RLW Estates

HEALTH IMPACT ASSESSMENT REPORT
Waterbeach Railway Station

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1 EXECUTIVE SUMMARY

1.1.1. This Health Impact Assessment (HIA) assesses the potential health and wellbeing impacts of the proposed new Waterbeach Railway Station, and identifies opportunities for enhancing the positive health impacts, and reducing any negative impacts.

1.1.2. The objectives of this HIA were to;
   - Identify key negative and positive health and wellbeing impacts of the proposed development during its construction and operation,
   - Develop, where feasible, recommendations for mitigating possible negative health and wellbeing impacts, and enhance any potential positive impacts identified, and
   - Suggest possible health and wellbeing indicators that can be used to monitor the construction and operational phases of the proposed development.

1.1.3. An assessment of health, population, environment and deprivation was undertaken, focusing on the health outcomes upon selected vulnerable groups.

1.1.4. The single greatest potential health outcome of the proposed development has been assessed as the indirect health benefits from improved access to transport and its associated indirect health benefits from the employment and training opportunities. These benefits have been assessed as being of permanent moderate benefit of major intensity for all groups.

1.1.5. In addition the proposed development has been assessed as providing indirect health benefits as a consequence of reducing Crime and public safety through safe urban design.

1.1.6. In contrast to the beneficial impacts above, the development has been assessed as contributing to adverse health outcomes as a consequence of reduced social cohesion / social capital as well as reduced neighbourhood amenity through the relocation of the existing station. The groups most vulnerable to these impacts include the children and young people, elderly, unemployed and socially excluded or isolated, these health impacts could be reduced to minor adverse, short-term and temporary in duration, should a shuttle bus service be provided transporting passengers between the old and new stations. Minor adverse health outcomes were also predicted due to the construction noise, which can be reduced through mitigation measures.

1.2 RECOMMENDATIONS

1.2.1. A set of recommendations were identified for a number of health determinants. Should these be put in place, additional health benefits could be harnessed from the proposed development. These recommendations are summarised in Table 13.

1.2.2. Through adopting ‘Designing out Crime’ sustainable development principles the proposed development will be able to further reduce the opportunities for anti-social behaviour and risk of crime. Creating separate segregated cycling routes and footpaths, allows free movement of cyclist and pedestrian reducing collision risk.

1.2.3. The provision of cycle stands within the public realm design of proposed scheme development, as well as prominent segregated cycle paths and enhanced pedestrian access would all result in a direct beneficial health outcome upon health inequality for the whole Waterbeach population.

1.2.4. Increased use of public transport or promotion of active travel methods could indirectly promote increased levels of physical activities amongst public transport users. Health benefits gained from the reduction of traffic congestion via modal shift from motor vehicles to active travel or public transport would be compounded with the health benefits arising from the increase in physical activity associated with regular use of public transport.

1.2.5. Noise generated during construction could contribute to increased stress levels and marginally impacting upon mental health. Mitigation of the above impacts could be brought about through positioning the construction site to minimise noise impacts upon noise receptors.
2 PROJECT BACKGROUND

2.1.1. WSP has been asked to undertake a Health Impact Assessment (HIA) of the relocation and construction of a new Waterbeach Railway Station (the ‘Proposed Development’) to ensure health, in all its forms, is adequately considered, and these considerations influence the design of the Proposed Development.

2.1.2. The proposed development consists of relocating the existing Waterbeach Station and the construction of a new station and associated transport access. It is the intention that future residents of the proposed Waterbeach new town will be given the opportunity to travel by rail using the new station, and avoid having to travel on the congested A10 as well as other busy roads. The new station will primarily serve as a departure station accessing Cambridge and beyond, though over time will also serve as a destination station with the emergence of the Science Park.

2.1.3. The rationale behind the new station stems from the recognition by Network Rail that the proposed new town would create significant and unacceptable traveller impacts upon the existing station at Waterbeach. In order to overcome these, Network Rail support the delivery of the proposed station as the best and most appropriate mitigation for this impact. The new station is intended to offer an improvement over the current station in a number of respects, thereby enhancing the transport provision available to Waterbeach village. With the emerging new settlement, this new station will provide early delivery of a key transport infrastructure, supporting the establishment of sustainable travel patterns from the outset.

2.1.4. In order to ensure that accessibility to the relocated station is maximised for existing passengers where reasonably practical, the station is to be located as far south as possible and will provide improved pedestrian and cycle infrastructure from the village to the new station.

2.1.5. The geometry of the station and the integration with the station facilities will be allow the new station to provide accessible transport for user groups, including enhanced accessibility for wheelchair users and those of impaired mobility.

2.1.6. The proposed site of the relocated station is immediately east of Bannold Drove and north of Bannold Road in the northeast of Waterbeach village. It is about a 1 mile travelling distance northwards along the Cambridge – Ely railway line from the existing station. The existing and proposed relocated station locations are indicated on Figure 1, and the HIA study area is outlined in Figure 2.

2.1.7. The proposed site for the new station and associated link road is currently agricultural land to the east between the railway and Long Drove, running parallel to the rail corridor. To the south of the proposed new access road are residential properties within the Annington Estate, comprising principally Kirby Road and Capper Road lie. To the west of the site are buildings within the former barracks complex, and a short distance to the north is the Waste Water Recycling Centre operated by Anglian Water.

2.1.8. The relocated station would have the following facilities:

- Northbound and southbound platforms both allowing 8-car trains to stop;
- An access for all footbridge with lift and staircases to provide pedestrian connection between the northbound and southbound platforms;
- Automatic ticket machines;
- Partial shelter on both platforms for waiting passengers, including shelters and an extended canopy on the southbound platform;
- A secondary footbridge (step only) over the railway line to provide emergency escape from the southbound platform and convenient access for passengers approaching from the existing village;
- A surface level car park with a total of 202 car parking spaces (200 public, 2 staff), 100 bicycle parking spaces, 10 drop off/pick up spaces, two bus shelters, and two taxi drop off/pick up bays.

2.1.9. Vehicular access to the proposed relocated station will be via a new link road connecting with Cody Road. The link road will have a 2m wide footway provided along the north side, with street lighting, and will be designed for a 20mph speed limit.

2.1.10. Access for walking and cycling is primarily via Bannold Drove, which runs largely parallel to and about 450m east of Cody Road. Bannold Drove is currently a country lane with no street lighting or footway provision. It will be improved as part of the station relocation to provide a multi-user route. Private vehicular use will be for access to adjacent properties and emergency access to the relocated station only.
2.1.11. The proposed station layout, link road and Bannold Drove improvements, is shown on the plan at Appendix A. The new station is expected to become operational in 2021, at which point the existing station will close.

2.1.12. The proposed development lies within the boundaries of South Cambridgeshire District Council (SCDC), in the Waterbeach Ward.

2.1.13. The site is approximately 6km from Cambridge, where there are extensive employment opportunities, primarily close to the newly opened Cambridge North rail station, and within Cambridge city centre.

2.1.14. The existing settlement of Waterbeach is a relatively large village with a Parish population of approx. 5,000 people according to the 2011 Census. It contains an established range of local facilities together with a rail station. Strategic employment already sited in the immediate vicinity comprises the Cambridge Research Park on the A10 with local employment at the Waterbeach Industrial Estate.

2.1.15. An Agricultural Land Survey conducted in 2002 has confirmed the Site to comprise a mixture of Grade 2, 3a and 3b land. There is limited existing vegetation in the form of tree belts or hedgerows within the Site although there are a number of individual trees located along ditch lines. The River Cam is designated as Main River by the Environment Agency (EA) and flows north-east approximately 0.5 km east of the Site (at its closest point to the Site). The Site benefits from the River Cam flood defences maintained by the Environment Agency.

2.1.16. SCDC’s Proposed Submission Local Plan (July 2013) allocates a new settlement known as Waterbeach New Town under Policy SS/5 on the former Waterbeach Barracks site and land to the east and north. The site allocation area is identified on the Local Plan Policies Proposals Map Inset H. Policy SS/5 confirms that the new town will require a significant transport infrastructure to ensure it represents a sustainable form of development and the policy identifies the delivery of a new Park and Ride site on the A10 to intercept traffic from the north of Waterbeach. The A10(N) is an important transport corridor and provides one of the main strategic links between Cambridge and its north eastern sub-region. In addition, Policy SS/5 requires a relocated Waterbeach rail station to serve the existing village and the new settlement, amongst other transport improvements. The relocated station is not dependant on the New Town, though it is anticipated that the new station will significantly enhance the public transport accessibility of the New Town and increase opportunities for sustainable travel.

2.1.17. The integration of the new Station and its car park will be proposed at a later stage in the planning process of the anticipated New Town development. This will include the evolution of a distinguishable public realm surrounding the station, providing a sense of place, as well as permeability of routes and access from the station into other parts of the anticipated New Town development.
Figure 1 Waterbeach Station Location
Figure 2 Waterbeach Station Relocation and HIA Study Area
3 HEALTH IMPACT ASSESSMENT

3.1.1. HIA is a systematic approach to identifying the differential health and wellbeing impacts, both positive and negative, of projects and plans.

3.1.2. HIA uses both qualitative and quantitative evidence, including public and other stakeholders’ perceptions and experiences, as well as public health knowledge. It is particularly concerned with the distribution of effects within a population, as different groups are likely to be affected in different ways, and therefore looks at how health and social inequalities might be reduced or increased by a proposed project or plan.

3.1.3. The aim of HIA is to support and add value to the decision-making process by providing a systematic analysis of the potential impacts, as well as recommending opportunities, where appropriate, to enhance positive impacts, mitigate negative impacts and reduce health inequalities.

3.1.4. HIA has been defined as¹:

“…a combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population”.

3.1.5. In this context, ‘health’ is defined by the World Health Organisation as;

“…a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”.

3.1.6. Health determinants are the personal, social, cultural, economic and environmental factors that influence the health of individuals or populations. These include a range of factors such as income, employment, education and social support.

3.1.7. Health Inequality can be defined as the difference in either health status, or the distribution of health determinants, between different population groups. Some health inequalities are unavoidable, others are not so and may well be unjust and unfair.

3.1.8. HIA apply the below model of health and well-being (Figure 3). The Socio-Environmental Model of Well-Being considers that health and well-being are a result of external influences, where an individual or family experiences a combination of adverse external factors which could result in health inequality.

3.1.9. The overall aim of the HIA will be to identify the aspects of the Proposed Development which have the potential to affect people’s health, both directly and indirectly. Some effects may be positive, others could be negative. The HIA will include recommendations which will remove or mitigate as far as possible any potential negative impacts on people’s health. It will also identify opportunities to maximise the potential benefits to people’s health.

3.1.10. South Cambridgeshire District Council (SCDC) adopted a Supplementary Planning Document (SPD) on HIA in March 2011\(^2\) which outlines the approach and scope expected in HIA’s presented in support of a planning application.

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4 SCOPE AND METHODOLOGY

4.1.1. The methodology of assessment used to establish the potential health and wellbeing impact of the proposed development has been guided by the South Cambridgeshire Health Impact Assessment SPD. Links are also made to other documentation which has been prepared in support of the proposed planning application.

4.1.2. The SCDC adopted SPD on HIA\(^4\) outlines an anticipated approach to the HIA process. The stages are outlined below:

- Screening, which is deciding whether an HIA is likely to be the best way to ensure health and equity issues are effectively addressed in a given situation.
- Getting the HIA team together as the HIA needs input from a team of people to provide different perspectives and areas of expertise.
- Scoping, which decides how to undertake an HIA in a given context.
- Appraisal or assessment, which identifies and considers a range of evidence for potential impacts on health and equity.
- Developing recommendations, which means formulating and prioritising specific recommendations that are based on the best available evidence.
- Make recommendations, as part of the HIA that include recommendations to adjust the development or make other changes that would improve health impacts/ consequences.
- Ongoing monitoring and evaluation, to assess if any of the specific HIA recommendations were implemented as part of the development, and if they contributed to positive effects on health and equity; if not, to review and consider the reasons for this, and how plans might be further adapted.

4.1.3. SCDC's HIA SPD largely sets out the HIA methodology and approach, and provides a framework around which the HIA can be governed. Therefore the requirement for a steering group to be appointed can be avoided. Instead, the HIA methodology and scope of the assessment were agreed mutually by WSP and the Senior Public Health Manager during consultation and email in January 2018.

SCREENING

4.1.4. An initial screening assessment was undertaken using the Health Urban Development Framework (HUDF)\(^5\) tool developed by NHS London Healthy Urban Development Unit. This was used as a basis for identifying the key health issues likely to arise as a result of the proposed development including any potential health risks and mitigation measures.

SCOPING

4.1.5. A Scoping Report for this HIA was produced by WSP and an outline of the Scope and Methodology for this HIA can be found below. The full Scoping Report is available in Appendix B.

4.1.6. A rapid desktop HIA was undertaken during January 2018.

4.1.7. The key tasks for this HIA were to:

- Develop a summary health and wellbeing profile of the Waterbeach Ward;
- Identify relevant evidence from past HIA's and other literature;
- Assess the potential health and wellbeing impacts of the proposed development, and the nature and likelihood of such impacts;
- Develop recommendations for minimising potential negative, and maximising potential positive, health and wellbeing impacts; and
- Suggest health and wellbeing indicators that can be used to monitor the construction and operation of the proposed development.

STUDY AREA

4.1.8. Though the relocated is likely to attract travellers from a wide area, the impact on health from its relocation is likely to have greatest effect in the community surrounding the existing station as well as Waterbeach Village. While the development has the potential to impact on the population outside of the area directly affected, these will be less than those impacts felt by the local community. It is therefore considered appropriate to focus the area of influence (geographical scope) of the assessment to the immediate surrounding of the proposed development site itself which is the Waterbeach Ward, shown above in Figure 2.

STUDY POPULATION

4.1.9. The population scope of this HIA is the residents of the Waterbeach Ward. The main vulnerable groups that were considered were:

- Elderly people;
- Children and young people;
- Black and Ethnic Minority groups;
- Disabled people with a physical or mental impairment;
- People living in geographical or social isolation;
- People that are economically inactive or unemployed
- Non-motorised users; and
- People with poor access to services, facilities and amenities.

DETERMINANTS OF HEALTH

4.1.10. The key determinants of health and wellbeing that were considered in this HIA were:

- Access to Transport
- Exercise and physical activity
- Social cohesion / social capital
- Air quality, noise and neighbourhood amenity
- Crime and Public Safety

COMMUNITY ENGAGEMENT

4.1.11. The proposed development has been the subject of considerable engagement with a wide range of stakeholders over a significant period of time. In addition to technical discussions with various sectors of the rail industry, with SCDC and Cambridgeshire County Council (CCC) in the context of formal pre-application engagement and with the local community through a series of public consultation events. Full details of these activities are set out in the Statement of Community Involvement.

4.1.12. The project team attended a number of parish council meetings to discuss this development proposal with further details set out in the Statement of Community Involvement.

4.1.13. Public consultation activities included a series of the station relocation public exhibitions during 2017 and early 2018. These were held at the Salvation Army Hall, close to the existing Waterbeach railway station, on 22nd April 2017, and 24th and 25th November 2017 covering both the Waterbeach New Town East and new station proposal. In addition a session relating specifically to the station relocation scheme and application were held at the same venue on 20th January 2018. Feedback, both critical and supportive, arising from these community engagement events have been incorporated into both the HIA scope and this HIA report.

BASELINE ASSESSMENT AND COMMUNITY HEALTH PROFILE

4.1.14. The baseline assessment and community profile was developed from existing sources including government departments and local health groups.

4.1.15. Feedback from the local community gathered through public consultation activities, specifically at the exhibition that took place on 20 January 2018, has also informed the baseline.

EVIDENCE

4.1.16. The evidence base was developed using:
APPRAISAL OF IMPACTS

4.1.17. The proposed development was assessed against each of the determinants of health, looking first at the evidence of how each determinant effects health, then the baseline conditions of the determinant category within the study area, and then the effect that the proposed development has on the health of the target population (short-term, temporary and permanent) via the determinant category.

4.1.18. A seven point assessment scale that classifies the significance of the identified impacts is used to categorise the effects for the assessment. This approach has been adapted from that used by the Institute of Occupational Medicine (IOM), for the North Staffordshire ‘Streetcar’ Bus Rapid Transport Scheme Health Impact Assessment, IOM, 2009. Significance incorporates the intensity of the impact and its potential duration, shown in Table 1 below.

