Indicators' (KPi's) for the service;

- deliver the ongoing benefits of a shared service through change and innovation.

KPi's for the service are to recycle 50% of the waste collected in 2019/20 and to collect 99.5% of bins as scheduled.

(Relevant) Operational Plans for 2019/20

- Service wide and local focused material quality campaign to reduce contamination in the recyclate.

- Implement changes to Yotta Alloy data management system for both streets and waste service to further improve digital end-to-end customer processes.

- Work with RECAP partners on contract reviews and partnership opportunities.

- Identify and develop operational plans to ensure the service will comply with the national 25 Year Resources and Recycling Strategy.

Greater Cambridge Waste and Recycling Policy

The Councils want to develop services that result in reductions in carbon emissions, and support the waste hierarchy, putting waste prevention first. The Waste Service is committed to increasing recycling in order to maximise use of finite resources thereby minimising energy use and waste disposal.

The Waste Service supports national and European pressures for change to reduce the amount of biodegradable waste that is sent to landfill. It addresses tightening health and safety laws, ensuring that the Council maintains safe, economic and efficient recycling and waste collections.

The Standard Waste Service consists of:

- 240 litre black bin or white sacks for general waste
- 240 litre green bin or brown sacks for garden and food waste
- 240 litre blue bin, boxes or transparent sacks for mixed dry recyclables
- Properties such as flats or accommodation blocks will normally use communal 1100 litre and 660 litre wheeled bins
- In most cases the service operates an alternate weekly collection with the exception of green waste that is collected on a monthly basis from December, January and February.

It is policy to be flexible on how the collections are provided to new developments and would welcome of mixture of solutions for house and flats including the use of underground as appropriate.

The Current waste collection policy can be found on the Cambridge City Council and South Cambridgeshire District Council websites:

https://www.cambridge.gov.uk/bin-collection-performance-and-policy

https://www.scambs.gov.uk/bins/recycling-and-reducing-waste/our-policy-and-performance/

Cambridge and South Cambridgeshire Local Plans and other related planning documents

Relevant documents have been highlighted in the evidence base at the start of this topic paper.

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The RECAP Supplementary Planning Document needs reviewing and does not fully reflect the latest guidance from the Greater Cambridge Waste Service. Until this is reviewed it should be considered in line with up to date guidance on the Cambridge City Council and South Cambridgeshire District Council websites:

https://www.cambridge.gov.uk/recycling-and-waste-guide-for-developers

https://www.scambs.gov.uk/planning/planning-permission/developer-guidance/waste-and-recycling-guide-for-developers/

Current Waste Collection Provision

Waste Management and collection provision to residents in Cambridge and South Cambridgeshire has traditionally been through the use of 240 litre two wheeled bins for houses and larger 1100 litre 4 wheeled bin for flats. Bins at flats have been contained within bin stores, cupboards and compounds of varying styles. To compliment the provision at the home these have been supplemented with community bring bank sites typically for items not collected from the home, e.g. textiles, books, small waste electrical items.

Over the last 5 years this approach has shifted to incorporate underground storage systems within new developments. These blend more successfully into the street scene and offer the option to replace traditional bins at houses, flats and above ground bring bank sites.

There are multiple benefits such as:

- Space efficiency in designing properties as no storage of bins within the property is needed.
- Eliminates the dumping of rubbish in bins stores and bring sites which creates practical and environmental difficulties and a financial burden for residents, managing agents and the Council.
- More efficient collection of rubbish (emptying fewer bins and less often). Bins can be remote monitored to help schedule collections.

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- Residents can use the bins when they wish with no collection days to remember.
- Increases the quality of the recycling collected.

Current provision includes:

Eddington, Cambridge
- All houses and flats have underground for rubbish and recycling. Exclusively HIAB (vehicle mounted cranes) system.

Chesterton Road, Cambridge
- Bring banks for dry mixed recycling (hydraulic lift system).

Hawkey Road, Trumpington, Cambridge

- Bring banks site for dry mixed recycling and Small Electrical (HI-AB and hydraulic lift system).

