



## UNIVERSAL DESTINATIONS & EXPERIENCES UK PROJECT

Former Kempston Hardwick Brickworks  
and adjoining land, Bedford

### Chapter 17 – Population and Human Health

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## 17. POPULATION AND HUMAN HEALTH

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### 17.1. INTRODUCTION

- 17.1.1. This chapter has been prepared in support of the planning proposal for the Proposed Development as described in **Chapter 2: Description of the Proposed Development (Volume 1)** of the Environmental Statement (ES). This reports the outcome of the assessment of likely significant effects arising from the Proposed Development in relation to Population and Human Health during construction and operation.
- 17.1.2. The requirement to consider human health in Environmental Impact Assessment (EIA) was introduced in the 2017 EIA Regulations (**Ref 17.58**). However, there is no statutory guidance on assessing health impacts in the context of an EIA. This chapter has the dual role of being the Health Impact Assessment (HIA) and reporting the likely significant human health effects for the EIA.

#### SUPPORTING DOCUMENTATION

- 17.1.3. This chapter is intended to be read in conjunction with the following supporting documents (ES Volume 3) and documents:
- **Appendix 0.1: Glossary and Acronyms (Volume 3);**
  - **Appendix 1.1: Relevant Expertise and Competency (Volume 3);**
  - **Appendix 3.1: Legislation, Policy and Guidance for all ES Technical Topics (Volume 3);**
  - **Appendix 3.2: Significance Criteria for all ES Technical Topics (Volume 3);**
  - **Appendix 3.3: Assessment of Likely Significant Effects Resulting from Removal of Residential Dwellings within the Site Boundary (Volume 3);**
  - **Chapter 2: Description of the Proposed Development (Volume 1);**
  - **Chapter 8: Air Quality (Volume 1);**
  - **Chapter 9: Noise and Vibration (Volume 1);**
  - **Chapter 13: Socio-Economics (Volume 1);**
  - **Public Engagement Report (Document Reference 6.5.0);** and
  - **Employment and Skills Plan (Document Reference 6.12.0).**

#### LEGISLATIVE FRAMEWORK, POLICY AND GUIDANCE

- 17.1.4. The relevant legislation, policy and guidance to the assessment of Population and Human Health effects associated with the Proposed Development are detailed in **Appendix 3.1: Legislation, Policy and Guidance for all ES Technical Topics (Volume 3)**.

### 17.2. ASSUMPTIONS USED TO INFORM ASSESSMENT

- 17.2.1. The assessment presented in this chapter has been based on the Proposed Development as described in **Chapter 2: Description of the Proposed Development (Volume 1)**. This chapter has also used the following assumptions to build on the information in **Chapter 2: Description of the Proposed Development (Volume 1)** to support undertaking an assessment of a cautious worst

case (where the phrase “cautious worst case” is used it means “a cautious worst case that provides a robust assessment of likely significant effects”).

- 17.2.2. This assessment has been carried out using professional judgement and based on available information.
- 17.2.3. The assessment is informed by population and human health data. As with any dataset, these may be subject to change over time, which may influence the findings of the assessment. Many datasets do not reflect the short-term or long-term consequences of the Covid-19 pandemic. Where these consequences may influence a finding of the assessment, this has been identified.
- 17.2.4. The health assessment builds upon the technical inputs from other ES chapters to investigate changes in health determinants directly attributable to the Proposed Development. As a consequence, the limitations of the supporting assessments are inherent to the assessment of health.
- 17.2.5. Within this assessment, the future baseline is presented for general trends relating to the above general health and population findings. The future baseline is not considered under each effect due to difficulty and uncertainty forecasting relevant baseline findings.
- 17.2.6. The Proposed Development is unique in its nature. This means that standard methods of assessment are not always appropriate for all effects. Professional judgment based on clear transparent assumptions, backed by evidence and benchmarks, has been used in instances where standard methods are not appropriate.
- 17.2.7. There is uncertainty with regards to the delivery of the sports provision by 2051 (further information in **Table 17-27**). The effect is assessed; however it is explicitly stated that the effect would only occur should the sports provision come forward. There is no effect should it not come forward by 2051.

## 17.3. ENGAGEMENT, SCOPE AND STUDY AREA

### ENGAGEMENT

- 17.3.1. **Table 17-1** provides a summary of the engagement activities undertaken in support of the preparation of this assessment.

**Table 17-1 – Summary of Engagement Undertaken**

Body/organisation	Meeting dates and other forms of engagement	Summary of outcome of discussions
NHS Bedfordshire, Luton and Milton Keynes Integrated Care Board (ICB) and Integrated Care System (ICS) NHS Bedfordshire Hospitals Foundation Trust Bedford Borough Council (Bedford BC)	08 April /2024 In person meeting Meeting with healthcare authorities	The project is generally supported, particularly praised for its job creation potential. There are concerns about providing adequate health services for visitors and the ability to meet increased housing demands in a timely manner. The NHS has reservations about an on-Site healthcare facility, preferring to manage services to prevent staff attrition to the private sector. No specific concerns were raised regarding disruption to communities during construction, mental health, or demand for public services.

Body/organisation	Meeting dates and other forms of engagement	Summary of outcome of discussions
		However, stakeholders were encouraged to continue contributing feedback and engage with Bedford BC to address these concerns effectively.
Bedford BC Central Bedfordshire Council	Several dates Ongoing	The <b>Public Engagement Report (Document Reference 6.5.0)</b> highlights extensive engagement with both Bedford BC and Central Bedfordshire Council, but no specific health concerns were raised in this process, these discussions were left to relevant healthcare authorities.
Bedfordshire Hospitals NHS Foundation Trust	13 March 25 In person meeting Meeting with healthcare authorities	A meeting with Bedfordshire Hospitals NHS Foundation Trust was held on 13 March 2025 to discuss the Proposed Development. Key points included shared ambitions to support health and wellbeing, opportunities to improve sustainable travel connections to the hospital, and alignment with broader growth plans in the area.
Summary of Agreed Position (SoAPs)	April – May 2025	A series of agreed positions have been developed through ongoing discussions with statutory bodies and key stakeholders. These positions reflect a collaborative process aimed at aligning the project with regulatory expectations, addressing stakeholder priorities and ensuring a shared understanding of key issues.  Key to population and human health is the agreed position with Bedford BC, who agree to the roles and responsibilities of the Parties in the <b>Employment and Skills Plan (Document Reference 6.12.0)</b> .