Table 1 – Assessment Scale and Definition of Significance

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<th>Significance of Impact</th>
<th>Definition</th>
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<th>Duration (SML) (TIP)</th>
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<td>Major Adverse</td>
<td>Health effects are categorised as a major negative if they could lead directly to deaths, acute or chronic diseases or mental ill health. They can affect either or both physical and mental health either directly or through the wider determinants of health and wellbeing. These effects can be important local, district, regional and national considerations. Mitigation measures and detailed design work can reduce the level of negative effect though residual effects are likely to remain.</td>
<td>The exposures tend to be of high intensity. Over a large geographical area or affect a large number of people or impact vulnerable groups. (- - - / + + +)</td>
<td>Long term duration (L) Intermittent (I) Temporary (T) or Permanent (P) in nature</td>
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<td>Major beneficial</td>
<td>Health effects are categorised as a major positive if they prevent deaths/prolong lives, reduce/prevent the occurrence of acute or chronic diseases or significantly enhance mental wellbeing would be a major positive.</td>
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<td>Moderate Adverse</td>
<td>Health effects are categorised as a moderate negative if the effects are long term nuisance impacts, e.g. odours and noise, or may lead to exacerbations of existing illness. The negative impacts may be nuisance/quality of life impacts which may affect physical and mental health either directly or through the wider determinants of health. The cumulative effect of a set of moderate effects can lead to a major effect. These effects can be important local, district and regional considerations. Mitigation measures and detailed design work can reduce and in some/many cases remove the negative</td>
<td>The exposures tend to be of moderate intensity and/or affect a relatively localised area and/or affect a moderate-large number of people e.g. between 100-500 and/or sensitive groups (- / + +)</td>
<td>Medium term duration (M) Intermittent (I) Temporary (T) or permanent (P) in nature</td>
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Cambridge Science Park Station and Interchange Health Impact Assessment, Carter Jonas, May 2015 [online]
and enhance the positive effects though residual effects are likely to remain

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<th>Health effects are categorised as a moderate positive if they enhance mental wellbeing significantly and/or reduce exacerbations to existing illness and reduce the occurrence of acute or chronic diseases.</th>
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<td>Minor Adverse</td>
<td>Health effects are categorised as minor positive or negative, if they are generally lower level quality of life or wellbeing impacts. Increases or reductions in noise, odour, visual amenity, etc. are examples of such effects. These effects can be important local considerations. Mitigation measures and detailed design work can reduce the negative and enhance the positive effects such that there are only some residual effects remaining.</td>
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<td>Minor Beneficial</td>
<td>The exposures tend to be of low intensity and/or over a small area and/or affect a small number of people e.g. less than 100 (-/-+)</td>
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<td>Neutral/No</td>
<td>No health effect or effects within the bounds of normal/accepted variation.</td>
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<td>Short term duration (S) Intermittent (I) Temporary (T) or permanent (P) in nature.</td>
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**RECOMMENDATIONS**

4.1.19. A set of mitigation and enhancement measures were identified to reduce the potential negative, and enhance the potential positive, health and wellbeing impacts of the proposed development.
5 POLICY CONTEXT

5.1 NATIONAL POLICY

NATIONAL PLANNING POLICY FRAMEWORK

5.1.1. The National Planning Policy Framework (NPPF) was published in March 2012 and is key in ensuring the planning system focusses on delivering sustainable development. The NPPF supports ‘promoting healthy communities’ and its core planning principles require consideration of local strategies for health improvement in both plan-making and decision-taking. In particular the social dimension of sustainable development created a role for the planning system to promote healthy communities. According to the framework, the planning system can play an important role in facilitating social interaction and creating healthy, inclusive communities.7

5.2 LOCAL POLICY

5.2.1. South Cambridgeshire District Council SCDC’s Local Development Framework (LDF) was adopted in January 2007. The Development Control Policies DPD, includes the Objective;

To ensure that major new developments create distinctive, sustainable and healthy environments that meet the needs of residents and users, and contribute towards the creation of vibrant socially inclusive communities.

5.2.2. The emerging SCDC Local Plan will replace the LDF, and contains guidance and policies on the future development of the district. The Vision for the Draft Local Plan is set out as:

South Cambridgeshire will continue to be the best place to live, work and study in the country. Our district will demonstrate impressive and sustainable economic growth. Our residents will have a superb quality of life in an exceptionally beautiful, rural and green environment.

5.2.3. Two of the six key objectives of the Draft Local Plan include;

- To ensure that all new development provides or has access to a range of services and facilities that support healthy lifestyles and wellbeing for everyone, including shops, schools, doctors, community buildings, cultural facilities, local open space, and green infrastructure.
- To maximise potential for journeys to be undertaken by sustainable modes of transport including walking, cycling, bus and train.

5.2.4. Local Plan Policy SS/5: Waterbeach New Town states:

- It will deliver an example of excellence in sustainable development and healthier living, which will make a significant contribution to the long term development needs of the Cambridge area. It will deliver high quality public transport links to Cambridge, including a new railway station, to enable a high modal share of travel by means other than the car.

5.2.5. Policy SS/5 specifies the requirement for a relocated railway station to serve the new town and sets out the details for the allocation.

SOUTH CAMBRIDGESHIRE DISTRICT COUNCIL HEALTH IMPACT ASSESSMENT SUPPLEMENTARY PLANNING DOCUMENT8

5.2.6. The Local Plan includes a requirement for a Health Impact Assessment to be undertaken for any major developments. SCDC has produced a Supplementary Planning Document on Health Impact Assessment (HIA) to support this requirement.

5.2.7. This requirement is supported by a Supplemental Planning Document (SPD), whose aim is to provide additional advice and guidance on undertaking HIA for development proposals within South Cambridgeshire


and to expand on the broad policies set out in the Development Control Policies DPD: Policy DP/1 Sustainable Development.

5.2.8. Draft Local Plan Policy SC/2: Health Impact Assessment requires all applications for major developments to be accompanied by a Health Impact Assessment to ensure they “have a positive impact on the health and wellbeing of new and existing residents”.
COMMUNITY PROFILE

6.1.1. Baseline information has been gathered from various sources including the Cambridgeshire Joint Strategic Needs Assessment (JSNA), Department of Health and Social Care, Public Health England Health Profiles, and the Cambridgeshire annual demographic and socio-economic reports available on the Cambridge Insight website.

6.1.2. This section summarises the socio-economic and community baseline conditions for the spatial scope of the HIA. The most recent publicly available information has been used to create these profiles.

6.2 SOUTH CAMBRIDGESHIRE HEALTH AND WELLBEING PROFILE

6.2.1. Public Health England (PHE) Health Profile (2017) data was evaluated to determine the health status of the South Cambridgeshire population in comparison to the national average.

6.2.2. In terms of the “Our Communities” domain, children in low income families (under 16s), statutory homelessness, GCSEs achieved, violent crime (violence offences) and long term unemployment are all significantly better than the England average.

6.2.3. In terms of the “Children’s and young people’s health” domain, obese children (Year 6), Admission episodes for alcohol specific conditions (under 18s), and under 18 conceptions are all significantly better than the England average.

6.2.4. In terms of the “Adults health and lifestyle” domain, smoking prevalence in adults, percentage of physically active adults, and excess weight in adults are all not significantly different from the England average.

6.2.5. In terms of the “Disease and poor health domain” hospital stays for self-harm and hip fractures in people aged 65 and over are not significantly different to the England average. Hospital stays for alcohol related harm, the percentage of people recorded on GP registers with diagnosed diabetes, the incidence of TB, and new sexually transmitted infections (STI) are all significantly better than the England average.

6.2.6. In terms of the “Life expectancy and causes of death” domain, life expectancy (both male and female) and the under 75 mortality rates for both cardiovascular and cancer are significantly better than the England average. Infant mortality, suicide rate, and excess winter deaths are not significantly different from the England average.

6.2.7. The only indicator significantly worse than the England average for South Cambridgeshire was the number of people killed and seriously injured on roads (Life expectancy and causes of death domain).

6.2.8. The PHE Health profile for South Cambridgeshire concluded that the health of the people of South Cambridgeshire is generally better than the England average.

6.3 LOCAL PROFILE

6.3.1. Office of National Statistics local profile data for South Cambridgeshire was analysed to determine how the area performs across a number of indicators which are related to impacts from the proposed development. These were:

- Population Age Profile
- Levels of Recorded Crime
- Employment
- Self-assessment of General Health
- Level of Qualifications
- Method of Travelling to Work
- Long-Term Health Problem or Disability

http://fingertipsreports.phe.org.uk/health-profiles/2017/e07000012.pdf
6.3.2. This data has been used as a baseline within the following assessment, though it should be noted that when the 2011 census was undertaken, Waterbeach Barracks was still operational. Between 900-1,000 service personnel and their families were based at the Barracks up until its closure at the end of March 2013.

6.4 AGE DISTRIBUTION

6.4.1. South Cambridgeshire age distribution appears to be slightly more weighted towards a greater proportion of adults (35-54 years) and children (5-14 years) than the East of England region or England typical profile.

Figure 4 South Cambridgeshire Age Distribution, 2015

6.4.2. There is a significant difference between South Cambridgeshire and the England average proportion of adults between 20 to 29 years, with South Cambridgeshire having fewer adults in this age bracket. South Cambridgeshire has a similar proportion of elderly people (75 to greater than 90 years) to both the East of England region and England.

10 https://fingertips.phe.org.uk/profile/health-profiles/data#page/12/qid/3007000/pat/6/par/E12000006/ati/101/are/E07000012
7 ASSESSMENT

7.1 INTRODUCTION

7.1.1. This analysis of health impact has focussed on the determinants identified in Chapter 4 which fall into the following categories:

- Access to Transport
- Exercise and physical activity
- Social cohesion / social capital
- Air quality, noise and neighbourhood amenity
- Crime and public safety

7.1.2. The proposed development has been assessed against each of the above, looking first at the evidence of how each determinant affects health, then gathering the baseline conditions for each determinant category within the study area, and finally determining the effect that the development has on the health of the target population.

7.2 ACCESS TO TRANSPORT

EVIDENCE

7.2.1. In the UK almost 70% of the workforce commuted to work by car during peak times. In a report published by the transport consultants, INRIX looking at cost to the economies of the US, the UK, Germany and France\textsuperscript{11}, it was estimated that British drivers spent an average of 124 hours per year in gridlocked traffic. This is equivalent to working an additional 15.5 days per year. This loss of time has a direct and indirect impact on car commuting households. Direct costs relate to the cost of fuel, time wasted, an indirect costs relating to higher freighting and business fees from company vehicles, whilst idling in traffic, which are passed on as costs to household bills.

7.2.2. According to the 2008 Place Survey, 44% of adults in England reported access to health services as one of the key contributors to how good somewhere was to live\textsuperscript{12}. According to the Department for Transport, ‘over the course of a year over 1.4 million people miss, turn down or simply choose not to seek healthcare because of transport problems’\textsuperscript{13}. Capacity to reach healthcare services is affected by the accessibility of transport modes, availability of financial support for those on low incomes and the location of healthcare services\textsuperscript{14}. Groups impacted by disability and of certain ages may experience even greater barriers to health and social care services.\textsuperscript{15}

7.2.3. Transportation access promotes social inclusion. Social exclusion can occur as a result of a community not being able to easily access transport options.

7.2.4. Community severance is separation of different areas within a community by the flow of traffic.\textsuperscript{16} Social networks are susceptible to severance by physical barriers, such as roads and traffic, which can create both real and perceived barriers to social contact. For example, children may not be allowed to visit friends unaccompanied because of parental concern over road traffic accidents.

7.2.5. A study illustrating the effect of traffic on social contacts in three streets was performed in San Francisco.\textsuperscript{17} It was found that people living on the street with lightest traffic had twice as many acquaintances and three times as many friends as those people who lived on the street with the heaviest traffic.

\textsuperscript{12} Department for Communities and Local Government, 2008, Place survey, UK Government
\textsuperscript{12} Department for Communities and Local Government, 2008, Place survey, UK Government
\textsuperscript{13} Social Exclusion Unit, 2003, Making the Connections: Final Report on Transport and Social Exclusion
\textsuperscript{14} Randell, C., 2012, Measuring National Well-being - Where we Live – 2012, Office for National Statistics
\textsuperscript{15} Hamer, L., 2004, Improving patient access to health services: a national review and case studies of current approaches, Health Development Agency
7.2.6. Social capital was measured across different neighbourhoods and it was found that people in “car-dependent” localities were less likely to know and trust their neighbours and to participate in local organizations than people who lived in “walkable”, pedestrian orientated localities with less traffic and congestion.18

7.2.7. Pedestrian friendly neighbourhoods are built to be more encouraging to social contact. This can nurture and promote social networks, leading to a greater number of people using public space and local services, influencing social capital.

BASELINE

7.2.8. Cambridgeshire is partly a rural county and the rural geographies have low population densities which impacts on residents’ access to jobs and education, training and employability services.19 Limited access means individuals without access to private transport and on low incomes are particularly affected. Access to transport is likely to be a key barrier to the economic participation rate in rural areas.20

7.2.9. The proportion of people who travelled to work by car (either driving or as a passenger) in South Cambridgeshire in 2011 was 67.87%, which is slightly higher than the national average of 62.66%. The proportion of residents in South Cambridgeshire who travelled to work by public transport was 8.18%, compared to a national average of 16.4%.21 In Cambridgeshire, as in many rural counties, accessibility of jobs by public transport, cycling or walking is relatively low.22

7.2.10. The average travel to work time for residents of South Cambridgeshire is 20 minutes, which compares to an average of 18.83 minutes for Cambridgeshire, and a national average of 20.32 minutes.23

7.2.11. The average distance travelled to work by usual residents aged 16 to 74 in employment in 2011 in the Waterbeach Ward was 15.0 km. This was greater than the England average of 14.9 km travelled to work.24

7.2.12. In Cambridgeshire in 2014, 59.5% of primary school children walked to school, but only 35.3% of secondary school children did, cycling is less popular with 6.7% of primary and 15.5% of secondary school children choosing this mode in 2014.25 Car trips account for 26.4% of primary school trips and 10-15% of secondary school trips.

7.2.13. The method of travel to work of all usual residents aged 16 to 74 in the Waterbeach Ward, South Cambridgeshire and England is displayed in Table 2.26 Compared to regional and national figures, a higher percentage of residents in the Waterbeach Ward travel to work by train, bicycle and on foot. The percentage of residents who drive a car or van to work is lower than both regional and national figures. These figures reflect the fact that there is a rail station within the ward, and the availability of more localised employment opportunities available at Waterbeach Barracks (which has since closed).

7.2.14. Amongst current users of Waterbeach station, around 30% of passengers arrive on foot and 9% arrive by bicycle between 06:00 to 09:00hr.27 Of the passenger cars using the station car park or parking in the village, 87% have travelled via the A10, only 10% via Clayhithe Road (from areas to the east of the station) and 3% originated within the Village.

---

### Table 2 – Method of Travel to Work

<table>
<thead>
<tr>
<th>Method of Travel to Work (%)&lt;sup&gt;28&lt;/sup&gt;</th>
<th>Waterbeach Ward</th>
<th>South Cambridgeshire</th>
<th>England</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work mainly at or from home</td>
<td>7.3</td>
<td>7.8</td>
<td>5.4</td>
</tr>
<tr>
<td>Underground, metro, light rail, tram</td>
<td>0.1</td>
<td>0.2</td>
<td>4.1</td>
</tr>
<tr>
<td>Train</td>
<td>6.6</td>
<td>3.7</td>
<td>5.3</td>
</tr>
<tr>
<td>Bus, minibus or coach</td>
<td>3.1</td>
<td>4.4</td>
<td>7.5</td>
</tr>
<tr>
<td>Taxi</td>
<td>0.2</td>
<td>0.2</td>
<td>0.5</td>
</tr>
<tr>
<td>Motorcycle, scooter or moped</td>
<td>1.0</td>
<td>1.0</td>
<td>0.8</td>
</tr>
<tr>
<td>Driving a car or van</td>
<td>50.7</td>
<td>64.0</td>
<td>57.0</td>
</tr>
<tr>
<td>Passenger in a car or van</td>
<td>3.5</td>
<td>3.9</td>
<td>5.0</td>
</tr>
<tr>
<td>Bicycle</td>
<td>12.2</td>
<td>7.8</td>
<td>3.0</td>
</tr>
<tr>
<td>On foot</td>
<td>14.9</td>
<td>6.6</td>
<td>10.7</td>
</tr>
<tr>
<td>Other method of travel to work</td>
<td>0.5</td>
<td>0.5</td>
<td>0.6</td>
</tr>
</tbody>
</table>

<sup>28</sup> Excluding 'Not in employment'.

### 7.2.15.
Table 3 shows that there is a greater availability of cars or vans for households within the Waterbeach Ward when compared to the national level<sup>29</sup> despite fewer residents driving a car or van for work. This likely reflects car or van owners based at Waterbeach Barracks in 2011, and doesn’t necessarily represent the current population.