Fawcett Road Abode Estate, Trumpington, Cambridge
- Bring banks site for dry mixed recycling and small electrical (HI-AB and hydraulic lift system).

Glebe Farm Drive, Trumpington, Cambridge
- Bring banks for dry mixed recycling and small electrical items (HI-AB and hydraulic lift system)

Osprey Drive, Trumpington Meadows, Cambridge
- Bring banks for textiles and small electricals (hydraulic lift system)

Eddington is the only location so far where it has exclusively replaced wheeled bins for house and flats by using an underground collection system for general waste and recycling. Communal bring banks are used for garden and food waste that is collected and taken to be composted by site management.

Performance Data
Greater Cambridge Waste Service has a good recycling rate as shown below.

	2018/19
Quarter 1	55.60%
Quarter 2	51.50%
Quarter 3	50.29%
Quarter 4	45.77%
Annual	**51.07%**

The amount of new development and therefore new residents makes maintaining this good performance a challenge. Robust communications from the Council is vital for new residents but provision of suitable collection arrangements can have a fundamental effect on residents' participation in a scheme, both in terms of quantity and quality of recycling collected.

In particular, the success of recycling collection can be hampered by ineffective design of communal collection from flats. Greater Cambridge has a significant number of existing flats and new ones being developed. Residents in flats have little accountability for their waste which leads to abuse of bins (putting the wrong items in meaning it cannot be recycled) and abuse of bin stores themselves (dumping of items in bin stores). When this happens, the waste service cannot access the bin to empty it, it is very unpleasant for residents to use and interest and good will to do the right thing wanes.

If bins cannot be emptied on the first occasion and it is necessary to return, or excess waste needs clearing, the cost of this is borne by the Council, Managing agent and the tax payer.

Of the 51% recycling rate in 2018_19 about 23% was dry mixed recycling and the 28% garden and Food waste. By comparison the amount of dry mixed recycling collected from Eddington underground communal recycling areas is over 30%.

More open bin storage arrangements can have a positive effect, whether these are freestanding above ground or underground. They make the facilities more pleasant to use, reduce antisocial behaviour and ongoing costs. They can even foster better social interaction and neighbourliness.

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A recent analysis of the general rubbish collected (summer 2019) has shown how much more food waste is left in rubbish bins than is recycled, and highlights how much more food waste, paper and plastic there is to capture. Successful design of waste storage will have an important part to play in achieving this.
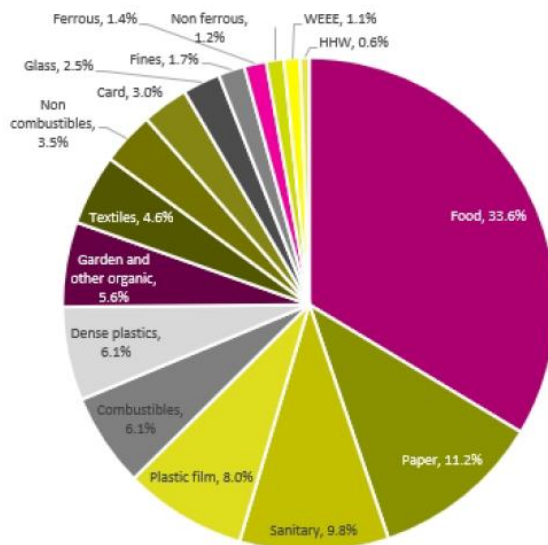

Figure 30 Composition of kerbside residual waste in Greater Cambridge Shared Services (%)

Image from RECAP Waste Analysis report, Resource Futures July 2019

Summary of responses to NEC AAP Issues & Options Report 2 (2019): Question 69: Should the AAP require the use of an underground system where this is viable?

Question	Key Issues from Issues and Options consultation 2019
Q69 Waste Collection (Support)	- U+I Group PLC – Rather than committing to any specific type of solution at this stage, it will be necessary to understand whether innovative systems used on other sites, (e.g. North West Cambridge), can be applied here. - Good idea, particularly to avoid the scourge of wheelie bins being scattered all over footways. Consider providing waste collection points to minimise street clutter. - Household waste systems to be similar to Eddington.