## EXTENT OF THE STUDY AREA

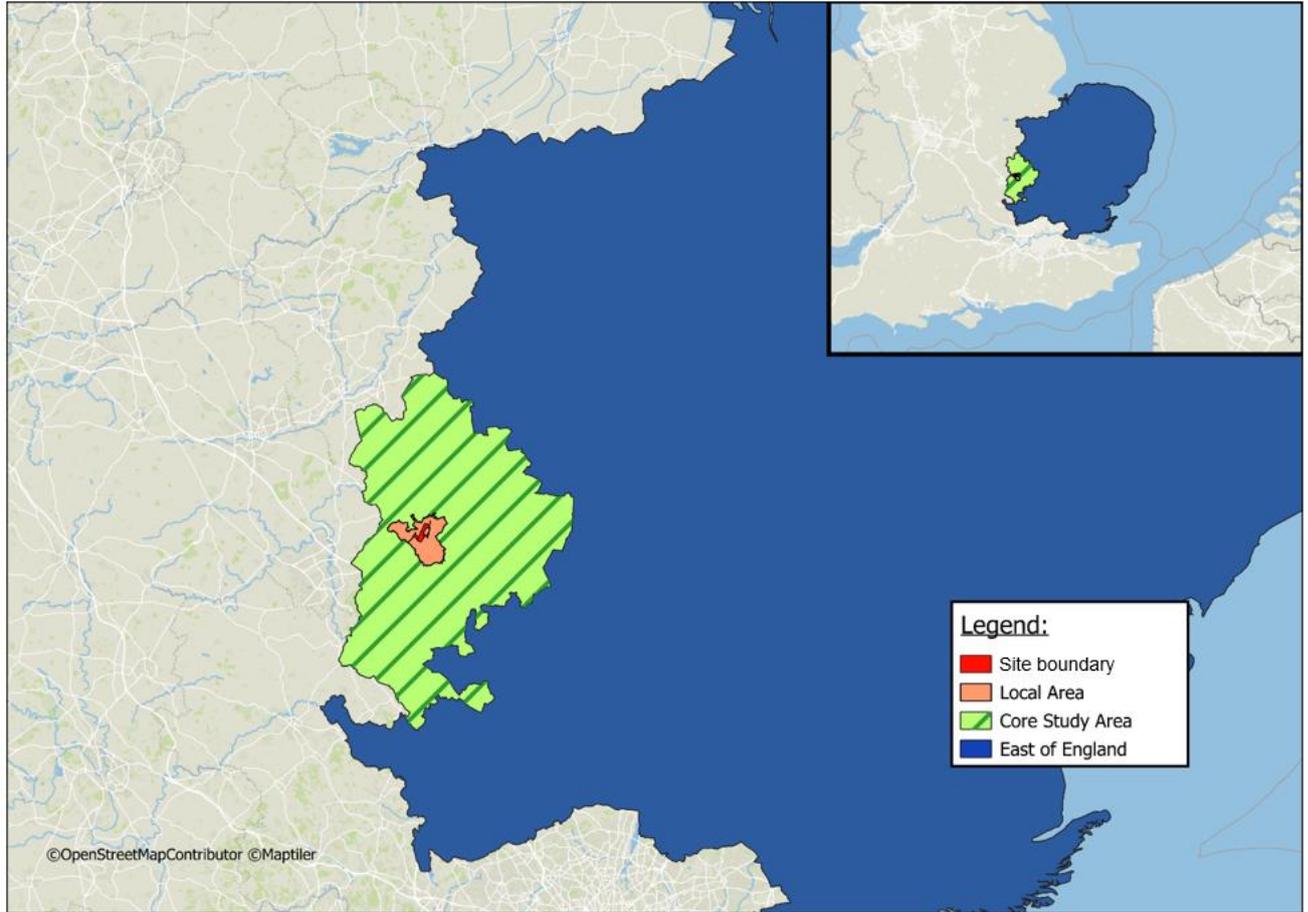
- 17.3.2. The geographical extent of potential Population and Human Health effects from the Proposed Development may vary widely, dependent on the nature of the effect. Study areas are informed using professional judgement on the geographical extent of where potentially significant population and human health effects may be reasonably expected as a result of the Proposed Development. Office for National Statistics (ONS) statistical geographies have been used to define the various study areas.
- 17.3.3. The study areas are described in **Table 17-2** and their boundaries are shown in **Figure 17.1**.

**Table 17-2 – Study Areas Considered**

Geographical study area	Definition
Site	Red Line Boundary
Local Area	Lower layer super output areas (LSOAs) that intersect with a 500m boundary around the Site. There are 33,755 LSOAs in England, which comprise of between 400 and 1,200 households and have a usually

Geographical study area	Definition
	<p>resident population between 1,000 and 3,000 persons. The Local Area is made up of 12 of these LSOAs – ten in Bedford and two in Central Bedfordshire. These LSOAs are: Bedford 018E; Bedford 018G; Bedford 018H; Bedford 020B; Bedford 020C; Bedford 020D; Bedford 020E; Bedford 020F; Bedford 022B; Bedford 022C; Central Bedfordshire 008F; and Central Bedfordshire 008G.</p>
<p>Air Quality Assessment Area (AQAA)</p>	<p><b>Chapter 8: Air Quality (Volume 1)</b> outlines a specific study area for air quality effects (see <b>Figure 8.1: Air Quality Assessment Study Area (Volume 2)</b>), including:</p> <ul style="list-style-type: none"> <li>▪ The area within which dust impacts may occur extending out to a distance of 250m from the Site Boundary and out to 50m alongside roads to 250m from Site entrance(s);</li> <li>▪ The area within 200m of roads included in the traffic model (<b>Chapter 5: Traffic and Transport (Volume 1)</b>);</li> <li>▪ The area within 200m of roads that are most likely to be affected within Bedford Town Centre AQMA; and</li> <li>▪ The area within 200m of the Maulden Wood and Pennyfather's Hills SSSI and Maulden Wood AW, adjacent to the A6.</li> </ul> <p>General health baseline conditions are presented in the section entitled <b>Baseline Conditions</b>. These are only available at certain geographies (national, regional, local authorities, wards, mid layer support output areas, lower layer super output areas). Where bespoke study areas (such as the AQAA) are used to align with other technical chapters, general health baseline conditions cannot be presented as they do not align with the statistical boundaries for which the data sources are available. Because the AQAA falls within the wider geographies over which the general health baseline statistics are presented, the broad trends in general health baseline conditions are taken to be a reasonable proxy for the baseline conditions of residents across the AQAA.</p>
<p>Noise and Vibration Assessment Area (NVAA)</p>	<p><b>Chapter 9: Noise and Vibration (Volume 1)</b> outlines a specific study area for noise and vibration effects.</p> <p>The study area for construction noise encompasses the existing sensitive receptors around the Site up to a distance of 300m from the Site boundary. Construction vibration has been assessed up to a distance of 100m from the Site boundary. The construction noise and vibration study areas are in line with the guidance in <i>LA111</i> as well as professional judgement.</p> <p>The study area for potential noise effects from development-related traffic on the surrounding road network encompasses the full extent of the road traffic model. Details of the road traffic model are presented in <b>Chapter 5: Traffic and Transport (Volume 1)</b>.</p> <p>The study area for detailed operational noise predictions at sensitive receptors extends to 300m from the Site boundary, as it is considered this would most effectively capture the cautious worst case impacts based on professional judgement and supported by the operational noise assessment outlined in <b>Chapter 9: Noise and Vibration (Volume 1)</b>.</p>

Geographical study area	Definition
	<p>General health baseline conditions are presented in the section entitled <b>Baseline Conditions</b>. These are only available at certain geographies (national, regional, local authorities, wards, mid layer support output areas, lower layer super output areas). Where bespoke study areas (such as the NVAA) are used to align with other technical chapters, general health baseline conditions cannot be presented as they do not align with the statistical boundaries for which the data sources are available. Because the NVAA falls within the wider geographies over which the general health baseline statistics are presented, the broad trends in general health baseline conditions are taken to be a reasonable proxy for the baseline conditions of residents across the NVAA.</p>
Core Study Area (CSA)	<p>Bedford and Central Bedfordshire. The Site is located within the local authority of Bedford, but it is located at the south of the district boundary. As described above, the 500m radius around the Site goes into the district south of Bedford – Central Bedfordshire. For this reason, the CSA is defined as the combined local authority boundaries of Bedford and Central Bedfordshire local authorities. Where effects could be more significant if considered at an individual local authority level, this is considered and discussed.</p>
East of England (East)	The region boundary of the East of England.
National Area	UK and England (UK preferable where data allows).



**Figure 17.1 – Boundaries of the Study Areas**

- 17.3.4. The study areas of this assessment differ from those included in **Chapter 13: Socio-Economics (Volume 1)**, utilising the East of England, rather than the Regional Context Area (which includes the East Midlands, East of England and South East). This is because the East of England is one of seven regional teams that support the commissioning of services and directly commission primary care and specialised services at a local level across England. This regional study area is therefore more appropriate for this assessment of Population and Human Health.