### Table 3 – Car or Van Availability

<table>
<thead>
<tr>
<th>Area</th>
<th>No cars or vans in household (households)</th>
<th>One or more cars or vans in household (households)</th>
<th>% households with access to a car or van</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterbeach Ward</td>
<td>316</td>
<td>1,974</td>
<td>86.2</td>
</tr>
<tr>
<td>South Cambridgeshire</td>
<td>6,571</td>
<td>53,389</td>
<td>89.0</td>
</tr>
<tr>
<td>England</td>
<td>5,691,251</td>
<td>16,372,117</td>
<td>74.2</td>
</tr>
</tbody>
</table>

### 7.2.16.
The Office of Rail and Road (ORR) publish annual estimates of the number of people using all stations in Great Britain. The figures for Waterbeach Station between 2006 and 2017 are shown below in Table 4. This data indicates a 94% increase in passenger numbers at Waterbeach between 2006-07 and 2016-17. This compares with a 75% increase seen at Cambridge Station and a 53% increase in rail passengers nationally over the same period.<sup>30</sup>

<sup>29</sup> Nomis, 2011. QS416EW – Car or van availability. [online] Accessed 23/01/2018
Table 4 - Waterbeach Station Use 2006-07 to 2016-17

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Passengers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-07</td>
<td>227,281</td>
</tr>
<tr>
<td>2007-08</td>
<td>250,039</td>
</tr>
<tr>
<td>2008-09</td>
<td>277,470</td>
</tr>
<tr>
<td>2009-10</td>
<td>266,020</td>
</tr>
<tr>
<td>2010-11</td>
<td>301,376</td>
</tr>
<tr>
<td>2011-12</td>
<td>312,216</td>
</tr>
<tr>
<td>2012-13</td>
<td>335,660</td>
</tr>
<tr>
<td>2013-14</td>
<td>344,722</td>
</tr>
<tr>
<td>2014-15</td>
<td>381,202</td>
</tr>
<tr>
<td>2015-16</td>
<td>420,730</td>
</tr>
<tr>
<td>2016-17</td>
<td>440,142</td>
</tr>
</tbody>
</table>


7.2.17. A passenger origin and destination survey undertaken at Waterbeach Station on 31st October 2017,

7.2.18. The walking accessibility of the current station is indicated by walking isochrones shown on the plan at Figure 4, which shows walking journey times from the site at 5 minute intervals at a typical walking speed of 4.8kph (about 3mph). This demonstrates that all of Waterbeach Village is within a 25 minute walk of the current station, albeit the quality of the route and pedestrian provision along Station Road east of the Church is relatively poor.
Figure 5 Walking Travel Times to Existing Waterbeach Station
7.2.19. The cycle accessibility of the current station is indicated by cycling isochrones on the plan at Figure 5. This shows that Waterbeach Village is within a 5 – 10 minute cycle ride of the station, at a typical cycling speed of 19.2kph (12mph).

7.2.20. There are 12 cycle parking spaces at the current station, on the northbound platform. An additional 32 cycle parking spaces are provided in the car park. Current cycle parking provision at the station has been identified as insufficient, with cyclists often using railings alongside the platform to chain their bike to. This can reduce the pedestrian flow capacity along the platform, causing a risk to rail user safety.

Figure 6 Cycling Travel Times to Existing Waterbeach Station
7.2.21. Access to the train station is important to the existing resident population in Waterbeach, and comments from the public consultation reflected this. Residents raised concerns about the increased distance and journey length to the new station. However, 40% of the public exhibition attendees strongly agreed and 32% agreed that the current station was not suitable for the proposed growth in the area, with safety and improved access cited as positive reasons for a new station.

ASSESSMENT

7.2.22. The new Railway Station will be served by a new link road which feeds into the existing road network, and a cycle and pedestrian prioritised route along Bannold Drove which links to the existing Waterbeach Village. The new station has bus stands and taxi drop off/pick up points. Station users travelling by car will be served by on-site parking as well as drop off/pick up points. Cyclists will have access to a 100 secure cycle parking spaces, which is double the number of cycle parking spaces at the existing Waterbeach station.

7.2.23. The predicted walking accessibility of the new current station is illustrated in Figure 6, which shows walking journey times from the site at 5 minute intervals at a typical walking speed of 4.8kph (about 3mph). This demonstrates that all of the existing and proposed extended Waterbeach New Town is within a 25 minute walk of the proposed new station. In addition the routes and pedestrian provision are proposed to be enhanced, well light and afforded with safe road crossings.
Figure 7 Walking Travel Times to New Waterbeach Station
7.2.24. The cycle accessibility of the new station has been calculated, and is illustrated in Figure 7. This demonstrates that all of the existing and proposed extended Waterbeach New Town is within a 10 minute cycle ride walk of the proposed new station at a typical cycling speed of 19.2kph (12mph). In addition the routes and cycle provision are proposed to be enhanced, well light and afforded with lengths of dedicated cycle path and safe crossings.

![Figure 8 Cycling Travel Times to New Waterbeach Station](image)

7.2.25. In comparison to current journeys to and from the existing station, the proposed new station will offer pedestrians and cycling rail commuter improved road safety during their journey both to and from the new Waterbeach station.

7.2.26. The new station will have formal bus stop provision including two bus shelters, with the intention that new or extended bus services be secured to integrate bus access with the village and the train timetable. This bus
access will include improved connections for residents nearest the existing station, so that the reduction in the walking accessibility of Waterbeach station with its relocation is offset for these residents by improved bus access.

**Figure 9 Proposed Bus Stops and Stop Catchment in Waterbeach - Early Phase**

7.2.27. The proposed development has the potential to improve health outcomes through bringing about improved access to essential health services, employment and training opportunities as well as prospects for social interaction. This is applicable to non-car users, though also offers car owners improved alternate transport option, thereby avoiding potential congestion. Improved access to transport has been predicted to represent a
permanent long-term moderate beneficial health impact of high intensity to the existing and future population of Waterbeach through indirectly improving health outcomes.

7.3 EXERCISE AND PHYSICAL ACTIVITY

EVIDENCE

7.3.1. Being physically active plays an essential role in ensuring health and wellbeing. It is known that physical activity benefits many parts of the body; the heart, skeletal muscles, bones, blood (for example, cholesterol levels), the immune system and the nervous system. Exercise and physical activity can reduce some of the risk factors for non-communicable diseases (NCDs), including reducing blood pressure, improving blood cholesterol levels, and lowering body mass index (BMI)\(^{31}\).

7.3.2. Physical activity plays an important part in a number of diseases, such as type 2 diabetes, heart disease and some cancers. The World Health Organization (WHO) estimates that physical inactivity is the fourth leading risk factor for global mortality\(^{31}\) and physical inactivity is responsible for 6% of deaths globally – around 3.2 million deaths per year, including 2.6 million in low and middle-income countries, and 670,000 of these deaths are premature\(^{32}\). Symptoms of depression in adolescents have also been linked to higher BMI and low levels of physical activity\(^{33}\), particularly among young women\(^{34}\).

7.3.3. It has been stated that the impact of physical inactivity on mortality could even rival tobacco use as a cause of death\(^{35}\).

7.3.4. Walkable environments assist a population to achieve their physical activity targets, compared with residents in less walkable areas. Populations meet physical activity targets where safe places to walk exist within ten minutes of home. The presence or absence of walkable streets is related to longevity, even after adjustment for demographic and socioeconomic factors and baseline health status\(^{36}\).

7.3.5. Switching journeys from cars to walking, cycling and public transport not only has a large beneficial impact on the individual’s health, but a wider benefit to the population health as there are corresponding decreases in overall air pollution levels.

7.3.6. Increasing levels of cycling and walking can reduce the risk of diseases such as cardiovascular disease, diabetes and dementia. Those that are most inactive will benefit the most.

7.3.7. Countries with the highest levels of active travel generally have the lowest obesity rates.

Table 5 - Summary of impact of physical activity on the risk of common disease

<table>
<thead>
<tr>
<th>Disease</th>
<th>Effect of physical activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coronary heart disease</td>
<td>Moving to moderate activity could reduce risk by 10%</td>
</tr>
<tr>
<td>Stroke</td>
<td>Moderately active individuals have a 20% lower risk of stroke incidence or mortality</td>
</tr>
<tr>
<td>Type 2 diabetes</td>
<td>Active individuals have a 40-50% lower risk</td>
</tr>
<tr>
<td>Colon cancer</td>
<td>The most active individuals have a 40-50% lower risk</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>More active women have a 40% lower risk</td>
</tr>
</tbody>
</table>

---

\(^{31}\) World Health Organisation, Global Health Risks: Selected figures and tables \[online\] Accessed 18/01/18

\(^{32}\) World Health Organisation, Global Recommendations on Physical Activity for Health, \[online\] Accessed 18/01/18


Osteoporosis | Being physically active reduces the risk of later hip fracture by up to 50%
---|---


**BASELINE**

7.3.8. The rate of excess weight in adults (16+) in South Cambridgeshire was statistically similar to the England average, with 63.6% of adults in South Cambridgeshire considered overweight or obese, compared to the national rate of 64.8%.

7.3.9. There is one GP practice in South Cambridgeshire with statistically significantly higher than national average rates of recorded obesity, which is The Maple Surgery, Bar Hill, which has a 10.6% prevalence of obesity.

7.3.10. Rates of excess weight in Reception Year children were statistically significantly better in South Cambridgeshire compared to the England average, with 17.3% of children overweight or obese, compared to the national rate of 22.1%. Similarly, the prevalence of excess weight in Year 6 children in South Cambridgeshire was also statistically significantly better than the England average, with 25.1% considered overweight or obese, compared to the national rate of 34.2%.

7.3.11. The rate of physical activity in adults (16+) in South Cambridgeshire is statistically similar to the England average, with 59.5% of adults 16+ achieving at least 150 minutes of physical activity per week.

7.3.12. Local data from the Health Related Behaviour Survey indicate higher levels of inactivity as children grow up, with 8% of Year 10 Cambridgeshire children inactive in the week before the survey compared to 4% of Year 8 children. The percentages of 15 year olds physically active and sedentary are statistically similar to the England average. Approximately 25% of all Cambridgeshire adults are inactive.

7.3.13. In Cambridgeshire in 2014, 59.5% of primary school children walked to school, but only 35.3% of secondary school children did, cycling is less popular with 6.7% of primary and 15.5% of secondary school children choosing this mode in 2014. Car trips account for 26.4% of primary school trips and 10-15% of secondary school trips.

7.3.14. Walking and cycling rates are lowest in those over 40 years of age in Cambridgeshire. Though, South Cambridgeshire has higher rates of both walking and cycling than the other non-city districts in Cambridgeshire.

**Table 6 - Proportion of residents who cycle (any length) for utility purposes by frequency, 2012/13**

<table>
<thead>
<tr>
<th>District</th>
<th>Sample Size</th>
<th>Cycle at least</th>
<th>1 x per month</th>
<th>1 x per week</th>
<th>3 x per week</th>
<th>5 x week</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Cambridgeshire</td>
<td>501</td>
<td></td>
<td>15.6</td>
<td>9.1</td>
<td>5.4</td>
<td>2.1</td>
</tr>
<tr>
<td>Cambridgeshire</td>
<td>2,498</td>
<td></td>
<td>20.1</td>
<td>15.5</td>
<td>10.2</td>
<td>5.8</td>
</tr>
<tr>
<td>England</td>
<td>162,781</td>
<td></td>
<td>6.5</td>
<td>4.5</td>
<td>2.6</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Source: Transport and Health JSNA – Active Travel

**Table 7 - Proportion of residents who walk (for at least 10 minutes) for utility purposes by frequency, 2012/13**

<table>
<thead>
<tr>
<th>District</th>
<th>Sample size</th>
<th>Walk at least</th>
<th>1 x per month</th>
<th>1 x per week</th>
<th>3 x per week</th>
<th>5 x per week</th>
</tr>
</thead>
</table>

7.3.15. Comments received during the public consultation were supportive of pedestrian improvements that would be done alongside the station relocation, and there was also support for improved facilities for cyclists at the station (such as cycle parking). Concerns were raised though, that with the additional parking provided at the station, it might encourage those further away from the station to drive. Overall 41% of attendees at the public exhibition felt that the improvements to Bannold Drove for pedestrians and cyclists were a welcome improvement, and 28% strongly agreed.

ASSSESSMENT

7.3.16. Any influence that the proposed development can have on encouraging more walking or cycling would result in a moderate beneficial health outcome.

7.3.17. The provision of secure cycle stands and safe routes for pedestrians and cyclists should promote active travel modes which would result in direct beneficial health outcomes to the general population.

7.3.18. The proposed development is intending to enhance Bannold Drove, resurfacing it in order to create an attractive new route with street lighting. This will upgrade Bannold Drove from a country lane with no street-lighting or footway provision to provide a 3.5m-4m wide multi-user route, with limited vehicle access for Bannold Drove residents only.

7.3.19. Walking and cycling routes through the village will also be enhanced, in particular along Way Lane, providing connections to the Greater Cambridge Partnership’s proposed Waterbeach Greenway cycle route. These walking and cycling improvements will provide routes to the new station that are safe, convenient and logical, in order to promote access to the station by these active and sustainable modes.

7.3.20. The high level of cycling and walking in the Waterbeach Ward study area may reduce the impact of any modal shift from road vehicle to bicycle or travelling on foot to be of a temporary medium term minor beneficial health impact, particularly with the provision of additional car parking spaces at the new station. However, cycle and pedestrian improvements may result in new residents of the larger future Waterbeach new town being positively influenced to choose sustainable active travel options, thereby securing a long-term permanent minor health impact of low medium intensity. However vulnerable groups including people with existing health conditions, the unemployed and low income groups as well as socially excluded or isolated groups have been predicted to experience a moderately significant beneficial health impact, of medium intensity which is long-term and permanent.

7.4 SOCIAL COHESION

EVIDENCE

7.4.1. Transportation and access are key to promoting social inclusion, as social exclusion can occur as a result of a community not being able to easily access transport options, amongst other things.

7.4.2. A long term regeneration study looking at community and neighbourhood outcomes over time\(^{40,41}\) reported on four indicators upon which social cohesion can thrive, these were:

- informal social control,
- perceptions of honesty,
- feelings of safety and

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7.4.3. In previous redevelopment schemes residents have reported that the high levels of support and contact they experienced with both friends and family prior to the redevelopment were sustained after the regeneration scheme had transformed their neighbourhood. Though wider community cohesion findings were less positive, as loss of elements of social cohesion were reported post-regeneration. Contrary to this was evidence that within the areas of regeneration residents reported feeling safer and part of the community.

7.4.4. Outcomes were observed as less positive for residents of areas peripheral to regeneration areas, (as these residents needs may not have been as targeted), as those within the regeneration area itself. However most of the residents within the periphery area felt that their neighbourhoods were improving, particularly in relation to their perception of the local environment, local shops, resident empowerment, as well as reduced levels of antisocial behaviour.

7.4.5. Given the link between high social integration and its positive effect on mortality, considered to be of a similar magnitude to stopping smoking. Avoiding loneliness and social isolation can improve our health, amongst individuals who took part in a 7.5 year study, those with stronger social relationships had a 50% greater likelihood of survival over that period, than those without such relationships.

7.4.6. Social networks and friendships not only have an impact on reducing the risk of mortality or developing certain diseases, but they also help individuals recover when they do fall ill.

7.4.7. The Social Exclusion Unit states that ‘participation in social, cultural and leisure activities is very important to people’s quality of life and can play a major part in meeting policy goals like improving health, reducing crime and building cohesive communities’. Problems with transport and the location and delivery of services contribute to social exclusion by preventing people from participating in work or learning and from accessing healthcare, food shopping and other local activities. People in deprived communities also suffer the worst effects of road traffic through pollution and pedestrian accidents.

7.4.8. New Communities, such as the one proposed for Waterbeach, adjacent to the new Railway Station, can have their own impact on health which has been explored in greater detail in the JSNA for New Communities published by Cambridgeshire County Council.

7.4.9. Loneliness and mental health problems, sometimes termed “New Town Blues”, were issues that arose in the new development of Cambourne, partly due to the lack of community buildings in the early stages of the development. This can be due to people moving away from their traditional support systems and provisions to meet people and friends. The social environment of a new community is important for physical and mental health, and can be facilitated by the social amenities, such as community buildings, that are included in such a development.

**BASELINE**

7.4.10. In order to attempt to estimate the extent of current social isolation in South Cambridgeshire, five indicators were reviewed, these were; looked after children rate, % of adults reporting a long term mental health problem, % adults registered with mental health services, suicide rate (persons) and statutory homelessness. These indices were available at county, regional and national level only, no ward level data was available.

7.4.11. The rate of looked after children in Cambridgeshire and the East of England Region appears to be less than that for the England as a whole. In Cambridgeshire, the percentage of adults reporting a long-term mental health problem is similar to that for England. In Cambridgeshire and the East of England Region as a whole, the rate of adults who receive secondary mental health services on the Care Programme Approach recorded as living independently, with or without support, was lower (poorer) than the rate for England.

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44 Social Exclusion Unit, 2003. Making the connections: Final report of Transport and Social Exclusion. [online]
7.4.12. The suicide rate in Cambridgeshire is lower than the England rate, though the rate in South Cambridgeshire is observed to be similar to the national rate. Homelessness in South Cambridgeshire is recorded as being lower than the rate for England as a whole.

Table 8 Indicators of Social Isolation

<table>
<thead>
<tr>
<th>Indicator</th>
<th>South Cambridgeshire</th>
<th>Cambridgeshire</th>
<th>East of England Region</th>
<th>England</th>
</tr>
</thead>
<tbody>
<tr>
<td>Looked after children: rate per 10,000 &lt;18 population</td>
<td>n/a</td>
<td>45.5</td>
<td>48.7</td>
<td>60.3</td>
</tr>
<tr>
<td>% reporting a long-term mental health problem</td>
<td>n/a</td>
<td>4.9</td>
<td>4.6</td>
<td>5.2</td>
</tr>
<tr>
<td>% Adults in contact with secondary mental health services who live in stable and appropriate accommodation (Persons)</td>
<td>n/a</td>
<td>50.2</td>
<td>44.1</td>
<td>58.6</td>
</tr>
<tr>
<td>Suicide rate (per 100,000 population)</td>
<td>10.5</td>
<td>8.4</td>
<td>9.7</td>
<td>9.9</td>
</tr>
<tr>
<td>Statutory homelessness (per 1,000 households)</td>
<td>1.9</td>
<td>2.7</td>
<td>2.5</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Source: https://fingertips.phe.org.uk/search/mental#pat/6/ati/102/par/E12000005

7.4.13. The estimated prevalence of depression among people of all ages in South Cambridgeshire of 14.1% is statistically similar to the England average of 15.0%. There are two GPs with statistically significant higher than national average rates of recorded depression (18+) in South Cambridgeshire (Willingham, 11.1% prevalence and Cambourne, 11.1% prevalence). 47

7.4.14. The public consultation exercise has highlighted how emotive an issue moving the railway station is, and how strongly current villagers feel about their access to such a facility, despite it being in poor condition and unsuitable for the long term. 44% of the public consultation attendees strongly agreed, and 24% agreed, that the proposed shuttle bus was needed to make the relocated station easier to access.