Q69 Waste collection (Comment)	• Cambridge Past, Present & Future – Before committing to any particular system, a full appraisal of facilities used at Eddington should take place. • Trinity College, Cambridge/Brookgate Land Limited - This would be difficult to retrospectively fit to CSP but would be more viable for new large scale development. • Refer to Eddington for methods.

Greater Cambridge Waste service would recommend that underground system is considered for blocks of flats instead of traditional bins stores. This should cater for general rubbish, dry mixed recycling, and food waste.

It may also be possible that houses (especially those near flats) could also use this same disposal point where appropriate.

If these houses have gardens (or the ground floor flats have gardens they are responsible for) then provision needs to be made for the collection of garden and food waste, otherwise they would only have food waste to dispose of as per the flats.

Houses that have space for storage of their own set of wheeled bins could be provided with those for all 3 waste streams. (General, recycling, mixed garden and food).

Other Key Issues:
- Yellow lines in public realm areas are a must adjacent to communal collection points for flats or for bring banks. This deters cars parking in spaces that are needed by refuse collection lorries. Underground containers cannot be lifted over vehicles when being emptied and a clear line of access to the vehicles is needed to pull wheeled bins. They should not be pulled past parked cars to get the lorry.
- Appropriate provision for garden and food waste needs to be considered.
- There should be no street furniture close the underground bunkers as to not interfere with the crane operations in the emptying of the bins.

Type of system and what is to be collected:

What system is most appropriate is depend on;

- Location
- Size of development
- Service user-Houses or flats
- What is being collected

Types of waste	HI-AB system (larger container sunk into in the ground. Needs vehicle mounted crane to lift)	Hydraulic system (Hydraulic powered platform on which a wheeled bin stands. Can be emptied by traditional collection vehicle)
General rubbish	X	x
Dry mixed Recycling	X	x
Garden waste	X	x
Food waste		x
Mixed garden and Food	X (smaller size container needed)	x
Bring banks for textiles, books and Small electricals		x

It is entirely possible to have a mixture of traditional wheeled bins at some properties or houses and underground system for communal collection arrangements.

As an alternative approach the ENVAC system has been used extensively elsewhere in Europe and closer to home at the Wembley redevelopment. Higher density development is required to make such a system viable. At Wembley there is a gross density of 122dph (average across the masterplan area), but this includes the stadium development and as such the overall NET density is higher than 122dph. The 'Housing Design Handbook' by Levitt et al (2018) says that 'it is hard to imagine the system being economic in developments of less than 100-150dph'.

Densities at NEC are 150-350dph so potentially suitable. According to the ENVAC website it reduces 'waste collection lorry miles by up to 90%'.

Preferred Approach

Underground collections points are proven and could be beneficial to a site such as this. On implementing an underground system, advice must be sought on bin type and size. Before any schemes are implemented it is necessary to ensure that policy requirements are included as per authority's waste policy documents.

The Greater Cambridge Waste Management Service understand that the high density of dwellings at North East Cambridge may pose challenges in terms of number of underground collections sites, but it may be possible to balance this with increased collection frequency.

As an alternative to underground banks, Greater Cambridge Waste Service would also be willing to consider the use of a system such as that provided by ENVAC in Wembley (installed in 2008) and Barking and Dagenham in London (Autumn 2019). This system still uses communal waste drop off points, as per the Eddington site, but instead of many individual bunkers below each receptacle, these drop off points are linked via underground pipes to a central collection hub and so the underground infrastructure is substantial. Once a certain amount of waste is deposited, the waste is sucked along the pipes to this central hub and means all waste is picked up from one location from the Council.

Barking is only the second site in the UK to use this technology, following the installation of the system at Wembley in 2008. Globally over 1,000 locations – from use the Envac waste management set up https://www.envacgroup.com/.

It is further recommended that the Bring Banks Sites are underground as it reduces antisocial behaviour around these community facilities.

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