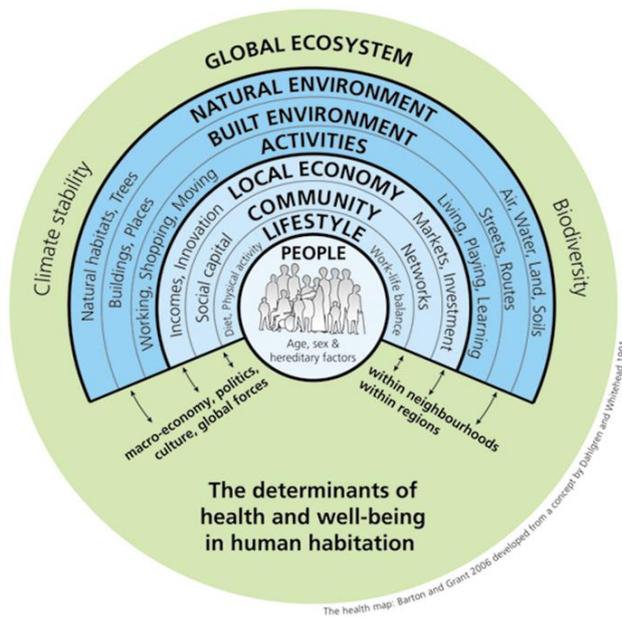
### **SCOPE OF THE ASSESSMENT**

- 17.3.5. A formal Environmental Impact Assessment (EIA) scoping process has not been undertaken in support of the preparation of this assessment. However, this assessment has been undertaken in line with best practice guidance, engagement with statutory bodies and using professional judgement.
- 17.3.6. This Population and Human Health assessment has considered the potential for the Construction and Operation Phases of the Proposed Development to result in likely significant effects.
- 17.3.7. Specifically, the scoping process of effects has been conducted in line with Healthy Urban Development Unit (HUDU) best practice guidance (**Ref. 17.59**). The Institute of Environmental Management and Assessment (IEMA) Effective Scoping of Human Health has been used as a guide to identify the relevant health determinants and health effects associated with the Proposed Development, as presented in **Figure 17.2. (Ref. 17.2)**.

17.3.8. Human health is defined in line with the World Health Organisation’s (WHO) definition of health: *“a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”* (Ref. 17.1).

17.3.9. The key word in this definition is ‘well-being’, which is explicitly linked with health by the WHO. “Well-being” refers to a positive rather than neutral state, framing health as a positive aspiration in the definition. In this assessment, changes to mental health outcomes are considered alongside changes to physical health outcomes. It should be acknowledged that literature around the impact of determinants of health on mental health is less well established compared to that related to impacts on physical health. For this reason, the literature around the impact of determinants on mental health often shows mixed findings, with differing impacts that vary from individual to individual, often due to personal (and in some cases subjective) experiences. For this reason, the impact on mental health is considered inherently uncertain.

Development and planning can play a role within the wider determinants of health and well-being. This assessment considers the ways in which the Proposed Development may affect these determinants of health and well-being. It also considers health inequalities and how the Proposed Development may affect different groups in different ways.



**Figure 17.2 – Determinants of Health**

Source: Barton and Grant, 2006. A health map for the local human habitat. The Journal for the Royal Society for the Promotion of Health

17.3.10. The HUDU Rapid HIA tool sets out the determinants of health considered by HIAs. These are listed below.

- Housing design and affordability;
- Access to health and social care services and other social infrastructure;
- Access to open space and nature;
- Air quality, noise and neighbourhood amenity;

- Accessibility and active travel;
- Crime reduction and community safety;
- Access to healthy food;
- Access to work and training;
- Social cohesion and inclusive design;
- Minimising the use of resources; and
- Climate change.

17.3.11. **Table 17-3** identifies which health impacts are judged relevant to the Proposed Development and sets out the health effects that are assessed. These elements are considered to have the potential to give rise to likely significant effects during construction and/or operation of the Proposed Development and have therefore been considered within this assessment.

**Table 17-3 – Elements Scoped into the Assessment**

Health determinant	Health effect scoped in	Construction Phase	Operation Phase
Access to health and social care services and other social infrastructure	Demand for healthcare services	✓	✓
Air quality, noise and neighbourhood amenity	Changes to noise and vibration	✓	✓
Air quality noise and neighbourhood amenity	Changes to air quality	✓	✓
Accessibility and active travel	Changes to local traffic	✓	✓
Accessibility and active travel	Changes to local public transport and active travel	✓	✓
Crime reduction and community safety	Presence of construction workforce	✓	
Access to work and training	Employment and training opportunities	✓	✓
Access to open space and nature	Effect on community from new sports provision		✓
Access to healthy food	Access to healthy and unhealthy food		✓

## Receptors

- 17.3.12. Receptors could be residents, workers or visitors which could experience potentially significant effects. All impacts of health require some form of sustained, persistent impact for them to result in lasting or meaningful impact on health outcomes.
- 17.3.13. Residents in the vicinity of the Site will be exposed to health related impacts on a continuous, long-term basis and so could experience potentially significant effects. Visitors will only spend a limited time in the area and would not be subject to impacts that could have a lasting impact upon their health. Workers – specifically future workers – will be on-Site on a long-term basis and so could experience potentially significant effects.
- 17.3.14. Therefore, the receptors considered in this assessment are residents and future workers (including construction and operational workers).

## Temporal Scope

- 17.3.15. Temporal scope refers to the years the effects have been assessed in. The assessment years are 2026 (first year of construction), 2029 (the Peak Construction Year is the fourth year of construction, which for the purposes of this assessment is 2029), 2026 – 2031 (Primary Phase Construction), 2031 (Theme Park Opening Year) and 2051 (Full Buildout – Future Operational Year). The Full Buildout (2051) reflects the year that the Proposed Development is expected to reach peak visitor numbers that will continue indefinitely thereafter.
- 17.3.16. For all information on the description of the Proposed Development please refer to **Chapter 2: Description of the Proposed Development (Volume 1)**.

## Overall scope of the assessment

- 17.3.17. **Table 17-4** (for construction) and **Table 17-5** (for operation) detail, for each effect, the receptor, study area and temporal scope considered in this assessment.

**Table 17-4 – Elements Scoped into the Assessment during the Construction Phase, including their Receptor, Study Area, and Temporal Scope**

Effect	Receptor	Study area	Temporal scope
Demand for healthcare services	Residents	CSA	2029
Noise and vibration	Residents	NVAA	2029
Air quality	Residents	AQAA	2029
Changes to local traffic	Residents	Local Area	2029
Changes to local public transport and active travel	Residents	Local Area	2029
Presence of construction workforce	Residents	Local Area	2029
Employment and training opportunities	Residents, future workers	CSA	2029

**Table 17-5 – Elements Scoped in to the Assessment during the Operation Phase, including their Receptor, Study Area, and Temporal Scope**

Effect	Receptor	Study area	Temporal scope
Effect on community of new sports provision	Residents	CSA	2051
Demand for healthcare services	Residents	CSA	2031, 2051
Noise and vibration	Residents	NVAA	2031, 2051
Air quality	Residents	AQAA	2031, 2051
Changes to local traffic	Residents	Local Area	2031, 2051
Changes to local public transport and active travel	Residents	Local Area	2031, 2051
Access to health and unhealthy food	Residents	CSA	2031, 2051
Employment and training opportunities	Residents, future workers	CSA	2031, 2051

**Elements Scoped out of the Assessment**

- 17.3.18. The assessment of Population and Human Health focuses only on aspects considered to have the potential to result in likely significant effects.
- 17.3.19. The elements shown in **Table 17-6** are not considered to give rise to likely significant effects as a result of the Proposed Development and have therefore not been considered within this assessment. Justification is provided for this approach.