ASSESSMENT

7.4.15. The proposed development provides an opportunity for a new community resource to become established prior to the delivery of the proposed New Town. By investing in social infrastructure of this type, a sense of place is allowed to be established, providing a positive contribution to the mental wellbeing of the New Town, as recommended in the New Communities JSNA. 48

7.4.16. Relocation of the station away from the existing Waterbeach Village settlement, will have an initial limited impact upon existing residents of its removal, potentially contributing to a sense of social exclusion for those residents who are in close proximity to the current station, and may be more enhanced for those rail users who are less mobile. Therefore relocating the station could potentially result in a temporary negative impact

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resulting from an indirect health outcome associated with social exclusion. This health outcome has been predicted as a **short-term temporary minor adverse health impact** of **low intensity** for the following vulnerable groups: children and young people, older people, unemployed and low income groups and socially excluded or isolated groups.

7.4.17. Any temporary sense of social exclusion could be largely mitigated over time by the provision of attractive, safe and direct pedestrian and cycle routes to the new station, supplemented by secure cycle storage. The new stations additional car parking spaces, wider pickup/drop off spaces for wheelchair accessibility and disability pick up/drop off spaces adjacent to the station entrance would also contribute to significantly mitigating adverse effects of the station relocation. A shuttle bus facility between the existing station and the new station could also assist in the mitigation of social isolation. In addition the secure design of railway fencing, enclosed overbridges and robust railway site security during the construction period will significantly reduce the risk of rail related suicide attempts at the proposed relocated Waterbeach station. As a package these mitigations would result in a **short-term residual temporary minor adverse health impact**.

7.4.18. Due to the existing stations limited capacity to either expand or improve its accessibility to be compliant with the Disability Discrimination Act/Equalities Act 2010, a new station at Waterbeach is required. The location of the station has been positioned as far south in Waterbeach as possible, providing improved pedestrian and cycle infrastructure from the existing village to the new station. The geometry of the station and its integration with facilities allow the new station to now provide accessible transport for all user groups, including enhanced accessibility for wheelchair users and those of impaired mobility.

7.4.19. The new station includes an enhanced design which incorporates disability access, including overbridges, lifts to both platforms, disabled parking immediately adjacent to the station, as well as dedicated bus drop-off for bus users. The enhanced accessibility of the new station has been assessed as contributing positively to social cohesion resulting in a **long-term permanent moderate beneficial health impacts** upon people with existing health conditions and people with disabilities.

7.5 **AIR QUALITY, NOISE AND NEIGHBOURHOOD AMENITY EVIDENCE**

7.5.1. The association between health effects and exposure to air pollutants is now well established, with distinct health risks associated with exposure to particulates available at a local level.\(^{49,50}\)

7.5.2. The impact of long term human exposure to particulate matter (PM) anthropogenic pollution is estimated to have an effect on mortality equivalent to nearly 29,000 deaths in the UK.\(^{51}\) There is no known threshold concentration below which NO\(_2\) or PM\(_{10}\) have no effect on a population’s health.

7.5.3. Many of the sources of PM are also sources of NO\(_2\). Links between the occurrence of NO\(_2\) and health effects has strengthened substantially in recent years, though some of these are co-incident with PM, as noted by the Committee on the Medical Effects of Air Pollutants\(^{52}\) some could be attributed to other co-existing pollutants, such as Poly Aromatic Hydrocarbons (PAH) and Volatile Organic Compounds (VOC).

7.5.4. Defra have estimated that the effect of NO\(_2\) on mortality is equivalent to 23,500 deaths in the UK annually, though this estimate has not been endorsed by COMEAP\(^{53}\). Any increases in mortality are likely to be either as a result of cardiovascular and/or respiratory mortality, particularly with regards to an elevated short-term exposure to NO\(_2\).\(^{54}\)

7.5.5. Due to the correlation between differing airborne pollutants and similar health effects, one pollutant can often mask the effects of another and it is not always possible to discreetly isolate the health effects of a single

\(^{49}\) COMEAP 2010 The Mortality Effects of Long-Term Exposure to Particulate Air Pollution in the United Kingdom. A report prepared by the Committee on the Medical Effects of Air Pollutants. Available at: http://www.comeap.org.uk/

\(^{50}\) COMEAP 2012 Statement on Estimating the Mortality Burden of Particulate Air Pollution at a Local Level. Available at: http://www.comeap.org.uk/

\(^{51}\) The Mortality Burden of Particulate Air Pollution at a Local Level. Available at: http://www.comeap.org.uk/

\(^{52}\) Committee on the Medical Effects of Air Pollutants, Statement on the Evidence of the Effects of Nitrogen Dioxide on Health, COMEAP, March 2015

pollutant. The causal mechanism, primarily cardiovascular and respiratory, leading to increased mortality with increased exposure to particulate matter is well-founded, though processes behind NO\textsubscript{2} contributing to cardiovascular damage, respiratory disease or cancer are less understood.

7.5.6. Currently there is no threshold concentration below which a certain air pollutant has no effect on a population’s health.

7.5.7. Studies have reported statistically significant associations between long-term exposure to NO\textsubscript{2} and lung function in children, respiratory infections in early childhood and effects on adult lung function. Though mortality, lung cancer, and cardiovascular and cerebrovascular effects in adults are predominately weighted towards PM mass and not NO\textsubscript{2} (studies cited in COMEAP/2014/06 Annex B\textsuperscript{56}). Similar rates of mortality per 10 \(\mu\text{g/m}^3\) of PM\textsubscript{2.5} and NO\textsubscript{2} have been found in some studies\textsuperscript{56}. Though a greater effect of NO\textsubscript{2} (6\%) than PM\textsubscript{2.5} (3\%) was found on total mortality when the broader range of NO\textsubscript{2} concentrations over PM\textsubscript{2.5} concentrations were taken into account. The US Environmental Protection Agency\textsuperscript{57} found that there was consistent evidence in single-city studies in diverse locations but inconsistent evidence among other large cohorts of multiple US locations.

7.5.8. A meta-analysis of available long term studies on NO\textsubscript{2} data by Faustini et al\textsuperscript{56} concluded that the magnitude of the effect of long-term exposure to NO\textsubscript{2} on mortality is at least as important as that of PM\textsubscript{2.5}.

**NOISE: EVIDENCE**

7.5.9. The health impacts of environmental noise are widely acknowledged. A number of reviews of impacts have been published (for example, WHO 2011\textsuperscript{58}) which highlight potential impacts on cardio-vascular disease, cognitive impairment and sleep disturbance and annoyance.

7.5.10. WHO consider the health burden of environmental noise in terms of Disability-Adjusted Life Years (DALYs). One DALY can be thought of as one lost year of “healthy” life. The sum of these DALYs across the population, or the burden of disease, can be thought of as a measurement of the gap between current health status and an ideal health situation where the entire population lives to an advanced age, free of disease and disability.

7.5.11. Therefore any noise impacts resulting in one DALY lost can be thought of as one lost year of ‘healthy life’. DALYs considers life expectancy and the incidence of disease, weighted by the severity of the disease (from zero to 1, where 0 is perfect health and 1 is year of life lost).

7.5.12. Years Lost due to Disability (YLD) are calculated by multiplying the incident cases by duration and disability weight for the condition. The assessment of health effects is based on the existing monetisation analysis\textsuperscript{59}, which includes an assumed range of values for the “disability weighting”\textsuperscript{60} for annoyance, sleep disturbance and AMI effects, reflecting the expected uncertainty with regards to population health outcomes. The disability weighting values used for sleep disturbance were 0.04 (low), 0.07 (mid) and 0.1 (high). The weightings applied for annoyance were 0.01 (low), 0.02 (mid) and 0.12 (high). The weighting used for AMI was 0.405.

7.5.13. WHO estimate that, in EU Member States and other western European countries, DALYs lost are 61,000 years for ischaemic heart disease, 45,000 years for cognitive impairment of children, 903,000 years for sleep disturbance and 654,000 years for annoyance. Swift\textsuperscript{61} provided a review of impacts in the vicinity of airports, focussing on sleep disturbance and stress as pathways leading to eventual cardiovascular outcomes and the potential mis-attribution of certain conditions, e.g. obesity and diabetes, as confounding factors whereas these conditions themselves may have resulted from sleep disturbance.

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\textsuperscript{55} COMEAP/2014/06 Working paper: Evidence for the effects of NO\textsubscript{2} on health Visit https://www.gov.uk/government/groups/committee-on-the-medical-effects-of-air-pollutants-comeap and click on COMEAP discussion papers [Accessed Jan 2018]


\textsuperscript{58} WHO, 2011. Burden of disease from environmental noise: Quantification of healthy life years lost in Europe. [online]


\textsuperscript{61} A Review of the Literature Related to Potential Health Effects of Aircraft Noise, Hales Swift, Purdue University, 2010.
7.5.14. The range of potential impacts is described in more detail below and with reference to specific studies.

**Noise Exposure and Children**

7.5.15. Children are vulnerable to a range of health outcomes associated with environmental noise, including road traffic noise. This includes demonstrating annoyance responses to noise as well as stress along with increased levels of adrenaline and noradrenaline. Though noise does not cause more serious mental health problems, there is growing evidence for an association with increased hyperactivity symptoms. Increased levels of noise has been associated with changes in cardiovascular functioning, as well as an effect on low birth weight. Clear evidence exists on the links between the effect of school noise exposure on children’s cognitive skills such as reading and memory, as well as test scores.

**Psychological Health**

7.5.16. Long term noise exposure is believed to have an influence on psychological health, although, with the exception of annoyance, there is not as strong a link as for other health outcomes.

**Cardiovascular Health**

7.5.17. Studies from adults suggest that repeated elevation of blood pressure in relation to noise exposure might have pathological effects on health in the long term.

**Neighbourhood Amenity Evidence**

7.5.18. A review of literature has shown that leisure and amenity can contribute to physical, social, emotional and cognitive health through prevention, coping (adjustment, remediation, diversion), and transcendence.

7.5.19. The health benefits of local of local amenities and leisure facilities can go beyond those gained from physical exercise and extend to social contact. Evidence suggests that access to leisure facilities and amenities can determine levels of physical activity and reduce the risks of obesity.

7.5.20. The reopening of a community swimming pool was reported as having positive health benefits more closely linked to the facilitation of social contact, along with a supervised facility for young children, with few residents reporting regular use of the pool for physical activity. Use of the pool facility for social contact was directly linked to reports of relief of stress and isolation, and improved mental health.

7.5.21. Both quantitative and qualitative benefits can be gained from the provision of public realm spaces for walking and cycling provides, as they promote healthy living and preventing illnesses. The Marmot review of England’s health inequalities proposed that strategies for reducing health inequalities should be effective and evidence-based. The review sets out the objective to ‘create and develop healthy and sustainable places and communities’, which recognise the role of green infrastructure in improving mental and physical health through access and opportunity for outdoor exercise.

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71 Caldwell, L.L., 2005. Leisure and health: Why is leisure therapeutic?
75 DTLR, 2002, Green Spaces, Better Places. Final report of the Urban Green Spaces Taskforce
76 Marmot, 2010, Fair Society, Healthy Lives—the Marmot Review
Improvements to neighbourhood amenity can have a direct beneficial impact upon mental health, with older adults, of high mobility, living in low amenity and moderate amenity neighbourhoods were more likely to have symptoms of depression compared to people living in high neighbourhood amenity.77

7.5.22. A report by the Cabinet Office, ‘Wellbeing and Civil Society’ stated that “Volunteering is vital to charities and civil society, helps to strengthen local communities, and improves the wellbeing of individuals who participate.”78

**AIR QUALITY BASELINE**

7.5.23. Air pollution in Cambridgeshire impacts local health; in 2010 there were 257 deaths attributable to air pollution, and over 5% of the regional population’s mortality is attributed to air pollution.79

Table 9 - Trend in fraction of all-cause adult mortality attributable to anthropogenic particulate air pollution (measured as fine particulate matter, PM$_{2.5}$)

<table>
<thead>
<tr>
<th>District</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Cambridges</td>
<td>-</td>
<td>5.4%</td>
<td>5.3%</td>
</tr>
<tr>
<td>Cambridges</td>
<td>5.5%</td>
<td>5.4%</td>
<td>5.2%</td>
</tr>
<tr>
<td>England</td>
<td>5.6%</td>
<td>5.4%</td>
<td>5.1%</td>
</tr>
</tbody>
</table>

Source: PHOF, Fingertips, PHE

7.5.24. Public Health England used the above fractions in 2010 to estimate the number of deaths in people aged 25 years and over where air pollution could have been an attributable factor.

Table 10 - Estimating local mortality burdens associated with particulate air pollution, 2010

<table>
<thead>
<tr>
<th>District</th>
<th>Mean anthropogenic PM2.5 ($\mu$g/m$^3$)</th>
<th>Attributable Fraction (%)</th>
<th>Attributable deaths aged 25+</th>
<th>Associated life-years lost</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Cambridges</td>
<td>9.5</td>
<td>5.4</td>
<td>57</td>
<td>611</td>
</tr>
<tr>
<td>Cambridges</td>
<td>9.6</td>
<td>5.5</td>
<td>257</td>
<td>2,762</td>
</tr>
<tr>
<td>England</td>
<td>9.9</td>
<td>5.6</td>
<td>25,002</td>
<td>264,749</td>
</tr>
</tbody>
</table>

Source: PHE

7.5.25. The recorded prevalence of asthma is statistically significantly higher than the national average among patients of GPs in South Cambridgeshire at 7.1% compared to the England average of 5.9%. The recorded prevalence of Chronic obstructive pulmonary disease is statistically significantly better at 1.3% compared to the England average of 1.9%. There are nine GPs in South Cambridgeshire with statistically significantly higher than national average rates of recorded asthma.80

7.5.26. Concentrations of NO$_2$ and PM$_{10}$ monitored between 2014 to 2016 at sites deemed representative of the proposed development by both SCDC and Defra have been recorded as being well below the respective short and long term air quality objectives (Table 12). Baseline air quality (Table 13) at the proposed development was therefore considered to be good.

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77 Gillespie, S., LeVasseur, M.T., Michael, Y.L., 'Neighbourhood Amenities and Depressive Symptoms in Urban-Dwelling Older Adults.' Journal of Urban Design and Mental Health 2017;2:4
Table 11 Air Quality Objectives

<table>
<thead>
<tr>
<th>Air Quality Objective</th>
<th>Pollutant</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective Period</td>
<td>NO$_2$/μg/m$^3$</td>
<td>PM$_{10}$/μg/m$^3$</td>
<td></td>
</tr>
<tr>
<td>Annual Mean</td>
<td>40</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>24 hourly Mean</td>
<td>N/A</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>1 hourly Mean</td>
<td>200</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Table 12 Summary of Local Air Quality (2014 to 2016)

<table>
<thead>
<tr>
<th>Sample Site</th>
<th>Pollutant</th>
<th>Year</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2014</td>
<td>2015</td>
<td>2016</td>
</tr>
<tr>
<td>Orchard Park Primary School (7.5km SW from site)</td>
<td>PM$_{10}$</td>
<td>22 μg/m$^3$</td>
<td>16 μg/m$^3$</td>
<td>16 μg/m$^3$</td>
</tr>
<tr>
<td>3 Garner Close, Milton (4.3km SW from the site)</td>
<td>NO$_2$</td>
<td>17.3 μg/m$^3$</td>
<td>16.4 μg/m$^3$</td>
<td>17.8 μg/m$^3$</td>
</tr>
<tr>
<td>1 Brook Close, km Histon (7km SW from the site)</td>
<td>NO$_2$</td>
<td>19.7 μg/m$^3$</td>
<td>17.7 μg/m$^3$</td>
<td>19.2 μg/m$^3$</td>
</tr>
</tbody>
</table>

Source: South Cambridgeshire District Council 2017 Annual Status Report.

NOISE BASELINE

7.5.27. Noise baseline measurements undertaken as part of this planning application during both November and December 2017$^{81}$ indicated that average noise levels (L$_{Aeq}$ (15mins)) at Capper Road were observed as between 44 dB during the hours 07:00hr to 23:00hr and as 39 dB between the hours 23:00hr to 07:00hr. This compares to the WHO guideline value where between 30 to 40 dB a number of effects on sleep are observed from this range, including body movements, awakening, self-reported sleep disturbance, arousals. The intensity of the effect depends on the nature of the source and the number of events. Vulnerable groups (for example children, the chronically ill and the elderly) are more susceptible. However, even in the worst cases the effects seem modest. WHO Guidelines state that between 40 to 55 dB adverse health effects are observed among the exposed population. Many people have to adapt their lives to cope with the noise at night$^{82}$.