**Table 17-6 – Elements Scoped out of the Assessment**

Health determinant	Health effect scoped out	Justification
Housing	Housing design and affordability	The Proposed Development is for entertainment, leisure, and tourism uses. The Proposed Development is unlikely to directly affect housing design or affordability as it does not include residential provision.
Relocation	Displacement of residents	<p>A wide body of literature suggests that being displaced from home can have a wide range of negative impacts on mental well-being, including an increased risk for depression, anxiety, and post-traumatic stress disorder. The Proposed Development only results in the displacement of residents from two homes. These dwellings have been purchased by UDX on the open market and through mutually beneficial terms. The other residential properties located within the site boundary will continue in residential use.</p> <p>The small number of homes and the above purchasing detail result in it being considered appropriate to not assess the health impacts of residential displacement as the effect is negligible.</p>

Health determinant	Health effect scoped out	Justification
Open space, leisure and play	Access to open space and nature	<p>Access to open space and nature is important for public health. The Site is currently not accessible to the population and does not contain any publicly accessible open space. A theme park does not serve the same purpose as publicly accessible open space. Therefore there will be no impact on public access to open space and nature.</p>
Community safety	Crime reduction and community safety	<p>Although residents are often concerned by the potential for crime associated with large construction sites, there is very limited evidence to suggest this occurs in practise. A study of the Metropolitan Police found that only 0.3% of crimes took place on building sites. The Metropolitan Police designing out crime team stated that 80% of these crimes could have been avoided by measures such as:</p> <ul style="list-style-type: none"> <li>• Improving access control, correctly identifying who should be on Site, having measures to challenge at the Site Boundary those who do not have authority to be on site, reducing access points to a minimum, ensuring the quality of gating and the securing of gates themselves;</li> <li>• Improving boundaries and hoardings, which should be of a suitable height and construction to withstand attack and climbing. Where hoardings obscure footpaths or create blind-spots, there should be countermeasures installed to overcome this. Climbing points should be taken into account when constructing the hoarding. Heras fencing is in particular unsuitable as a secure boundary fence; and</li> <li>• The locking, securing and identification of plant and construction material.</li> </ul> <p>Crime during construction will be minimised through the use of best practise detailed in the Outline Construction Environmental Management Plan (see <b>Appendix 2.3: Outline Construction Environmental Management Plan (Volume 3)</b>).</p> <p>Regarding the Operation Phase, UDX is experienced in minimising crime at their theme parks across the globe. It is in their interests to minimise crime so as to maximise guest experience.</p>
Community safety	Safety of children or vulnerable groups in terms of proximity to water	<p>The water bodies at the Proposed Development will not be publicly accessible or directly accessible to visitors. Water bodies are included to protect local biodiversity and therefore visitors will not be allowed access.</p>
Built environment	Social cohesion and inclusive design	<p>The Proposed Development is not expected to directly contribute to or detract from the social cohesion of local communities. However, theme parks are designed to attract diverse groups of visitors and are inclusive by nature, aiming to provide entertainment to different demographics.</p> <p>It is the goal to UDX to being diversity, equity and inclusion to life in their theme parks globally with visitors and staff in mind. UDX previously have gone beyond compliance to provide the</p>

Health determinant	Health effect scoped out	Justification
		opportunity to as many people as possible to experience their attractions.
Climate change mitigation and adaptation	Minimising the use of resources	This effect has been scoped out as this effect is covered in both <b>Chapter 12: Water Resources (Volume 1)</b> and <b>Chapter 14: Greenhouse Gases (Volume 1)</b> . The Proposed Development is not expected to cause any health impacts related to minimising the use to resources.
Climate change mitigation and adaptation	Climate change	This effect has been scoped out of this assessment as this ES includes <b>Chapter 15: Climate Resilience (Volume 1)</b> which comprehensively deals with climate change effects and impacts. <b>Chapter 15: Climate Resilience (Volume 1)</b> found no significant effects on people.

## 17.4. METHODOLOGY

### METHOD OF BASELINE DATA COLLATION

#### Desk Based Research

- 17.4.1. The baseline conditions of this assessment have been informed by a variety of publicly available data sources. The baseline data for general population and human health trends is presented first. This is followed by baseline information that is specific to the health effects included in this assessment. Data sources utilised include the Office for National Statistics, Public Health England and NHS Digital.
- 17.4.2. There is no demographic or health information available for future workers. Many of these future workers will be residents of the CSA. Baseline information for residents across the CSA is therefore deemed appropriate to serve as a proxy for the baseline characteristics of future workers at the Proposed Development.

### ASSESSMENT METHODOLOGY

- 17.4.3. There is no UK legislation or statutory guidance for the assessment of Population and Human Health effects. However, there are some well-established guides available, including Determining Significance for Human Health in Environmental Impact Assessment (**Ref. 17.3**) and the Healthy Urban Planning Checklist (**Ref. 17.4**). The assessment utilises, is informed by, and is in line with these guides.
- 17.4.4. Effects are identified from the interaction between the magnitude of impacts and the sensitivity of receptors. Specifically, the assessment of significance of impacts is based on the magnitude of predicted change to the baseline positions, as well as the sensitivity of the health receptors.

### SIGNIFICANCE CRITERIA

#### Sensitive Receptors

- 17.4.5. The sensitivity of receptors considered in this assessment have been defined as high, medium, low, or negligible. In the context of Population and Human Health, the level of sensitivity depends upon the baseline conditions.

17.4.6. Specific values in terms of sensitivity are not attributed to Population and Human Health resources/receptors due to their diverse nature and scale. The assessment takes account of the qualitative ‘sensitivity’ of each receptor. The receptor sensitivity is assessed on a case-by-case basis, using professional judgement. Quantitative data on the relevant health baseline of receptors is presented wherever available, and the sensitivity is determined by comparison to regional and national data. Broad definitions of the receptor sensitivities are given in **Table 17-7**.

**Table 17-7 – Broad Definitions of Sensitivity for Population and Human Health Receptors**

Sensitivity of receptor	Population Human Health
High	High levels of deprivation (including pockets of deprivation); reliance on resources shared (between the population and the Proposed Development; existing wide inequalities between the most and least healthy; health outcomes which are substantially worse than regional or national comparators; a community whose outlook is predominantly anxiety or concern; people who are prevented from undertaking daily activities; dependants; people with very poor health status; and/or people with a very low capacity to adapt.
Medium	Moderate levels of deprivation; few alternatives to shared resources; existing widening inequalities between the most and least healthy; health outcomes which are in line with, or only marginally different to, regional or national comparators; a community whose outlook is predominantly uncertainty with some concern; people who are somewhat limited from undertaking daily activities; people providing or requiring a lot of care; people with poor health status; and/or people with a limited capacity to adapt.
Low	Low levels of deprivation; many alternatives to shared resources; existing narrowing inequalities between the most and least healthy; health outcomes which are similar to regional or national comparators; a community whose outlook is predominantly ambivalence with some concern; people who are slightly limited from undertaking daily activities; people providing or requiring some care; people with fair health status; and/or people with a high capacity to adapt.
Negligible	There is no human health problem.