NEIGHBOURHOOD AMENITY BASELINE

7.5.28. Neighbourhood amenities available in Waterbeach include the existing railway station, a range of sports and community facilities. Several established clubs and activities, including Guide and Scout groups, Mother Unions. Two Village halls allow for community functions to operate throughout the week, as well as use of the primary school hall. There are several established outdoor amenities areas, including tennis courts, a skatepark and football pitches. Some of these are protected as Protected Village Amenity Areas, where land is retained which is of importance to the character, amenity and/or functioning of the village as a whole.

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$^{82}$ Night Noise Guidelines for Europe. WHO, 2009
ASSESSMENT

Air Quality during Construction

7.5.29. Emissions are likely to be generated by construction vehicles and plant during the construction phase of the new station. It has been predicted that the additional emissions attributable to construction activities of the new station site are unlikely to have a measurably adverse impact upon sensitive receptors at residential dwellings. This is in part due to the good existing air quality baseline in Waterbeach, and in part due to the large distance (160 metres) between the closest sensitive receptor and the station, as well as the low estimated number of outward construction HDV’s (50) movements a day. Air quality impacts during construction has been predicted to be neutral for all groups.

Air Quality during Operation

7.5.30. Vehicles accessing the existing station from the west and its car park are currently required to travel along Chapel Street, Station Road, the High Street, Car Dyke Road and past the primary school. Some of these routes are narrow in part, exposing residents and primary school children along these routes and to poor air quality during peak commuter periods as a result of the effects of poor dispersion of air pollutants in that area. This impact would be compounded at times by the level crossing at the existing station, creating short-term periods of congestion.

7.5.31. Due to the anticipated increase in the population locally, station related traffic flows will not change, the existing Waterbeach Station is predicted to experience an increase in the number of passengers using it over time. Vehicle emissions in the area of Waterbeach surrounding the existing station, including Station Road, Car Dyke Road, the High Street and outside the primary school are likely, in the medium term, to increase with the increase use of the existing station.

7.5.32. The proposed development will introduce a car park at the new station, this will permit a greater number of passengers to park at the new Waterbeach station in comparison to the existing Waterbeach station. It is highly likely that a large number of vehicles using the new station car park are already using the existing station car park. Therefore not all of the vehicles using the new station car park will be new trips. However the route vehicles will use to access the station car park involves towards passing along Bannold Road and Cody Road, will introduce additional vehicle trips along these routes, and therefore additional vehicle emissions in this area of Waterbeach. However, there will be a subsequent reduction in station related vehicle flows in the area of Waterbeach surrounding the existing station, including Station Road, Car Dyke Road and the High Street with the relocation of the station. This will result in reduction in vehicle emissions in the area surrounding the existing Waterbeach Station, improving air quality in this area of Waterbeach, and for the residents of Station Road, Car Dyke Road, the High Street and primary school children reducing exposure to air pollutants.

7.5.33. The proposed development will shift vehicle emissions away from the Town centre and reduce the current exposure of school children to vehicle emissions. This has been predicted to be neutral for all groups, with exception to children and young people as well as people with existing health conditions who have been predicted to experience a long-term permanent minor beneficial health impact of medium (children and young people) and low (people with existing health conditions) intensity as a resulting from improvements in air quality.

Construction Noise

7.5.34. Noise is likely to be generated by construction activities, construction plant and construction vehicles at the new station site. The effect of any noise generated through construction activity at the new station site is unlikely to have an impact upon noise sensitive receptors such as residential dwellings, during daytime activities due to the large distance (160 metres) between the closest dwelling and the station. However nighttime construction activities could have an adverse health impact upon noise sensitive receptors, particularly those on Bannold Drove, Kirby Road and Capper Road, which could represent a short-term minor adverse temporary health impact of low intensity upon people with existing health conditions. Otherwise noise impacts during construction has been assessed as being neutral for all other groups.

7.5.35. However, the location and footprint of the wider construction site, if positioned to the west of the proposed new railway station could result in noise impacts in close proximity to existing noise sensitive receptors.

Operational Noise

7.5.36. The new station will attract traffic into the area including passenger cars, taxis and buses. These additional vehicle movements will be introduced to the area surrounding the new, representing a new source of noise.
into the area surrounding the station. The proposed new road to the north of Capper Road will introduce a noise source approximately 35 metres from the noise sensitive receptors at residential dwellings along Capper Road. Though the magnitude of traffic flowing along the road is unlikely to be significant, its presence could have a permanent long-term minor adverse impact upon the residential dwellings along Capper Road, due to the very low noise baseline at present. Introduction of noise mitigation in the form of an earth bund running along the access road would reduce this health impact to equivalent to neutral for all groups.

Noise from the Station Car Park

7.5.37. Baseline noise survey undertaken as part of this planning application during both November and December 2017. In the absence of a noise impact assessment, noise generated from use of the station car park will be typically associated with its use at peak time during the morning and evening commuting periods, routine bus and shuttle bus drop-offs, and continuous taxis journeys to and from the station throughout the day.

7.5.38. The quantity of vehicle trips to the station by car are predicted to increase over time as the Waterbeach Masterplan develops begin to emerge. As the population of Waterbeach Town is predicted to significantly increase, the number of passengers using the station will also increase.

7.5.39. It has been estimated that the noise from the new station car park will be of marginal significance at receptors closest to the car park, and of neutral at all other receptors less.

Noise from the Station PA System

7.5.40. Daytime noise from the new station PA system have been estimated as of negligible significance due to the distance between noise sensitive residential receptors and the station platforms. Use of the new station PA system is to be excluded operation at night. Therefore, health impacts due to noise arising from use of the new station PA system has been assessed as neutral to all groups.

Railway Noise

7.5.41. The new railway station will enable additional rail services to stop at Waterbeach Station, which they currently are unable to do due to the insufficient length of the existing Waterbeach station platform. As these services are currently using the rail line, and already represent part of the existing noise baseline, the impact from railway noise has been predicted to be neutral.

Neighbourhood Amenity

7.5.42. Relocation of the station and development of its access have been assessed as being of Long-term moderate benefit permanent in nature and of medium intensity to local amenities, as it will contribute positively to neighbourhhood amenity through improved active travel options, increasing the local provision of good quality walking and cycling routes, thereby encouraging opportunities for positive social interaction.

7.5.43. Relocation of the station and development will result in improvements to neighbourhood amenity, both in the area immediately surrounding the existing station, though a reduction in traffic and its associated collision risk, and with the introduction of a high quality built facility at the new station location.

7.5.44. Planning consultation responses from a limited number of respondents have registered the relocation of the existing station as a loss of amenity to the Waterbeach Village. Though at face value this could be interpreted as a permanent indirect minor adverse impact upon health, the fact that the station is to be relocated, rather than removed and off-set by potentially improved social interaction, reduces this impact to a short-term minor adverse impact upon health, which is temporary and of low intensity, due to loss of amenity impacting on a limited number of rail users living locally to the existing station. For older people and those who are either socially excluded or within an isolated group, this could represent a short-term moderate adverse health impact temporary in nature and again of low intensity. Potentially both of these impacts would be mitigated in-part by the provision of a shuttle bus, though this would require a period of time to become the established norm before the impact could be considered as neutral for all groups.

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83 https://scambs.jdi-consult.net/localplan/viewreps.php?docelemid=40595&docid=224
7.6 CRIME AND PUBLIC SAFETY

EVIDENCE

7.6.1. There is a strong link between fear of crime and poorer mental health. The research shows that fear of crime is associated with decreased physical functioning and a lower quality of life, whilst people with a strong fear of crime are almost twice as likely to show symptoms of depression. In general people with a fear of crime exercise less, see friends less and participate in fewer social activities compared with less fearful individuals. People who are potentially vulnerable to being a victim of crime due to their existing health status or age are not necessarily more frightened, but being frightened of crime is in itself a contributor to poor mental health and quality of life, which also impacts on physical health. In addition there is evidence to suggest that those with poor health and a high fear of crime are more likely to suffer repeat victimisation.

7.6.2. Lower socioeconomic status is also a factor in vulnerability, and can increase the risk of being a victim of crime – impacting on the health of the victim. Some people within the more deprived areas are more vulnerable to repeat offending and this increases their fear of crime and has a negative impact on their health. Professor John Eck refers to these people as sitting ducks and effective community safety work should focus on supporting these individuals and targeting offenders.

7.6.3. British roads are now among the safest in the world, but cyclists and pedestrians remain particularly vulnerable road users. Aside from the effect that casualties have on individuals and their families, pedestrian and cyclist casualties are a significant burden on local health services. Furthermore, safety concerns are often cited as a reason why people do not cycle or, for example, allow children to walk to school meaning that they are missing the opportunity to do more physical activity and improve their health.

7.6.4. Whether children actively commute to school may be determined by parents’ perception of safety of the mode of transport, lack of time in the morning and social factors such as no other children to walk with.

BASELINE

7.6.5. Cambridgeshire has five Community Safety Partnerships (CSP), one in each district. Each CSP has a statutory duty to reduce crime and disorder in its area. The district council plays an active role in the district’s CSP, which also includes representatives from the Police, County Council, PCT and Probation.

7.6.6. The average crime rate in South Cambridgeshire is lower than that for the Cambridgeshire force area in the year ending June 2017. South Cambridgeshire had 44.02 crimes per thousand residents over this twelve month period. This crime rate is about the same as the average crime rate across similar areas. This crime rate is an increase compared with the corresponding quarter in 2016, which has also been reported nationally.

7.6.7. The crime rate over this twelve month period, October 2016 to September 2017 (Figure 10) per thousand residents in the Waterbeach Ward was 53.4 per thousand residents. The crime rate calculated for Waterbeach Ward is lower than that for Cambridgeshire, though higher than that for South Cambridgeshire.

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84 http://www.ucl.ac.uk/news/news-articles/0709/09072801 Dr Mai Stafford, UCL Epidemiology & Public Health
86 Cambridgeshire County Council, 2015. Transport and Health JSNA – Active Travel. [online] Accessed 15/01/2018
93 Calculated using 2011 Census Populations and October 2016 to September 2017 crime rates.
This information is summarised in the pie charts below, presenting the proportion of the various types of crime recorded in the Waterbeach Ward and in Cambridgeshire.

**Waterbeach**

![Waterbeach Crime Pie Chart]

**Figure 10 Crime plus Anti-Social Behaviour records breakdown for Waterbeach Ward between Oct 2016 and Sept 2017.**

**Cambridgeshire**

![Cambridgeshire Crime Pie Chart]

**Figure 11 Crime plus Anti-Social Behaviour records breakdown for Cambridgeshire between Oct 2016 and Sept 2017.**

7.6.8. The current Waterbeach Railway Station poses risks to public safety for a variety of reasons. All passengers from the Waterbeach direction, who board services towards London, and those who alight services from Ely / Kings Lynn, must either walk across the Station Road automated half barriers (AHB) level crossing, or drive

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across, parking in the station car park. In addition, all passengers alighting services from Cambridge / London who have parked in the car park must walk across the AHB level crossing, and those who have parked in the car park and are boarding services towards Ely / Kings Lynn must walk across the AHB level crossing.

7.6.9. A survey of the level crossing use was undertaken for the period Saturday 8 July 2017 to Sunday 17 July 2017. The data is attached at Appendix H and the average weekday (0600hrs – 0000hrs, Tuesday – Thursday) use is summarised in Table 14 below.

Table 13 - Station Road Level Crossing Average Weekday Use (0600hrs-0000hrs), July 2017

<table>
<thead>
<tr>
<th>Mode of Travel on Average Weekday</th>
<th>Eastbound Travel</th>
<th>Westbound Travel</th>
<th>Northbound Travel</th>
<th>Southbound Travel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrians</td>
<td>609</td>
<td>239</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Cyclists</td>
<td>147</td>
<td>137</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Vehicles</td>
<td>2,703</td>
<td>2,638</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Trains</td>
<td>n/a</td>
<td>n/a</td>
<td>86</td>
<td>83</td>
</tr>
</tbody>
</table>

Source: Waterbeach Station Relocation Transport Statement and Travel Plan Framework, January 2018

7.6.10. Network Rail undertakes a passive level crossing risk assessment of every level crossing across their network. The risk is partly a function of the number of users, along with the layout and barrier type. Network Rail use the All Level Crossing Risk Model (ALCRM) which provides an estimate of both the individual risk and collective risk at a level crossing.

- Individual risk is the annualised probability of a fatality to a regular user with a ranking from A (the highest risk) to L (the lowest risk).
- Collective risk is the total risk for the crossing and includes the risk to users (pedestrians and vehicles), train staff and passengers, with a ranking of risk from 1 (the highest risk) to 12 (lowest risk).

7.6.11. The latest ALCRM assessment for the Station Road Waterbeach AHB level crossing in October 2017 is C1 which is the highest level of risk for this type of crossing.

7.6.12. Network Rail’s Station Capacity team have recently reviewed Waterbeach station, including the level crossing, in their ‘Initial Station Capacity Assessment’ report (dated September 2017). On the Station Road AHB level crossing, the NR report advises that:

“The type of level crossing and protection level to pedestrians from both road and rail vehicles are no longer appropriate to the increased demand currently generated at the station. In particular, a significant proportion of PM peak alighting passengers from the “down” [northbound] platform must cross the railway and road to reach the car park and there is insufficient provision of footpaths and crossing locations to facilitate this safely.”

7.6.13. Pedestrian and cycle routes to the station are limited, with very limited secure parking offered for cyclists. There have been several incidents and near misses at this crossing in the last few years. According to 9 day user surveys carried out in the summer 2017, the level crossing is currently used by approximately 1032 pedestrians and cyclists per day, and about 5364 vehicles per day (weekday average).

7.6.14. Safety concerns related to increase road traffic were raised during the public consultation events, specifically around Cody Road and pedestrians accessing the Day Nursery on Capper Road, as well mentioning children walking to the local Primary School on Way Lane off of Bannold Road.

ASSESSMENT

7.6.15. The new Railway Station will remove the risk to health that is currently posed by the AHB level crossing, therefore having a permanent beneficial health outcome. The relocation of the station is likely to reduce the pedestrian flow over the level crossing by over 95% and the vehicle flow by about 5%. The proposals should therefore significantly reduce the risk to vulnerable users at the level crossing.

7.6.16. The remoteness of the new and potentially low flow levels of member of the public passing the station may cause some people to have concerns over their personal security. This is likely to be minimised through good lighting and station design, including proposed staffing of the station, which is intended to deter crime or anti-social behaviour.
7.6.17. Bannold Drove and the new link road will provide segregated routes to the railways station for pedestrians and cyclists from other vehicle users. These routes are to be well lit during the evening to ensure good visibility throughout the day, and will include segregated cyclists provision, reducing risk of collision and improving public safety.

7.6.18. The proposed development has been assessed as representing a long-term permanent minor beneficial health impact of major intensity by reducing crime and improving public safety. This could be enhanced through improved street lighting along the remote pedestrian and cyclists’ routes to a long-term permanent moderately beneficial health impact of major intensity by reducing crime and improving public safety.
## SUMMARY OF HEALTH IMPACTS

### 7.7.1
A summary of health impacts have been brought together in Table 15 below.

### Table 14 - Summary of Waterbeach Railway Station Health Impacts

<table>
<thead>
<tr>
<th>Health Determinant</th>
<th>Children &amp; Young People</th>
<th>Older People</th>
<th>People with Disabilities</th>
<th>People with existing health conditions</th>
<th>Unemployed and low income groups</th>
<th>Socially excluded or isolated groups</th>
<th>Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to Transport</td>
<td>L +++ P</td>
<td>L +++ P</td>
<td>L +++ P</td>
<td>L +++ P</td>
<td>L +++ P</td>
<td>L +++ P</td>
<td>The intensity of the beneficial health outcome is high, due to the potential opportunities provide to the larger future Waterbeach population.</td>
</tr>
<tr>
<td>Exercise and physical activity</td>
<td>L ++ P</td>
<td>L ++ P</td>
<td>L ++ P</td>
<td>S ++</td>
<td>S ++</td>
<td>S ++</td>
<td>Until the increase in the Waterbeach population, impacts will be temporary medium term minor beneficial.</td>
</tr>
<tr>
<td>Social cohesion / social capital</td>
<td>S - T</td>
<td>S - T</td>
<td>L +++ P</td>
<td>L +++ P</td>
<td>S - T</td>
<td>S - T</td>
<td>Shuttle bus provision could reduce social isolation to short-term residual temporary minor adverse health impact on the elderly, unemployed and socially excluded or isolated groups.</td>
</tr>
<tr>
<td>Construction Air Quality</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Impact on people with existing health conditions medium may be reduced to a long-term permanent beneficial health impact of low intensity, and long-term permanent moderate beneficial health impact for Positioning of the construction compound could reduce construction noise impacts.</td>
</tr>
<tr>
<td>Operational Air Quality</td>
<td>P ++ L</td>
<td>Neutral</td>
<td>Neutral</td>
<td>P + L</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Use of an earth bund could mitigate the operational noise to minor/neutral.</td>
</tr>
<tr>
<td>Construction Noise</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>S - T</td>
<td>Neutral</td>
<td>Neutral</td>
<td></td>
</tr>
<tr>
<td>Operational Noise</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td></td>
</tr>
<tr>
<td>Neighbourhood amenity</td>
<td>L ++ P</td>
<td>L ++ P</td>
<td>L ++ P</td>
<td>L ++ P</td>
<td>L ++ P</td>
<td>L ++ P</td>
<td>Provision of additional good quality amenities, cycling/walking routes, reduction in congestion and collision risk.</td>
</tr>
<tr>
<td></td>
<td>S -</td>
<td>S -</td>
<td>S -</td>
<td>S -</td>
<td>S -</td>
<td>S -</td>
<td>Short-term loss of amenity for a limited number of rail users. Moderately adverse for older</td>
</tr>
</tbody>
</table>
people and those who are either socially excluded or within an isolated group.

<table>
<thead>
<tr>
<th></th>
<th>T</th>
<th>T</th>
<th>T</th>
<th>T</th>
<th>T</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
<tr>
<td>Crime and Public Safety</td>
<td>L+++</td>
<td>L+++</td>
<td>L+++</td>
<td>L+++</td>
<td>L+++</td>
<td>L+++</td>
</tr>
<tr>
<td></td>
<td>T</td>
<td>T</td>
<td>T</td>
<td>T</td>
<td>T</td>
<td>T</td>
</tr>
</tbody>
</table>

In the medium term once shuttle bus has become an established as a means of accessing the new station.

Improved street lighting could improve this health impact to a represent a long-term permanent moderately beneficial health impact by reducing crime and improving public safety.
8 CONCLUSIONS AND RECOMMENDATIONS

8.1 SUMMARY

8.1.1. A rapid assessment of the health impact of the proposed new Waterbeach Railway Station has been undertaken. Some of the developments key design principles relevant to this HIA were:

- Relocating the existing Waterbeach Station and the construction of a new station and associated transport access.
- Northbound and southbound platforms both allowing 8-car trains to stop;
- An access for all footbridge with lifts and staircases to provide pedestrian connection between the northbound and southbound platforms;
- Automatic ticket machines;
- Covered areas on platforms for waiting passengers, including shelters and an extended canopy on the southbound platform;
- A secondary footbridge over the railway line to provide emergency escape from the southbound platform and convenient access for passengers approaching from the existing village;
- A total of 200 car parking spaces, 100 bicycle parking spaces, 10 drop off/pick up spaces, two bus shelters, and two taxi drop off/pick up bays.
- Vehicle access to the proposed relocated station a new link road connecting with Cody Road.
- The link road will have a 2m wide footway provided along the north side, with street lighting, and will be designed for a 20mph speed limit.

8.1.2. Key health issues identified were direct and indirect effects of the development upon the Waterbeach population, including access to transport; exercise and physical activity; social cohesion; air quality, noise and neighbourhood amenity as well as crime and public safety.

8.1.3. An assessment of health, population, environment and deprivation was undertaken, focusing on the health outcomes upon selected vulnerable groups.

8.2 LIMITATIONS

8.2.1. The level of detail contained within the proposed development plan is commensurate with its planning detail, which excludes any references to the Waterbeach New Town Masterplan. Therefore this assessment has been limited to consider the impacts of the proposed development based upon available project information, as an outcome of review of baseline data and supporting information has been limited to the Wards level or above.

8.3 CONCLUSIONS

SIGNIFICANT HEALTH IMPACTS OF THE PROPOSED DEVELOPMENT

8.3.1. The single greatest potential health outcome of the proposed development has been assessed as the indirect health benefits from improved access to transport and its associated indirect health benefits from the employment and training opportunities. These benefits have been assessed as being of permanent moderate benefit of major intensity for all groups.

8.3.2. In addition, the proposed development has been assessed as providing indirect health benefits as a consequence of reducing crime and public safety through safe urban design.

8.3.3. In contrast to the beneficial impacts above, the development has been assessed as contributing to adverse health outcomes as a consequence of reduced social cohesion as well as reduced neighbourhood amenity through the relocation of the existing station. Minor short-term adverse health outcome was predicted due to construction noise, though these are associated with night-time works, which will be limited in both duration and frequency.

8.4 RECOMMENDATIONS

8.4.1. A set of recommendations were identified for a number of health determinants. Should these be put in place additional health benefits could be harnessed from the proposed development. These recommendations are summarised in Table 16.
8.4.2. Through adopting ‘Designing out Crime’ sustainable development principles the proposed development will be able to further reduce the opportunities for anti-social behaviour and risk of crime. Creating separate segregated cycling routes and footpaths, allows free movement of cyclist and pedestrian reducing collision risk.

8.4.3. The provision of cycle stands within the public realm design of proposed scheme development, as well as prominent segregated cycle paths and enhanced pedestrian access would all result in a direct beneficial health outcome upon health inequality for the whole Waterbeach population.

8.4.4. Increased use of public transport or promotion of active travel methods could indirectly promote increased levels of physical activities amongst public transport users. Health benefits gained from the reduction of traffic congestion via modal shift from motor vehicles to active travel or public transport would be compounded with the health benefits arising from the increase in physical activity associated with regular use of public transport.

8.4.5. Night-time noise generated during the construction period could contribute to increased stress levels and marginally impacting upon mental health. Mitigation of the above impacts could be brought about through positioning the construction site to minimise noise impacts upon noise receptors.

Table 15 - Recommendations arising from the Health Impact Assessment

<table>
<thead>
<tr>
<th>Issue</th>
<th>Health Outcome</th>
<th>Recommendation</th>
<th>Promoter</th>
</tr>
</thead>
</table>
| Reducing Crime and Anti-Social behaviour as part of the Proposed Development design | Reduction in risk of physical harm  
Reduction in stress, mental health impacts | Adopting sustainable development principles, e.g. pedestrian friendly street lighting ensuring ‘critical mass’ of people are using cycle and walking routes, reduce the opportunities for anti-social behaviour and risk of crime | Developer |
| Improving Public Safety as part of the Proposed Development          | Reduction in risk of physical harm  
Reduction in stress, mental health impacts | Prioritise cyclist and pedestrian crossing at Bannold Drove / new station access road towards cyclists using Bannold Drove, to encourage safe route for cyclists. | Developer |
| Promoting Active Travel as part of the proposed development          | Reduction in heart disease  
Reduction Obesity  
Improvement in mental well-being  
Reduction in stress | Plans to extend secure cycle stands outside of the development and within the public realm, prominent cycle paths, and pedestrian priority over road traffic within the proposed development. | Developer / Local Authority/ Transport Authority |
| Access to Travel                                                      | Indirect health outcomes associated with improved opportunities to employment and training  
Improvement in mental well-being  
Reduction in stress | Prioritise a disability drop-off space immediately adjacent to the station.  
Provide wider drop-off bays for wheel-chair accessibility  
Provision for a shuttle bus to allow for connectivity between the existing | Developer |
Waterbeach village residents and the new station.

<table>
<thead>
<tr>
<th>Construction Noise Impacts</th>
<th>Improvement in childhood development</th>
<th>Improvement in mental well-being</th>
<th>Reduction in stress</th>
<th>Positioning of the Construction compound to minimise noise impacts upon most sensitive receptors.</th>
<th>Developer / Contractor</th>
</tr>
</thead>
</table>
Appendix A

PROPOSED STATION LAYOUT: LINK

ROAD AND BANNOLD DROVE IMPROVEMENTS
Appendix B

WATERBEACH STATION

RELOCATION HIA SCOPING REPORT
# QUALITY CONTROL

<table>
<thead>
<tr>
<th>Issue/revision</th>
<th>First issue</th>
<th>Revision 1</th>
<th>Revision 2</th>
<th>Revision 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>25/01/2018</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepared by</td>
<td>Claire Beard</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signature</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Checked by</td>
<td>Peter Walsh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signature</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Authorised by</td>
<td>Peter Walsh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>Report number</td>
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<tr>
<td>File reference</td>
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</tbody>
</table>
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2 APPROACH TO THE HEALTH IMPACT ASSESSMENT  
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2.2 HEALTH IMPACT AND INEQUALITY  
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1 INTRODUCTION

1.1 INTRODUCTION AND BACKGROUND

1.1.1. WSP has been asked to undertake a Health Impact Assessment (HIA) of the relocation and construction of a new Waterbeach Railway Station (the ‘Proposed Development’) to ensure health, in all its forms, is adequately considered, and these considerations influence the design of the Proposed Development.

1.1.2. The proposed development consists of relocating the existing Waterbeach Station and the construction of a new station and associated transport access.

1.1.3. The proposed site of the relocated station is immediately east of Bannold Drove and north of Bannold Road in the northeast of Waterbeach village. It is about 1 mile travelling distance northwards along the Cambridge – Ely railway line from the existing station. The existing and proposed relocated station locations are indicated on Figure 2.

1.1.4. The proposed site for the new station and associated link road is currently agricultural fields either side of the railway line.

1.1.5. Vehicular access to the proposed relocated station will be via a new link road connecting with Cody Road. The link road will have a 2m wide footway provided along the north side, street lighting, and will be designed for a 20mph speed limit.

1.1.6. Access for walking and cycling is primarily via Bannold Drove, which runs largely parallel to and about 450m east of Cody Road. Bannold Drove is currently a country lane with no street lighting or footway provision. It will be improved as part of the station relocation to provide a multi-user route. Private vehicular use will be for access to adjacent properties and emergency access to the relocated station only.

1.1.7. The new station is expected to become operational in 2021, at which point the existing station will close.

1.1.8. The site lies within the boundaries of South Cambridgeshire District Council (SCDC), in the Waterbeach Ward.

1.1.9. The site is approximately 6km from Cambridge, where there are extensive employment opportunities, primarily close to the newly opened Cambridge North rail station, and within Cambridge city centre.

1.1.10. The existing settlement of Waterbeach is a relatively large village with a Parish population of approx. 5,000 people according to the 2011 Census. It contains an established range of local facilities together with a rail station. Strategic employment already sited in the immediate vicinity comprises the Cambridge Research Park on the A10 with local employment at the Waterbeach Industrial Estate.

1.1.11. SCDC’s Proposed Submission Local Plan (July 2013) allocates a new settlement known as Waterbeach New Town under Policy SS/5 on the former Waterbeach Barracks site and land to the east and north. The site allocation area is identified on the Local Plan Policies Proposals Map Inset H. Policy SS/5 requires a relocated Waterbeach rail station to serve the existing village and the new settlement, amongst other transport improvements.

1.1.12. This document presents the Scoping of the HIA.

1.2 PROPOSED DEVELOPMENT

1.2.1. The Proposed Development includes the following key components and uses:

1.2.2. The relocated station would have the following facilities:

- Northbound and southbound platforms both allowing 8-car trains to stop;
- An access for all footbridge with lifts and staircases to provide pedestrian connection between the northbound and southbound platforms;
- Automatic ticket machines;
- Covered areas on platforms for waiting passengers, including shelters and an extended canopy on the southbound platform;
- A secondary footbridge over the railway line to provide emergency escape from the southbound platform and convenient access for passengers approaching from the existing village;
- A total of 200 car parking spaces, 100 bicycle parking spaces, 10 drop off/pick up spaces, two bus shelters, and two taxi drop off/pick up bays.
1.3 HIA SCOPING REPORT

1.3.1. The purpose of this scoping step is to define the area of influence for the HIA, identify the potentially affected communities, the key health issues and to develop the strategy to undertake the required data collection.

1.3.2. The report is structured as follows:

- Section 1 Introduction;
- Section 2 Approach to the HIA;
- Section 3 Scoping (including a summary of the socio-economic and community baseline conditions); and
- Section 4 Summary of health issues, impacts and the scope.
2 APPROACH TO THE HEALTH IMPACT ASSESSMENT

2.1 INTRODUCTION TO HIA

2.1.1. This section sets out the generic methodology behind a HIA and scoping considerations for this HIA.

2.1.2. South Cambridgeshire District Council (SCDC) adopted a Supplementary Planning Document (SPD) on HIA in March 2011 which outlines the approach and scope expected in HIAs presented in support of a planning application.

2.1.3. The document sets out the expected aims and objectives of a HIA, which are to:

- Appraise the potential positive and negative health and well-being impacts of the Proposed Development on planned new communities and the adjacent existing communities in the development area;
- Highlight any potential differential distribution effects of health impacts among groups within the population by asking ‘who is affected?’ for the impacts identified; and
- Suggest actions / mitigations that aim to minimise any potential negative health impacts and maximise potential positive health impacts, referencing where possible the most affected vulnerable group(s).

2.2 HEALTH IMPACT AND INEQUALITY

2.2.1. HIA has been defined as:

“...a combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population”.

2.2.2. In this context, ‘health’ is defined by the World Health Organisation as;

“...a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”.

2.2.3. Health determinants are the personal, social, cultural, economic and environmental factors that influence the health of individuals or populations. These include a range of factors such as income, employment, education and social support.

2.2.4. Health Inequality can be defined as the difference in either health status, or the distribution of health determinants, between different population groups. Some health inequalities are unavoidable, others are not so and may well be unjust and unfair.

2.2.5. HIA apply the below model of health and well-being (Figure 1). The Socio-Environmental Model of Well-Being considers that health and well-being are a result of external influences, where an individual or family experiences a combination of adverse external factors which could result in health inequality.

2.2.6. The overall aim of the HIA will be to identify the aspects of the Proposed Development which have the potential to affect people’s health, both directly and indirectly. Some effects may be positive, others could be negative. The HIA will be undertaken in parallel with the Environmental Impact Assessment (EIA), and will include recommendations which will remove or mitigate as far as possible any potential negative impacts on people’s health. It will also identify opportunities to maximise the potential benefits to people’s health.

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2.3 METHODOLOGY

2.3.1. The SCDC adopted SPD on HIA\(^4\) outlines an anticipated approach to the HIA process. The stages are outlined below:

1. Screening, which is deciding whether an HIA is likely to be the best way to ensure health and equity issues are effectively addressed in a given situation.
2. Getting the HIA team together as the HIA needs input from a team of people to provide different perspectives and areas of expertise.
3. Scoping, which decides how to undertake an HIA in a given context.
4. Appraisal or assessment, which identifies and considers a range of evidence for potential impacts on health and equity.
5. Developing recommendations, which means formulating and prioritising specific recommendations that are based on the best available evidence.
6. Make recommendations, as part of the HIA that include recommendations to adjust the development or make other changes that would improve health impacts/consequences.
7. Ongoing monitoring and evaluation, to assess if any of the specific HIA recommendations were implemented as part of the development, and if they contributed to positive effects on health and equity; if not, to review and consider the reasons for this, and how plans might be further adapted.

2.3.2. SCDC’s HIA SPD largely sets out the HIA methodology and approach, and therefore provides a framework around which the HIA can be governed. Therefore requirement of a steering group to be appointed can be avoided. Instead the HIA methodology and scope of the assessment shall be agreed mutually by WSP and the appropriate Planning Officer.

SCREENING

2.3.3. The requirement for a HIA has been recognised by the Project Team, and is justified due to the scale and nature of the Proposed Development, and its probable impacts upon existing residents and access to existing facilities.

2.3.4. This screening identified that the most appropriate approach for the Waterbeach Station HIA is a Rapid Non-Participatory HIA. The defining feature of a rapid assessment is that no new health data is collected i.e. no project specific epidemiological studies or health surveys are undertaken.

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2.3.5. The appeal of the application of rapid appraisal techniques to the Proposed Development HIA is the relatively short period of time in which potentially useful outputs can be generated.

2.3.6. This screening identified that baseline data for the HIA of the Proposed Development shall be derived from existing sources such as government departments and local health groups.

2.3.7. Furthermore, the ‘Non-Participatory’ approach to rapid assessment means that instead of a Steering Group, the HIA will be informed by advice and evidence from the relevant Planning Officer and Topic Professionals. Such evidence, which may be quantitative or qualitative, will form the cornerstone of the HIA.

SCOPING

2.3.8. At the scoping stage, the area of influence (geographical scope) for the HIA is identified, along with the timescale(s) over which to predict any impacts. Those population groups potentially affected and the key health issues associated with the impacts of the Proposed Development are identified. A strategy is developed to undertake the required data collection and required consultation. The phasing of the Proposed Development is considered to reflect the potential for predicted health impacts to change over time.

2.3.9. The specific tasks completed included:
   - Determination of methodology and scope of assessment;
   - Initial screening of the health determinants; and
   - High level desk top study of existing health information, gap analysis and literature review.

2.3.10. Prior to assessment, this scope is to be agreed with SCDC.

ASSESSMENT

2.3.11. The purpose of the assessment step is to collate the available baseline data and to collect and analyse the stakeholder evidence.

2.3.12. Potential sources of baseline information against which possible health impacts can be compared include:
   - SCDC
   - Parish Government
   - Local Community, e.g. church bodies
   - Voluntary Organisations
   - Technical Specialists e.g. Air Quality, Transport Planners, Acoustics Specialists, Landscape Architects
   - Social/demographic surveys undertaken within the area immediately adjacent to the Site

2.3.13. Baseline data will be used to establish the demographic, economic, social and health profiles for the population within the geographical scope of the HIA, including any vulnerable groups, and to inform the identification of impacts. This assessment will consider the profile of the likely users of the proposed station and its associated facilities.

RECOMMENDATIONS

2.3.14. The objective of this stage of the HIA methodology is to identify appropriate mitigation measures to minimise the potential negative health and wellbeing impacts of the Proposed Development and to maximise the opportunities for beneficial impacts. Recommendations for significant impacts will be prioritised.

MONITORING AND EVALUATION

2.3.15. Health mitigation measures will be identified and proposed in the recommendations stage of the assessment. Recommendations for monitoring the project related effects on health will also be outlined.