17.4.7. The extent to which the receptors experience inequalities in health outcomes is also considered in determining receptor sensitivity. Vulnerable population groups include those with higher levels of social deprivation or relatively poor health status. Examples of vulnerable groups and specific points of interest near to the Site are as follows:

- **Age-related groups, such as children and older people:** Wixams retirement village is located approximately 2km from the Site. As the retirement village is catered for over 55 year-olds it has been considered in the assessment of sensitivity;
- **People suffering with long-term illnesses and disabilities** e.g. dementia, autism and epilepsy: Woburn Court Community Health Centre is located 270m north-west of the Site. Residents with long-term health issues or disabilities that require access to this facility have therefore been considered in our assessment of sensitivity;
- **Sex:** Different sexes can face disproportionate health impacts due to biological differences and varying societal roles;

- **Ethnic minority groups:** Ethnic minority groups can face disproportionate health impacts due to a combination of factors including socioeconomic inequalities and limited access to healthcare services; and
- **Income-related groups and socio-economically disadvantaged groups:** Whilst socio-economically disadvantaged groups such as those on lower incomes or the unemployed are not a protected group identified by the Equality Act (which the other vulnerable population groups listed above are), evidence suggests that this group can disproportionately experience poorer health outcomes, and so have the potential to be impacted more acutely by changes to health determinants.

17.4.8. For example, if the air quality baseline found existing poor air quality levels, high numbers of people suffering with long-term illnesses or high number of children, the sensitivity of the population (including vulnerable groups) to the health effect would be high.

### Magnitude of Impact

17.4.9. This entails consideration of the size of the effect on receptors (people), including vulnerable groups, in the context of the area in which effects would be experienced.

17.4.10. This assessment draws upon and summarises, where relevant, the evidence and analysis presented in other technical assessments, highlighting any effects which are relevant to human health. To do this, this assessment establishes pathways to health effects – these determine the relationships between the Proposed Development and potential health impacts on the population and are assessed through a high-level literature review for each health determinant.

17.4.11. Magnitude is assessed as high, medium, low or negligible. The classification of magnitude of impact on receptors takes account of such factors as:

- The spatial scale at which the effect is assessed;
- The frequency of the effect;
- The degree of change relative to existing environmental conditions;
- The reversibility of the effect;
- The duration over which the effect occurs; and
- The strength of evidence over the health pathway.

17.4.12. The assessment of the magnitude of potential impacts aims to quantify the magnitude of impacts wherever possible. Where quantification has not been possible, qualitative assessments (professional judgement) have been made and justified.

### Significance of Effect

17.4.13. **Table 17-8** shows how the magnitude of impact and sensitivity of receptor combine to determine the scale of the effect. The combination of less sensitive and lower magnitude impacts result in minor or negligible effects. Conversely, a more sensitive receptor with a higher magnitude of impact can result in a moderate or major effect. Effects classified as moderate or major are significant. Effects that are deemed significant have been highlighted in bold.

### Table 17-8 – Effect significance matrix

		Magnitude			
		High	Medium	Low	Negligible
Sensitivity	High	Major	Major / moderate	Moderate / minor	Minor / negligible
	Medium	Major / moderate	Moderate	Minor	Minor / negligible
	Low	Moderate / minor	Minor	Minor	Negligible
	Negligible	Minor / negligible	Minor / negligible	Negligible	Negligible

17.4.14. Effects are grouped into two categories:

- Beneficial — these are effects which are deemed to have a positive effect on the receptor and/or study area; and
- Adverse — these are effects that are deemed to have a negative effect on the receptor and/or study area.

17.4.15. Effects can be either temporary or permanent; and, direct or indirect. Generally, impacts during the Construction Phase of the Proposed Development are considered temporary, and impacts during the Operation Phase of the Proposed Development are considered permanent.

17.4.16. Embedded mitigation refers to measures built into the project design from the start to prevent or reduce adverse environmental impacts. Secondary mitigation involves additional actions taken after the project design is finalised to further reduce or offset impacts not fully addressed by embedded measures. Embedded mitigation is referred to and included in the assessment of effects. If the effect does not require secondary mitigation (or none is possible), the residual effect will remain the same. If, however, secondary mitigation is required, an assessment of the post mitigation residual effect is provided. Embedded and secondary mitigation measures can also represent enhancements of positive effects where actions are taken to improve or amplify the beneficial outcomes of the Proposed Development what would naturally occur.

## 17.5. BASELINE CONDITIONS

17.5.1. This section summarises the baseline of health conditions across the relevant study areas of this assessment. This baseline assessment uses a combination of publicly available data and local guidance from relevant local stakeholders.

### CURRENT GENERAL HEALTH AND POPULATION BASELINE

17.5.2. **Table 17-9** illustrates the size of the current populations living in each of the study areas utilised in this assessment.

**Table 17-9 – Population size across study areas (2021)**

Study area	Total population size
Local Area	18,000

Study area	Total population size
CSA	479,000
Bedford	185,000
Central Bedfordshire	294,000
East	6.3m
England	56.5m

Note: figures may not sum due to rounding

17.5.3. Public Health England (PHE) provide a summary Fingertip Health Profile for local authorities across England. The profiles present key population and health statistics. These key population and health statistics are outlined in **Table 17-10**. The CSA is made up of both Bedford and Central Bedfordshire so the key statistics for both local authorities are presented. The summaries for both Bedford and Central Bedfordshire are as follows:

Bedford

- The health of people in Bedford is varied compared with the England average. About 14.9% (4,960) of children live in low-income families. Life expectancy for both men and women is similar to the England average (**Ref. 17.5**); and

Central Bedfordshire

- The health of people in Central Bedfordshire is generally better than the England average. About 11.3% (5,765) of children live in low-income families. Life expectancy for both men and women is higher than the England average (**Ref. 17.6**).

17.5.4. PHE allocate a red, amber, green system to these statistics. Green figures indicate that indicators are significantly better than the national average or the local authorities' target, orange figures indicate that figures are not significantly different to the national average or the local authorities target, and red figures are significantly worse than the national average or the local authorities' target.

**Table 17-10 – PHE Fingertip Health Profiles for Bedford and Central Bedfordshire (2019)**

Group	Indicator	Bedford	Central Bedfordshire	East	England
Life expectancy and causes of death	Life expectancy at birth (male)	79.8	81.0	80.3	79.6
	Life expectancy at birth (female)	83.5	84.3	83.7	83.2
	Under 75 mortality rate from all causes, per 100,000	322.0	283.3	302.1	330.5
	Mortality rate from all cardiovascular disease, per 100,000	70.7	55.4	63.4	71.7

Group	Indicator	Bedford	Central Bedfordshire	East	England
	Mortality rate from cancer, per 100,000	126.5	124.8	126.0	132.3
	Suicide rate, per 100,000	12.1	8.97	9.96	9.64
Injuries and ill health	Killed and seriously injured (KSI) rate on England's roads, per 100,000	44.5	49.5	46.7	42.6
	Emergency hospital admission rate for intentional self-harm, per 100,000	217.4	163.0	173.1	193.4
	Emergency hospital admission rate for hip fractures, per 100,000	559.9	526.1	563.5	558.4
Behavioural risk factors	Hospital admission rate for alcohol-specific conditions, per 100,000	21.2	24.4	23.4	31.6
	Hospital admission rate for alcohol-related conditions, per 100,000	593	586.5	633.6	663.7
	Smoking prevalence in adults (%)	15.3	13.8	14	14.4
	Percentage of physically active adults (%)	63.5	63.4	65.4	66.3
	Percentage of adults classified as overweight or obese	60.9	61.0	62.1	62.0
Child health	Teenage conception rate, per 1,000	21.0	16.0	16.0	17.8
	Percentage of smoking during pregnancy	8.59	8.59	9.68	10.6
	Infant mortality rate, per 100,000	4.11	3.43	3.36	3.93
	Year 6: Prevalence of obesity (including severe obesity) (%)	21.1	14.9	18.0	20.2

Group	Indicator	Bedford	Central Bedfordshire	East	England
Wider determinants of health	Average GCSE attainment (average attainment 8 score) <sup>1</sup>	45.3	45.5	47.0	46.9
	Percentage of people in employment	77.7	83.7	78.4	75.6
	Statutory homelessness rate - eligible homeless people not in priority need, per 1,000	0.34	0.12	0.65	0.79
	Hospital admission rate for violence, per 100,000	58.2	31.9	33.6	44.9
	Excess winter deaths index	24.4	26.8	30.9	30.1
	New sexually transmitted infection diagnoses rate (exc chlamydia aged <25), per 100,000	702.6	460.2	614.9	850.6

17.5.5. Overall, both Bedford and Central Bedfordshire generally perform marginally better than the national averages for most health indicators.

17.5.6. Bedford and Central Bedfordshire perform on par with or better than the national average with respect to life expectancy and both perform well on obesity metrics.

17.5.7. The indicators in which Bedford or Central Bedfordshire experience particularly poor health outcomes in relative to the regional and national averages are as follows:

**Bedford:**

- Emergency hospital admission rate for intentional self-harm, per 100,000;
- Smoking prevalence in adults (%);
- Percentage of physically active adults (%);
- Average GCSE attainment (average attainment 8 score); and
- Hospital admission rate for violence, per 100,000.

**Central Bedfordshire**

- Percentage of physically active adults (%);
- Average GCSE attainment (average attainment 8 score); and
- Killed and seriously injured (KSI) rate on England’s roads, per 100,000.

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<sup>1</sup> Note: The GCSE Attainment 8 score is a measure to assess a student's average performance across eight GCSE subjects. English and math’s are double weighted. The score is calculated by adding the points for each of these eight subjects, with higher scores indicating better overall achievement.

17.5.8. The Local Area of the Proposed Development has a younger population in relation to comparator study areas. **Table 17-11** illustrates the demographic age profiles of the study areas included in this assessment. The Local Area of the Proposed Development has a higher proportion of 0 to 19 year olds (28%) relative to the national rate (23%). The Local Area of the Proposed Development also has a lower proportion of residents aged 65+ (12%) than is recorded across the CSA (18%), regionally (20%), or nationally (18%).

**Table 17-11 – Age demographics across study areas (2021)**

Study area	0-19	20 - 34	35 to 49	50 to 64	65+
<b>Local Area</b>	28% (5,100)	23% (4,000)	22% (3,900)	15% (2,600)	12% (2,200)
<b>CSA</b>	24% (114,000)	18% (89,000)	20% (98,000)	20% (95,000)	18% (84,000)
<b>East</b>	23% (1.5m)	18% (1.2m)	19% (1.2m)	20% (1.2m)	20% (1.2m)
<b>National Area</b>	23% (13.1m)	20% (11.1m)	19% (11.0m)	19% (11.0m)	18% (10.4m)

17.5.9. As illustrated in **Table 17-12**, the proportion of children living in poverty in Bedford (25.4%) and Central Bedfordshire (17.6%) is lower than what is recorded nationally (29.9%). However, the proportion of children living in poverty in Bedford (25.4%) is slightly higher than what is recorded across the East of England (23.0%) (**Ref. 17.7**).

**Table 17-12 – Percentage and absolute number of children living in poverty (2022/23)**

Area	Children living in poverty (% proportion and absolute number)
Bedford	25.4% (11,100)
Central Bedfordshire	17.6% (11,900)
East of England	23.0% (0.3m)
England	29.9% (4.3m)

## FUTURE BASELINE

17.5.10. The future baseline conditions are informed by national trends. Where forecasts are identified, they inform the future baseline. Where forecasts are not identified, the most accurate expectation of future baseline conditions is the continuation of existing trends.

17.5.11. The future baseline is presented for general trends relating to the above general health and population findings. The future baseline is not considered under each effect due to difficulty and uncertainty forecasting relevant baseline findings. Under each effect, the general trends found in this future baseline are considered when concluding a sensitivity.

17.5.12. For construction effects, the current baseline is deemed appropriate as construction is expected to commence imminently.

### LIFE EXPECTANCY

17.5.13. Since 2001, life expectancy for males across the national area has increased from 76.2 to 78.9 in 2022. For females in this time period, life expectancy has increased from 80.7 to 82.8 (Ref. 17.8). Similar trends have been experienced across the CSA, with Bedford’s male life expectancy increasing from 76.9 to 78.6 and female life expectancy increasing from 81.0 to 82.7. Male life expectancy across Central Bedfordshire has increased from 77.1 to 80.3 and female life expectancy has increased from 81.4 to 83.7. Despite these increases in life expectancy, recent years have seen a slowdown in these improvements. This has been more prominent in the UK than elsewhere in Europe, where the UK has been sliding in the life expectancy tables for both males and females.

### GENERAL HEALTH

17.5.14. **Table 17-13** illustrates a comparison between results of the 2011 Census and 2021 Census in regard to the self-reported general health of the population across study areas. There has been a slight increase in the proportion of the population that are in ‘very good health’ across all study areas.

**Table 17-13 – General health of the population across study areas (2011 and 2021)**

General health	2011			2021		
	CSA	East	England	CSA	East	England
Very good health	48%	47%	47%	50%	48%	48%
Good health	36%	35%	34%	35%	35%	34%
Fair health	12%	13%	13%	12%	12%	13%
Bad health	3%	4%	4%	3%	4%	4%
Very bad health	1%	1%	1%	1%	1%	1%

Source: ONS, 2011. Census 2011; ONS, 2021. Census 2021.

### DEMOGRAPHY

17.5.15. The population of the National Area has steadily increased over recent decades, with the populations median age also steadily increasing (Ref. 17.9). These trends are reflected across Bedford and Central Bedfordshire. **Chapter 13: Socio-Economics (Volume 1)** includes a population projection for the CSA, which is included in **Table 17-14** below.

**Table 17-14 – Projected population growth across the CSA (2022 to 2031) (2022 to 2051)**

Area	Population 2023	Projected population 2031	Projected population growth 2022 to 2031	Projected population 2051	Projected population growth 2022 to 2051
CSA	498,000	537,000	8.8%	635,000	27.5%

## LIFESTYLE

17.5.16. Obesity and smoking are among the leading risk factors for ill health and are associated with a range of conditions. Since 2007 there has been an upward trend in adult obesity, but smoking prevalence continues to decline (Ref. 17.10).

## VULNERABLE POPULATION GROUPS

17.5.17. This section summarises the vulnerable population groups present across respective study areas. The proportional population share of vulnerable groups is compared across study areas to determine if certain vulnerable population groups are present in a disproportionate manner in a specific study area. The relative presence of vulnerable population groups for each effect informs the sensitivity of the receptor population.

17.5.18. **Table 17-15** summarises the data on the presence of vulnerable populations within each of the study areas. Where vulnerable population groups are disproportionately represented at a study area the text is in bold.

**Table 17-15 – Identified vulnerable population groups across geographies**

Potential vulnerable group	Local Area	CSA	East	National Area
Younger people (aged 0-19)	<b>17%</b> <b>(5,075)</b>	12% (114,160)	12% (1.5m)	11% (13.1m)
Older people (65+)	12% (2,170)	18% (83,970)	20% (1.2m)	18% (10.4m)
Socioeconomically disadvantaged groups (unemployment rate)	3% (350)	3% (11,160)	3% (154,320)	3% (1.6m)
People with long-term illness or disabilities	12% (2,215)	15% (72,760)	17% (1.1m)	17% (9.8m)
Ethnic minority groups	<b>20%</b> <b>(3,495)</b>	15% (73,755)	14% (856,705)	19% (10.7m)
Religious groups (% of residents identifying as having a religious belief)	53% (9,420)	55% (263,550)	54% (3.4m)	57% (32.4m)
Female	51%	51%	51%	51%

Potential vulnerable group	Local Area	CSA	East	National Area
	(9,100)	(243,000)	(3.1m)	(29m)
Male	49% (8,700)	49% (236,000)	49% (3.1m)	49% (28%)

17.5.19. In addition, baseline research and pre-engagement identified that a Gypsy and Traveller community is located adjacent to the Site. The community currently has 22 pitches, with plans to extend to 24. Most pitches have two adult residents and the community has more than 50 children living in it. Conversations held during pre-engagement revealed that 75% cannot read or write English. This group is considered to be disproportionately represented in the Local Area.