2.3.16. Monitoring and evaluation of the health impacts of the proposed project will be discussed with South Cambridgeshire District Council. Though due to the prolonged construction period of the associated Waterbeach Fen Edge development, a precise monitoring and evaluation plan cannot be determined at this stage.
3 SCOPING

3.1 INTRODUCTION
3.1.1. This scoping exercise has been conducted by WSP using guidance within SCDC SPD. The methodology proposed to be use for the assessment is provided above in Section 2.

3.1.2. The following is considered within this scoping section:
- Geographical scope;
- Timescales and phasing;
- Existing health information;
- Health determinants;
- Population groups; and
- Predicted health impacts.

3.2 GEOGRAPHICAL SCOPE
3.2.1. The potential health impacts of the Proposed Development and any associated construction activities, including haulage routes, are likely to be greatest in the ward of Waterbeach. Whilst the Proposed Development has the potential to impact on the population outside the area directly affected, these impacts will be less than those on the local community. It is, therefore, considered appropriate to focus the geographical scope of the assessment to the Ward within which the Proposed Development is located.

3.2.2. The Wards area of Waterbeach is proposed as the HIA study area. The boundary of these five wards is regards to as the ‘study area’. The ward boundary is identified within Figure 2.

3.3 TIMESCALES AND PHASING
3.3.1. Subject to planning approvals, construction of the Proposed Development is anticipated to commence by 2019 with an estimated completion date of 2021.

Figure 2 – The Development boundary and the geographical scope Waterbeach ward boundary
3.4 CHARACTERISTICS OF THE STUDY AREA

3.4.1. This section summarises the socio-economic and community baseline conditions for the spatial scope of the HIA. The most recent publicly available information has been used to create these profiles.

POPULATION

3.4.2. The population of the wards in the study area, East Cambridgeshire, South Cambridgeshire according to the 2011 Census and, 2016 and 2036 population forecasts are displayed within Table 1.

Table 1 - 2011 Census populations within the study area wards, East Cambridgeshire and South Cambridgeshire, and Population forecasts for 2021 and 2036.5

<table>
<thead>
<tr>
<th>Year</th>
<th>Waterbeach Ward</th>
<th>East Cambridge-shire</th>
<th>South Cambridge-shire</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011 Census</td>
<td>6,030</td>
<td>84,100</td>
<td>149,390</td>
</tr>
<tr>
<td>2021 Forecast</td>
<td>5,860</td>
<td>92,630</td>
<td>169,800</td>
</tr>
<tr>
<td>2036 Forecast</td>
<td>13,530</td>
<td>108,610</td>
<td>200,480</td>
</tr>
</tbody>
</table>

3.4.3. Overall Cambridgeshire’s population profile by sex and age is similar to England’s but a lower proportion of people are from minority ethnic groups.6 The population of Cambridgeshire was 624,180 according to the 2011 Census7. In 2015, the population was estimated based on forecasts to be 648,310. Cambridgeshire County Council’s has forecast that the 2036 population will rise to 803,200.7

3.4.4. Population data for the study area is presented by age range within in Table 2 below. Waterbeach Ward has a larger demographic group between 25-44, and contrary a smaller demographic group between 45-64 than either the County or national average. Waterbeach also has a smaller percentage of the population within the age range 65+, at 14.5%, when compared to Cambridgeshire (16.1%) and England (16.4%). The 65+ age group makes up a smaller percentage of the overall population in Waterbeach Ward. The other four wards within the study area have a smaller percentage of the population falling within these age ranges than the national average.

3.4.5. This implies that there is possibly a greater percentage of working aged population within Waterbeach then the national average. The South Cambridgeshire District Report8 and the East Cambridgeshire District Report9 state that there is an ageing population in both districts.

Table 2 – Population groups (% of total population) (2011)10 11

<table>
<thead>
<tr>
<th>Age range</th>
<th>Waterbeach Ward</th>
<th>Cambridge-shire</th>
<th>England12</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14</td>
<td>17.4</td>
<td>17.0</td>
<td>17.7</td>
</tr>
<tr>
<td>15-24</td>
<td>13.9</td>
<td>13.4</td>
<td>13.1</td>
</tr>
<tr>
<td>25-44</td>
<td>31.4</td>
<td>27.8</td>
<td>27.4</td>
</tr>
</tbody>
</table>

---

3.4.6. The population change between 2001 – 2011 within Cambridgeshire was 12.4%, with a 14.4% and 14.5% population change within South and East Cambridgeshire respectively\(^{13}\). This percentage change is greater than the overall England and Wales population change between these periods (7.8%). Within the study area, the population change has been observed as 14.4% over that period.

3.4.7. Within the study area population density is 1.8 people per hectare. The Cambridgeshire average is 2.0 people per hectare. This is lower than the England & Wales overall population density at 3.7 people per hectare.\(^{13}\) This reflects the more rural character of the county.

3.4.8. There is a smaller percentage of Black and Minority Ethnic population within the study area than at the county and national level. There is also a smaller percentage of the population in the study area that is not ‘White UK’ and who cannot speak England well or at all. This data is presented in Table 3.

<table>
<thead>
<tr>
<th>Table 3 – Ethnicity and Language indicators, 2011 (%)(^{14})</th>
<th>Area</th>
<th>Black and Minority Ethnic (BME) population</th>
<th>Population whose ethnicity is not ‘White UK’</th>
<th>Population who cannot speak English well or at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterbeach Ward</td>
<td>7.0</td>
<td>11.1</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>South Cambridgeshire</td>
<td>6.7</td>
<td>12.7</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>East Cambridgeshire</td>
<td>3.8</td>
<td>10.3</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>Cambridgeshire</td>
<td>7.4</td>
<td>15.5</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>England</td>
<td>14.6</td>
<td>20.2</td>
<td>1.7</td>
<td></td>
</tr>
</tbody>
</table>

ECONOMY AND EMPLOYMENT

3.4.9. Employment Status can be split into two separate categories; ‘Economically Active’ and ‘Economically inactive’. For the population aged between 16-74 within the study area, 74.0% were in employment. This is a larger percentage of the population compared to the Cambridgeshire average (69.0%) and the England average (65.5%). Table 4 summaries this employment information for the wards within the study area, Cambridgeshire and England.

3.4.10. Unemployment of the Economically Active population within the wards in the study area is less than the national and Cambridgeshire average, with an average unemployment of 2.4%. The wards average percentage of the population retired (13.5%) is similar to that of the national level, but higher than the Cambridgeshire level. This supports the population baseline which shows that these wards (excluding Waterbeach Ward) have a large percentage of the population within the age range 65+. Both Cambridgeshire and the wards within the study area have a smaller percentage of the population Economically Inactive as a result of being long-term sick or disabled.


3.4.11.

Table 4 – Economic Activity (16-74 years population)\textsuperscript{15,16}

<table>
<thead>
<tr>
<th>Location</th>
<th>Waterbeach Ward</th>
<th>Cambridgeshire</th>
<th>England\textsuperscript{17}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees</td>
<td>65.8</td>
<td>56.0</td>
<td>52.3</td>
</tr>
<tr>
<td>Self employed</td>
<td>9.1</td>
<td>9.8</td>
<td>9.8</td>
</tr>
<tr>
<td>Working Student</td>
<td>1.9</td>
<td>3.2</td>
<td>3.4</td>
</tr>
<tr>
<td>Unemployed</td>
<td>2.3</td>
<td>3.0</td>
<td>4.4</td>
</tr>
<tr>
<td>Retired</td>
<td>11.1</td>
<td>12.7</td>
<td>13.7</td>
</tr>
<tr>
<td>Student</td>
<td>2.6</td>
<td>7.3</td>
<td>5.8</td>
</tr>
<tr>
<td>Looking after home / Family</td>
<td>3.6</td>
<td>3.7</td>
<td>4.4</td>
</tr>
<tr>
<td>Sick / disabled</td>
<td>1.7</td>
<td>2.6</td>
<td>4.0</td>
</tr>
<tr>
<td>Other</td>
<td>1.9</td>
<td>1.6</td>
<td>2.2</td>
</tr>
</tbody>
</table>

3.4.12. Cambridgeshire County Council Research and Performance Team have provided estimates of gross household income at ward level by income bands for 2009, presented in

3.4.13. **Figure 3.** This data shows that a larger percentage of the households in the study area fall within income band between £40k – £100k+ when compared to the Cambridgeshire average. The largest gross household income band is £20k - £40k.

3.4.14. The median household income for Cambridgeshire and in the study area in 2009 was £32,500 for Cambridgeshire and £33,600 for Waterbeach.

3.4.15. South Cambridgeshire generally has a high percentage of households with an income of between £40k – £100k+ when compared to East Cambridgeshire. South Cambridgeshire also has a higher median income at £36,000, compared to the median income of households in East Cambridgeshire at £32,500.\(^{18}\) Within the county income is highest in South Cambridgeshire.\(^{19}\)


3.4.16. The percentage of benefit claimant of working age (16-64) within the district of East Cambridgeshire is higher than the district of South Cambridgeshire, at 6.6% and 5.5% respectively.\(^21\) This is lower than the percentage of benefit claimant of working age (16-64) within the county of Cambridgeshire (6.8%) and within England (12.0%).\(^21,\)\(^22\) Cambridgeshire as a whole has significantly higher rates of sickness absence than found nationally.\(^23\)

3.4.17. A significantly higher proportion of Cambridgeshire’s workers are in high value occupations, compared with the regional and national average.\(^24\) These occupations are mainly concentrated in the south of the county. Across Cambridgeshire, the professional, scientific and technical sector accounts for the largest number of businesses at 16% of all local units, followed by construction at 11%.\(^24\) The professional, scientific and technical sector accounts for the largest number of businesses in South Cambridgeshire, while construction is the largest sector in East Cambridgeshire.\(^24\) South Cambridgeshire is both a regional and national centre for Research and Development. There is a very diverse private sector economy with many elements of high value activity. East Cambridgeshire’s economy is a key centre for manufacturing (mainly lower value) and processing.\(^24\)

3.4.18. The current district-wide containment levels are 15%, compared to the 37% of employed people both live and work in South Cambridgeshire. Around 13% of people in the District currently work from home.

**SKILLS AND LEARNING**

3.4.19. Cambridgeshire residents aged between 19 and retirement-age are, on average, more qualified than across the region or country as a whole.\(^24\) There is a clear difference in the highest level of qualification achieved between East and South Cambridgeshire, with 29.0% and 40.1% of the usual residents aged 16 and over achieving Level 4 qualifications and above respectively.\(^25\) These differences between districts have been suggested to show inequality in terms of high level qualifications within the county.\(^22\)

3.4.20. In 2011, the percentage of residents age 16 and over within each of the five wards in the study area with a Level 4 qualification or above (broadly equivalent to a degree or higher qualification) was higher than the national percentage. The percentage of residents within each of the five wards in the study area without qualification was lower than the national percentage.\(^25\)

3.4.21. The variation in highest level of qualification between the wards within the study area, compared to the national level, is displayed with Figure 4. Waterbeach Ward has the lowest percentage of usual residents aged 16 and over achieving Level 4 qualifications and above, but the highest level of residents achieving Level 3 qualifications.

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(broadly corresponds to people with A-Level or equivalent qualifications). Other percentages of qualification levels of usual residents aged 16 and over are similar between wards.

3.4.22. Results for 2015/16 show that in East Cambridgeshire 58.7% of pupils taking GSCEs achieved five or more passes at grades A* - C including GCSE England and Maths. This is similar to both the national and regional (East of England) averages of 57.8% and 57.9 respectively. In South Cambridgeshire, 70.2% of pupils taking GSCEs achieved five or more passes at grades A* - C including GCSE England and Maths. This is significantly higher than the national and regional average.

Figure 4 – Highest level of qualification achieved by residents age 16 and above

COMMUNITY SAFETY

3.4.23. Cambridgeshire has five Community Safety Partnerships (CSP), one in each district. Each CSP has a statutory duty to reduce crime and disorder in its area. The district council plays an active role in the district’s CSP, which also includes representatives from the Police, County Council, PCT and Probation.

3.4.24. The below figure (Figure 5) displays the average crime rate in South and East Cambridgeshire compared to the other Cambridgeshire force areas. This shows that both the South and East Cambridgeshire average crime rate was lower than that for the Cambridgeshire force area in the year ending June 2017. South Cambridgeshire had more crime than East Cambridgeshire over this twelve month period per thousand residents, having 44.02 per thousand residents compared to 36.21 per thousand residents respectively. These crime rates are up in both South and East Cambridgeshire force areas compared with the corresponding quarter in 2016. This has also been reported nationally.

3.4.25. In the year ending June 2017, the crime rate in South Cambridgeshire was about the same as the average crime rate across similar areas. Conversely, the crime rate in East Cambridgeshire was lower than the average crime rate across similar areas.

Figure 5 – The crime rate in South and East Cambridgeshire per thousand residents, compared to the average for the Cambridgeshire force area

3.4.26. Within the study area, violent crime, burglary and anti-social behaviour were the most frequent crimes between October 2016 to September 2017. These crime categories make up between 13.6% to 27.5% of all the crime in the ward, and is within the range experienced for Cambridgeshire overall. Vehicle Crimes in Waterbeach Ward was higher than in Cambridgeshire. Robbery, possession of weapons, theft from the person and drugs all make up less than 2% of the total crime individually in the ward. Bike theft, though high (3.8%) within the study area, is comparable to the percentage make up of all crime in Cambridgeshire (5.4%).

3.4.1. The crime rate over this twelve month period (October 2016 to September 2017) per thousand residents was lower for Waterbeach Ward at 53.4 than for Cambridgeshire which was 82.9.

3.4.2. This information is summarised with the circle charts below, presenting the proportion of the various types of crime recorded within the Waterbeach ward study area and in Cambridgeshire.

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33 Calculated using 2011 Census Populations and October 2016 to September 2017 crime rates.
**TRANSPORT**

3.4.3. Cambridgeshire is partly a rural county. The rural geographies have low population densities and this impacts on residents’ access to jobs and education, training and employability services. Limited access means individuals without access to private transport and on low incomes are particularly affected. Access to transport is likely to be a key barrier to the economic participation rate in rural areas.

3.4.4. The average distance travelled to work from usual residents aged 16 to 74 in employment in 2011 in the study area was between 15.0 km and 17.7 km. This was greater than the England average of 14.9 km travelled to work. In East Cambridgeshire there are very high levels of out commuting, mainly to Cambridge and its surrounding area. In South Cambridgeshire and across Cambridgeshire, rural areas suffer from relatively low accessibility of jobs by public transport, cycling or walking.

3.4.5. The method of travel to work of all usual residents aged 16 to 74 for the five wards in the study area, Cambridgeshire and England is displayed within Figure 5. This table identifies that a higher percentage of the residents within the five wards work mainly at or from home than the national and regional level. A large percentage of the residences within the Waterbeach Ward use the train as the method to travel to work. This is likely to be a result of this ward having a train station, Waterbeach station. Cambridge Station is south of the Proposed Development. Bus use in the study area is lower than the national level.

3.4.6. Table 6 shows that there is a greater availability of car or van for households within the study area when compared to the national level. Consistent within Table 5, within the five wards there is generally a larger percentage of car or van use for travel to work then the national level. This level is lowers than the national level for Waterbeach. This is possibility due to more localised employment, with approximately 25% of residence travelling to work on bicycle or on foot. This is higher than the national level at approximately 13%.
### Table 5 – Method of travel to work

<table>
<thead>
<tr>
<th>Method of Travel to Work</th>
<th>Waterbeach</th>
<th>Cambridgeshire</th>
<th>England</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work mainly at or from home</td>
<td>13.4</td>
<td>11.8</td>
<td>10.3</td>
</tr>
<tr>
<td>Underground, metro, light rail, tram</td>
<td>0.0</td>
<td>0.1</td>
<td>4.0</td>
</tr>
<tr>
<td>Train</td>
<td>6.3</td>
<td>3.7</td>
<td>5.2</td>
</tr>
<tr>
<td>Bus, minibus or coach</td>
<td>3.0</td>
<td>3.5</td>
<td>7.3</td>
</tr>
<tr>
<td>Taxi</td>
<td>0.1</td>
<td>0.3</td>
<td>0.5</td>
</tr>
<tr>
<td>Motorcycle, scooter or mopeds</td>
<td>1.0</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Driving a car or van</td>
<td>47.9</td>
<td>57.4</td>
<td>54.0</td>
</tr>
<tr>
<td>Passenger in a car or van</td>
<td>3.4</td>
<td>4.5</td>
<td>4.9</td>
</tr>
<tr>
<td>Bicycle</td>
<td>11.6</td>
<td>9.4</td>
<td>2.9</td>
</tr>
<tr>
<td>On foot</td>
<td>13.0</td>
<td>8.3</td>
<td>9.8</td>
</tr>
<tr>
<td>Other method of travel to work</td>
<td>0.3</td>
<td>0.4</td>
<td>0.5</td>
</tr>
</tbody>
</table>

### Table 6 – Car or van availability

<table>
<thead>
<tr>
<th>Area</th>
<th>No cars or vans in household (households)</th>
<th>One or more cars or vans in household (households)</th>
<th>% households with access to a car or van</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterbeach</td>
<td>316</td>
<td>1974</td>
<td>86.2</td>
</tr>
<tr>
<td>Cambridgeshire</td>
<td>43588</td>
<td>207653</td>
<td>82.7</td>
</tr>
<tr>
<td>East Cambridgeshire</td>
<td>4510</td>
<td>30104</td>
<td>87.0</td>
</tr>
<tr>
<td>South Cambridgeshire</td>
<td>6571</td>
<td>53389</td>
<td>89.0</td>
</tr>
<tr>
<td>England</td>
<td>5691251</td>
<td>16372117</td>
<td>74.2</td>
</tr>
</tbody>
</table>

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52 Excluding 'Not in employment'.

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WATERBEACH STATION
Project No.: 70000773-H1 | Our Ref No.: Version 1
LDA Design
HEALTH PROFILE

3.4.8. Table 7 identifies people's self-assessment of their general state of health, the percentage of residents providing unpaid care because of ill health and the percentage of residents with a long-term activity-limiting illness. Within Cambridgeshire, all districts except Fenland had higher than the national average percentage reporting good or very good health. A larger percentage of residents within the study area reported they were in good or very good health compared to the national average. The percentage of residents within the Waterbeach Ward study area reporting that they were in good or very good health was very high, at 86.8%.

3.4.9. The number of people affected by a long-term activity-limiting illness in Cambridgeshire increased by 18% between 2001 and 2011, consistent with a growing and ageing population. Within Cambridgeshire, Fenland was the only district where the percentage reporting long-term activity-limiting illness was higher than the national average at 17.6%. The percentage of resident within the Waterbeach Ward study area reporting long-term activity-limiting illness was 12.7%, lower than the Cambridgeshire average of 15.3%, and much lower than the national average of 17.6%. This is supported with Waterbeach Ward having a lower percentage of both 45–64, and 65+ age group.

3.4.10. Approximately 10% of Cambridgeshire residents provide unpaid care, similar to the national average. This percentage is similar to the South Cambridgeshire average, but higher than the East Cambridgeshire average. Waterbeach Ward had the smallest percentage of residents providing unpaid care.

3.4.11. Data on long-term health problems and disability are strongly influenced by the age structures of populations, with older populations likely to have higher percentages with long-term activity-limiting illness.

Table 7 – Health and Carers

<table>
<thead>
<tr>
<th>Area</th>
<th>Residence self-assessment of their general state of health (%)</th>
<th>Residents with a long-term activity-limiting illness (%)</th>
<th>Residents providing unpaid care (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very good</td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td>Waterbeach</td>
<td>52.0</td>
<td>34.8</td>
<td>10.1</td>
</tr>
<tr>
<td>Cambridgeshire</td>
<td>49.4</td>
<td>34.7</td>
<td>11.8</td>
</tr>
<tr>
<td>East Cambridgeshire</td>
<td>48.8</td>
<td>35.2</td>
<td>12.1</td>
</tr>
<tr>
<td>South Cambridgeshire</td>
<td>52.5</td>
<td>33.7</td>
<td>10.6</td>
</tr>
<tr>
<td>England</td>
<td>47.2</td>
<td>34.2</td>
<td>13.1</td>
</tr>
</tbody>
</table>

Weight and Physical Activity

3.4.12. The rate of excess weight in adults (16+) is statistically significantly better than the England average for Cambridgeshire as a whole, with 63% of Cambridgeshire adults overweight. At district level, the percentages are statistically significantly worse than the national average in East Cambridgeshire. Rates of excess weight in children are statistically significantly better within Cambridgeshire (except in Fenland) compared to the England average.

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57 Between 1 – 50 hours per week.
3.4.13. Public Health England has reported that 24.1% of adults in England are obese⁵⁹. This is higher than the percentage in both East and South Cambridgeshire at 23.0% and 20.1% respectively. At 21.6%, the Waterbeach Ward study area has a higher percentage of adult obesity than the Cambridgeshire average, which is 20.9%.⁵⁹

3.4.14. Public Health England has reported that 9.3% of children (reception year) in England are obese, compared to 7.5% in East Cambridgeshire, 6.2% in South Cambridgeshire, and 7.4% in Cambridgeshire overall. The Waterbeach Ward (8.0%) has a higher percentage than the national level of reception year children at 8.0%.

3.4.15. The rate of physical activity in adults (16+) is statistically similar to the England average for Cambridgeshire as a whole. East Cambridge is statistically similar to the England Average, whereas South Cambridgeshire is statistically significantly better than the England average.⁵⁸

3.4.16. Local data from the Health Related Behaviour Survey indicate higher levels of inactivity as children grow up, with 8% of Year 10 Cambridgeshire children inactive in the week before survey compared to 4% of Year 8 children. The percentages of 15 year olds physically active and sedentary are statistically similar to the England average. Approximately 25% of all Cambridgeshire adults are inactive.⁵⁸

**Live Choices / Behavioural risk factors**

3.4.17. The percentage of Cambridgeshire adults who abstain from drinking alcohol is statistically significantly lower than the England average. Levels of binge drinking and excess drinking in Cambridgeshire are similar to national levels.⁵⁸ Binge drinking is defined as exceeding eight units in one day for men and six units in one day for women on their heaviest drinking day.⁶⁰ In England, it is reported that 20% of adults binge drink. This is higher than the percentage of adults that Binge Drink in Waterbeach Ward, which was 19.6%.⁵⁸

3.4.18. The percentage of 15 year olds in Cambridgeshire that have ever had an alcoholic drink is statistically significantly higher than the England average.⁵⁸

3.4.19. Smoking prevalence in adults 18+ is statistically similar to the England average for Cambridgeshire as a whole and for East and South Cambridgeshire. The percentages of 15 year olds that are current smokers and regular smokers are statistically similar to the England average. South and East Cambridgeshire are statistically significantly better than the Cambridgeshire average for directly age-standardised drug-related mortality. The rate of under 18 conception in Cambridgeshire, and South and East Cambridgeshire, is statistically significantly lower than the England average.⁵⁸

**Illness and disease**

3.4.20. The main causes of death in Cambridgeshire residents are cancer (29%), cardiovascular disease (27%), respiratory disease (12%) and dementia and Alzheimer’s (12%). The major causes of death in Cambridgeshire are similar to those seen nationally.⁵⁸ The recorded prevalence of cancer is statistically significantly higher than the national average for the county as a whole and in all districts except for Cambridge. Levels of recorded dementia across the county are increasing but are significantly lower or similar to the national average.⁵⁸

3.4.21. The recorded prevalence of asthma has been consistently statistically significantly higher than the England average in East Cambridgeshire and South Cambridgeshire. Rates appear to be increasing in South Cambridgeshire. ⁵⁸

3.4.22. Rates of emergency admission to hospital for self-harm have been statistically significantly higher than the national average in Cambridgeshire since 2013/14 and appear to be increasing. Rates are worse than England in all districts except for South Cambridgeshire. Hospital stays for self-harm in Waterbeach have been report to be significantly worse than the overall England levels.⁵⁹ Rates are higher in females, accounting for around two-thirds of admissions. ⁵⁸ East Cambridgeshire and South Cambridgeshire have lower suicide rates than England averages⁶¹

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3.4.23. Prevalence of mental health conditions (Schizophrenia, bipolar affective disorder, other psychoses, Depression (18+) and Learning disabilities) by district of general practice location is statistically significantly lower than the England average within East and South Cambridgeshire.  

Life Expectancy

3.4.24. Life expectancy at birth is higher in Cambridgeshire and all its districts than the England average for both males and females. The life expectancy in East and South Cambridgeshire, Cambridgeshire, and England is displayed in Table 8. Life expectancy in East and South Cambridgeshire is statistically significantly better than the England average. Life expectancy at birth within the Cambridgeshire districts is the highest within South Cambridgeshire for both males and females, with male life expectancy being is 3.1 years higher than in England and females life expectancy being 2.4 years higher than England.

3.4.25. The absolute gap between life expectancy at birth in the most deprived and least deprived quintiles in Cambridgeshire it is -5.2 years (e.g. males living in the most deprived quintile of Cambridgeshire can expect to live 5.2 years less than males in the least deprived quintile). For females, the absolute gap between life expectancy at birth in Cambridgeshire it is -4.0 years. These absolute gaps in life expectancy between least and most deprived quintile are smaller for South and East Cambridgeshire, and the overall England gap.

Table 8 – Life Expectancy at birth, 2012-14 (years)

<table>
<thead>
<tr>
<th>Area</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Life expectancy</td>
<td>Absolute gap in life expectancy between area and England</td>
</tr>
<tr>
<td>East Cambridgeshire</td>
<td>82.2</td>
<td>2.6</td>
</tr>
<tr>
<td>South Cambridgeshire</td>
<td>82.7</td>
<td>3.1</td>
</tr>
<tr>
<td>Cambridgeshire</td>
<td>81.2</td>
<td>1.6</td>
</tr>
<tr>
<td>England</td>
<td>79.6</td>
<td>-</td>
</tr>
</tbody>
</table>

3.4.26. At electoral ward level, life expectancy can be influenced by locally specific factors such as nursing homes locations. Females in the Waterbeach Ward study area have statistically significantly higher life expectancy (84.4yrs) than the England average (83.2yrs). The average male life expectancy is also higher in the Waterbeach Ward (83.5yrs) than the national average (79.6yrs).

DEPRIVATION

3.4.27. There is a geographical pattern to deprivation in Cambridgeshire, with more deprived areas clustering to the north and east of both the county and of Cambridge City, and less deprived areas clustering to the south and west. Overall South Cambridgeshire is less deprived than other districts in Cambridgeshire and the most deprived areas in East Cambridgeshire (which does not including any areas within the study area) are considerably less deprived than the most deprived areas nationally.

3.4.28. The Indices of Deprivation present a comprehensive measure of relative deprivation across small areas of England, known as lower super output area (LSOA). The Indices contain seven ‘domains’ of deprivation, which are combined to give the overall Index of Multiple Deprivation (IMD). There are nine LSOAs within Cambridgeshire that would be considered ‘deprived’ in national terms based on the overall IMD. These are within Fenland (seven) and Cambridge City (two).

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3.4.29. The Indices of Deprivation 2015 are relative measures of deprivation, showing only that one area is more deprived than another. The more deprived the area, the higher the IMD score. Scores for geographies larger than LSOAs are produced using population weighted averages of the combined scores of the LSOAs in that area. The national, county, district and study area wards IMD 2015 average scores are shown below:

- England – 21.8
- Cambridgeshire – 13.4
- South Cambridgeshire – 8.1
- East Cambridgeshire – 12.1
- Waterbeach Ward – 7.9

3.4.30. All LSOAs within the study area are within the 25% - 100% least deprived areas in England, according to the England IMD. The Office for National Statistics provides data on household deprivation by deprivation dimensions. The dimensions of deprivation used to classify households are indicators based on the four selected household characteristics. A household is deprived in a dimension if they meet one or more of the following conditions:

- Employment: any member of a household not a full-time student is either unemployed or long-term sick;
- Education: no person in the household has at least level 2 education, and no person aged 16-18 is a fulltime student;
- Health and disability: any person in the household has general health 'bad or very bad' or has a long term health problem; and
- Housing: Household's accommodation is either overcrowded, with an occupancy rating -1 or less, or is in a shared dwelling, or has no central heating.

3.4.31. The percentage of households within the study area that are classified as being deprived based on the above dimensions is lower than the national and county level. The percentage classified as being deprived in 2011 was:

- Waterbeach Ward – 44.1%
- Cambridgeshire – 50.9%
- England – 57.5%

3.4.32. South Cambridgeshire is markedly the least deprived district in Cambridgeshire, across all the measures presented and, along with East Cambridgeshire, has none of its population living in the most deprived fifth (20%) of areas nationally.

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4 SUMMARY OF HEALTH ISSUES, IMPACTS AND SCOPE

4.1 HEALTH ISSUES

4.1.1. For the study area, most indicators are relatively favourable when assessed against national comparators and, broadly, East and South Cambridgeshire (and Huntingdonshire) drive Cambridgeshire position as a healthy place compared with England collectively.\(^\text{58}\)

4.1.2. The baseline studies have highlighted the following potential current health issues within the study area:

- **Population demographics:**
  - There is a rapidly growing population, particularly in Waterbeach Ward, and an ageing population with a large percentage of the population within the age range 65+; and
  - Cambridgeshire’s population has a lower proportion of people from minority ethnic groups, with a smaller percentage of Black and Minority Ethnic population within the study area than at the county and national level. There is also only a small percentage of the population in the study area that is not ‘White UK’ and who cannot speak England well or at all.

- **Education:**
  - There is evidence of inequalities in regards to education within the study area and a clear difference in the highest level of qualification achieved between East and South Cambridgeshire.

- **Housing:**
  - The housing stock profile for both East and South Cambridgeshire, being more rural districts, is dominated by houses (detached, semi-detached and terraced) and there is only a small percentage of Tax Band A dwellings;
  - Waterbeach Ward has a low percentage of people owning their own homes, but a high proportion of private rented tenure. This level of private tenure is higher than the county and national average. The percentage of social housing also varies between wards in the study area;
  - Between the wards within the study area, Waterbeach has the highest percentage of overcrowding. This may reflect the higher percentage of social and private rented tenure within this ward; and
  - There is a need for affordable housing.

- **Crime:**
  - There is some concern with Cambridgeshire surrounding violent crime, where the rate of offences is increasing.

- **Travel and access to facilities:**
  - Cambridgeshire is partly a rural county, which may impact on residents’ access to jobs and education, training and employability services;
  - There is expected to be a high levels of out commuting, mainly to Cambridge and its surrounding area;
  - The average distance travelled to work from usual residents in the study area is greater than the national average and there is generally a large reliance on motorised vehicles; and
  - Residences within Waterbeach Ward have a large reliance on the train as the method to travel to work.

- **Health profile:**
  - Cambridgeshire as a whole have significantly higher rates of sickness absence than found nationally;
  - There is some concern surrounding the rate of excess weight and obesity in children and adults;
  - Some results suggest increasing inactivity as children grow up;
  - The recorded prevalence of asthma has been consistently statistically significantly higher than the England average in East and South Cambridgeshire;
  - There is some concern within Cambridgeshire surrounding mental health and self-harm. Rates of emergency admission to hospital for self-harm have been statistically significantly higher than the national average in Cambridgeshire since 2013/14 and appear to be increasing. Rates are higher in females. Hospital stays for self-harm in Waterbeach have been report to be significantly worse than the overall England levels;
  - Females and males in the Waterbeach Ward have higher life expectancy than the England average.

4.2 VULNERABLE GROUPS

4.2.1. The baseline study has highlighted the following vulnerable groups:

- Elderly people;
- Children and young people;
- Black and Ethnic Minority groups;
- Disabled people with a physical or mental impairment;
- People living in geographical or social isolation;
- People that are economically inactive or unemployed;
- Non-motorised users; and
- People with poor access to services, facilities and amenities.

### 4.3 POSSIBLE IMPACTS OF THE PROPOSED DEVELOPMENT

#### 4.3.1. The following have been identified as possible impacts as a result of the Proposed Development:

- **Access to Transport:**
  - Health gains through improved employment and economy as a result of improved access to training and employment opportunities.
- **Active Travel / exercise and physical activity**
  - Enhanced pedestrian and cyclist access to the new Waterbeach Station could bring about positive health outcomes through an increase in active travel and reduction in private vehicle use, with increased exercise levels and a potential reduction in vehicle emissions.
- **Social Isolation and Social Capital**
  - Removal of the existing station and its relocation could isolate and disengage users of the existing Waterbeach Station. This could result in an adverse impact on health due to inequality of access to facilities, employment and education. In addition it could trigger a reduction in community cohesion severance (both real and perceived barriers).
  - Due to existing social isolation associated with new towns, the new development could result in adverse health outcomes should it not be made safe and secure from those suffering from poor mental health.
  - Adverse health impacts could occur as a consequence of social isolation through the phasing of the new station not being timed to serve new developments at Waterbeach and not the existing Waterbeach residents.
- **Air quality, Noise and neighbourhood amenity**
  - There may be reduced air quality within the local area during construction and operation as a result of increased nitrogen dioxide and Particulate Matter.
  - Increased noise exposure may occur upon residential receptors from construction and operation.
  - Improvements to the new station design will improve improvement of neighbourhood amenity through a reduction in the indiscriminate use of on-street parking cycle storage currently underway at the existing Waterbeach station.
- **Accidental Injuries/ public safety**
  - New station design could improve health through reducing the risk of accidental injury and public safety by removing the level crossing and its low priority for pedestrian crossing at the existing Waterbeach Station.
  - There will be opportunities for a reduction in antisocial behaviour, and fear of crime in potential enhancements to the public realm surrounding the new station.

### 4.4 KEY DETERMINANTS OF HEALTH

#### 4.4.1. The following have been identified as possible key determinants of health for the Proposed Development:

- Access to Transport;
- Active Travel / exercise and physical activity
- Social cohesion / social capital
- Air quality, noise and neighbourhood amenity
- Accidental injuries / public safety

### 4.5 CONCLUSIONS

#### 4.5.1. This health baseline, study area, determinants of health, vulnerable groups and assessment methodology outlined in this scoping report, we feel will allow the principle health impacts to be assessed. This assessment will identify where mitigation measures may be required to off-set or prevent adverse health outcomes. In addition opportunities to promote to improve health outcomes through changes to the scheme design will be highlighted.