## BASELINE FOR CONSTRUCTION EFFECTS

### DEMAND FOR HEALTH SERVICES

17.5.20. There are 43 General Practitioner (GP) catchment areas that fall more than 50% within the CSA, of which 36 have data available. These GPs have a total patient number of approximately 477,000 patients and a full-time equivalent (FTE) GP number of approximately 230 (Ref. 17.11). This equates to a patient to GP full-time equivalent ratio of approximately 2,070 patients per GP full-time equivalent. This is higher than the benchmark of 1,800 patients to fully qualified GP FTE ratio outlined within the HUDU Planning Contribution Model, suggesting that GP services across the CSA are very constrained (Ref. 17.12).

17.5.21. Throughout the process of engagement for the Proposed Development, relevant health departments from across areas serving the CSA identified that future developments are struggling to provide appropriate health provision due to funding constraints. This further reinforces that health provision is constrained across the CSA.

17.5.22. In February 2025 Bedfordshire Hospitals NHS Foundation Trust had approximately 23,700 accident and emergency admissions (Ref. 17.13).

17.5.23. According to the most recently available data, accident and emergency performance across Bedfordshire has been poor. Bedfordshire Hospitals NHS Foundation Trust saw 72.6% of accident and emergency patients within 4 hours. This compares negatively to the national rate of 73.4%. It is acknowledged that both are below the national target, and that health services are generally considered constrained at a national level.

### Presence of and relevance to vulnerable groups

17.5.24. Regarding demand for healthcare services, older people and people with long term health issues and disabilities are deemed as relevant vulnerable groups. Both older people and people with long-term health issues and disabilities require more frequent medical attention due to higher prevalence of health issues. These groups are disproportionately affected by delays in care, leading to worsened health outcomes (Ref. 17.14).

17.5.25. As demonstrated in **Table 17-15**, none of the relevant vulnerable groups are disproportionately represented at the CSA level.

## Receptor sensitivity

17.5.26. The CSA is judged to have a **high** sensitivity to changes impacting demand for health services. Whilst accident and emergency services across the CSA perform well, GP services are very constrained, and this is expected to only continue or heighten in the future.

## NOISE AND VIBRATION

17.5.27. **Chapter 9: Noise and Vibration (Volume 1)** outlines that nearby the Site of the Proposed Development within the NVAA there are 13 receptors that are deemed to have a high sensitivity. The noise sensitive receptors are outlined in **Table 17-16**. All the sensitive receptors listed are assigned as having a high sensitivity.

**Table 17-16 – Sensitive receptors identified in the NVAA**

Noise Sensitive Receptor Reference	Description	Town/ Village Location	Receptor Category	Approximate No. of Properties
NSR01	Properties along Steele Walk and Lomax Gardens Properties off Folkes Road, Moore Close and Sherwood Close Properties along Harris Way, Waite Meadows, and Stevenson Walk	Wootton	Residential	300
NSR02	Wootton Lower School, Harris Way	Wootton	Educational/School	1
NSR03	Wootton Community Centre, Harris way	Wootton	Community Centre	1
NSR04	Blue Orkids Wootton Nursery, Innovation Way	Wootton	Educational/School	1
NSR05	Individual property east of Woburn Road	Stewartby	Residential	1
NSR06	Farmhouse off Broadmead Road	Stewartby	Residential	1
NSR07	Properties along Brick Crescent	Stewartby	Residential	180

Noise Sensitive Receptor Reference	Description	Town/ Village Location	Receptor Category	Approximate No. of Properties
	(south of the Site boundary)			
NSR08	Properties along Amphill Road (east off B530) Properties along Angelica Grove and Borage Walk (northeast off B530) Properties southwest off B530	Kempston Hardwick	Residential	100
NSR09	Properties to the south of Manor Road	Kempston Hardwick	Residential	5
NSR10	Properties off Manor Road	Kempston Hardwick	Residential	15
NSR11	Properties on the east of B530 Hardwick Hill	Wixams	Residential	2
NSR12	Holiday Inn Express (northeast to the Site boundary)	Bedford	Hospitality/ Hotel	1
NSR13	Property bound by Proposed Development to the east, Manor Road to north and Woburn Road to the west	Stewartby	Residential	1

**Note**

The receptors identified in this table are, for the purposes of this assessment, considered noise sensitive. If in the future any of the identified sensitive receptors are removed or if their use class changes such that they are no longer considered sensitive to noise, the noise limits for which consent is being sought would no longer apply.

### Presence of and relevance to vulnerable groups

- 17.5.28. Certain population groups are more vulnerable to the effects of noise and vibration. Children are particularly susceptible, with persistent noise exposure linked to reduced memory, attention, and reading skills (**Ref. 17.55**). Older people may experience greater impacts due to sleep disturbance and increased cardiovascular risk (**Ref. 17.56**). People with long-term illnesses or disabilities, including mental health conditions or sensory sensitivities, may be more affected by persistent noise (**Ref. 17.57**).
- 17.5.29. In the absence of specific population and health data for the NVAA, it is deemed appropriate to use CSA data as a proxy. None of the above relevant vulnerable groups are disproportionately represented at the CSA level.

### Receptor sensitivity

- 17.5.30. The NVAA is judged to have a **medium** sensitivity to noise and vibration effects. Whilst sensitive receptors are identified within the NVAA, there are not expected to be a disproportionate representation of vulnerable groups within the NVAA.

### AIR QUALITY

- 17.5.31. **Chapter 8: Air Quality (Volume 1)** states that baseline air quality conditions within the AQAA are generally considered to be good and improving. Neither Bedford BC or CBC have highlighted any air quality issues in the immediate vicinity of the Site.
- 17.5.32. The AQAA to the south of Bedford is semi-rural where the main local sources of local pollutants include:
- Road traffic, notably on the A421, A5141, A6 and B530 (along the eastern boundary of the Site) and associated with warehousing and distribution centres, local industry, business, and retail parks;
  - Diesel passenger and freight train traffic on the Midland Main Railway Line (to the east of the Site). (Although the Marston Vale Railway Line operates diesel trains, the traffic is relatively light and is not considered to be a substantial source of air pollution);
  - Industrial sources regulated by the Environment Agency including Rookery South Energy Recovery Facility (approximately 2km to the south-southwest of the Site); and
  - Industrial sources regulated by Bedford BC, including Elstow Benninghoven Asphalt Plant and Elstow Concrete Plant. There are no CBC regulated sources in the study area.
- 17.5.33. The nearest AQMAs are Bedford BC's Bedford Town Centre AQMA at approximately 2.3km to the north on the A5141 Ampthill Road, and CBC's Air Quality Management Area No.3 Ampthill at approximately 5km to the south on the B530. Historically, annual mean NO<sub>2</sub> concentrations have exceeded the air quality standards in these AQMAs. Both Bedford BC and CBC have implemented Air Quality Action Plans to tackle the problems and have reported improving trends within these AQMAs. Monitored concentrations in 2022 met the annual and 1-hour mean air quality standards.
- 17.5.34. Within Bedford, the main local sources of air pollutants include road traffic, domestic, commercial, and industrial combustion (generally natural gas fired boilers used for space heating and hot water provision, but also domestic open fires and log burners). Diesel passenger and freight train traffic on the Midland Main Railway Line is a relatively minor source of air pollutants. The Bedford Town Centre AQMA was declared due to high NO<sub>x</sub> emissions primarily from road vehicles along congested narrow streets. A notable hotspot is Prebend Street between Commercial Road and

Midland Road which has experienced the highest concentrations exceeding the air quality standard for annual mean NO<sub>2</sub> in recent years (although meeting the standard in 2022).

- 17.5.35. Bedford BC does not undertake any reference (or equivalent) monitoring of PM<sub>10</sub> and/or PM<sub>2.5</sub>. However, in 2022, it collected indicative data using Earthsense Zephyr sensors at two locations on Amphill Road. During 2022, these two sensors monitored annual mean PM<sub>10</sub> concentrations of 11.6µg/m<sup>3</sup> and 12.9µg/m<sup>3</sup>, and annual mean PM<sub>2.5</sub> concentrations of 7.9µg/m<sup>3</sup> and 8.5µg/m<sup>3</sup>. These concentrations are below the 2030 Defra background concentrations.
- 17.5.36. **Chapter 8: Air Quality (Volume 1)** outlines numerous sensitive receptors within the AQAA. There are 227 high sensitivity residential premises and one school to dust emissions. 98 high sensitivity human receptors are identified in regards to road traffic emissions.

#### **Presence of and relevance to vulnerable groups**

- 17.5.37. Children's lungs and higher breathing rates make them especially vulnerable to air pollution, leading to conditions like asthma and impaired lung functions (**Ref. 17.52**). Older people face increased risks from changes in the levels of air pollution. They are more likely to have health issues that can worsen with exposure to poor air quality, such as heart disease (**Ref. 17.53**). Those with long-term health issues and disabilities are particularly susceptible to air pollution, which can exacerbate many pre-existing health issues (**Ref. 17.54**).
- 17.5.38. In the absence of specific population and health data for the AQAA, it is deemed appropriate to use CSA data as a proxy. None of the above relevant vulnerable groups are disproportionately represented at the CSA level.

#### **Receptor sensitivity**

- 17.5.39. The AQAA is judged to have a **high** sensitivity to changes in air quality. Air quality is considered to be good and improving. However, there are numerous highly sensitive receptors across the AQAA which enhance the receptor sensitivity.

#### **CHANGES TO LOCAL TRAFFIC**

- 17.5.40. The Local Area is characterised by a strong road network. The principal road route is the A421 which joins the A6 to the north and forms a major road corridor to the south of Kempston and which, along with the local distributor road (Bedford Road) forms a substantial physical barrier with the Site to the south.
- 17.5.41. Public engagement found that improving the local road network was important to local people. Refer to the **Public Engagement Report (Document Reference 6.05.0)** for more detail. Specifically, when asked what infrastructure improvements delivered as part of the Proposed Development were most important, 81% of the public surveyed stated improving the local road network as the most important infrastructure upgrade. This illustrates the importance of a good local road network for residents of the Local Area, many of whom live in villages that are reliant on access to the A421.

#### **Presence of and relevance to vulnerable groups**

- 17.5.42. Younger people, older people, and people of disadvantaged socioeconomic backgrounds are particularly vulnerable to changes in levels of local traffic. The increased danger from traffic accidents is a significant concern as children are less aware of and more susceptible to traffic hazards (**Ref. 17.15**). Older people can experience heightened stress when navigating busier roads. They also often face mobility challenges, limiting their access to essential services (**Ref. 17.16**).

Socioeconomically disadvantaged groups are more likely to live in areas with higher traffic density, increasing their exposure to traffic-related accidents (**Ref. 17.17**).

17.5.43. Younger people are disproportionately represented at the Local Area level.

#### **Receptor sensitivity**

17.5.44. The Local Area of the Proposed Development is judged to have a **medium** sensitivity to changes to local traffic. The Local Area has access to important road routes, however, would be vulnerable if access to the A421 was constrained.

### **CHANGES TO LOCAL PUBLIC TRANSPORT AND ACTIVE TRAVEL**

17.5.45. There are two railway lines which extend across the Study Area from north to south. They are the Midlands Main Railway Line and Marston Vale Railway Line. The Marston Vale Railway Line intersects the Site and extends the entire western perimeter of the Core and Lake Zones.

17.5.46. In a process of public engagement, improvement to the local rail network was voted the second most important infrastructure upgrade that could potentially be delivered by the Proposed Development, after upgrades to the local road network. This indicates a real local appetite for improvement to the local public transport network and connectivity more generally.

17.5.47. There are three public rights of way (PRoWs) crossing the Site. These are:

- PRoW 1 links up the eastern end of Manor Road to the C94 Woburn Road just south of the CP Farm site. This PRoW crosses the Marston Vale Railway Line at a footpath level crossing near the centre of the Site (Wootton Village level crossing);
- PRoW 2 runs in a north-south direction between PRoW 1 and Broadmead Farm, linking back to Broadmead Road; and
- PRoW A1/8 runs along the northern boundary of the site connecting the B530 Ampthill Road to the Woburn Road Industrial Park, under the A421(T) and across the Marston Vale Railway Line.

17.5.48. Additionally, there are four further PRoWs within the Local Area, which are:

- Kempston Urban A1 (footpath) – 180m north of the Site;
- Wootton 49 (bridleway) – 240m south-west of Site;
- Wootton 1 (footpath) – 255m south-west of the Site; and
- Kempston Urban 1 (footpath) – 280m north of the Site.

17.5.49. Visits to the PRoWs that intersect the Site has shown that they are either in bad condition, not fit for purpose, or have blocked access in some parts.

17.5.50. Of those suspected to be open, usage statistics are not known at this time. However, based on current conditions of these PRoWs, it is assumed that usage is low.

17.5.51. There are three local cycle routes which pass within the Local Area, however there are no National Cycle Network routes or National Trails (typically long-distance routes of regional and national importance). The closest National Cycle Network route; a link route associated with National Cycle Route 51, lies approximately 1.4km south-west of the Site.

### Presence of and relevance to vulnerable groups

17.5.52. The following population groups are vulnerable to changes to local public transport and active travel:

- Younger people;
- Older people;
- Those with long term health issues and disabilities; and
- Those from disadvantaged socioeconomic backgrounds.

17.5.53. Safe and accessible routes for walking or cycling are crucial for children's physical activity, while older adults, those with long-term health issues, and people from socioeconomically disadvantaged backgrounds depend heavily on reliable public transport (**Ref. 17.18**). Reductions in these services can lead to isolation for older adults, difficulties in accessing healthcare for those with disabilities, and limited access to employment, education, and healthcare for disadvantaged groups, highlighting the critical need for sufficient active travel and public transport options (**Ref. 17.19**).

17.5.54. Out of the relevant vulnerable groups identified, younger people are the only vulnerable group that are disproportionately represented across the Local Area.

### Receptor sensitivity

17.5.55. There are a variety of local active travel routes nearby the Site and local residents have illustrated how important they deem upgrades to local public transport. The Local Area is therefore judged to have a **medium** sensitivity to changes to local public transport and active travel.

### PRESENCE OF CONSTRUCTION WORKFORCE

17.5.56. As illustrated in **Table 17-17**, across the Local Area of the Proposed Development approximately 710 employees work in the construction industry, equating to 5.2% of all employment. This is higher than the proportion of overall employment made up by the construction industry across the National Area.

**Table 17-17 – Construction employment as a proportion of total employment across study areas and absolute number of construction employment across study areas (2023)**

Study area	Proportion of workforce employed in construction (2023)	Number of construction workers (2023)
Local Area	5.2%	710
CSA	6.1%	12,000
East	6.2%	184,000
National Area	4.8%	1.4m

17.5.57. In the Local Area of the Proposed Development, the construction workforce working in the area represents 4.0% of the total resident population (**Table 17-18**). This is higher than the rate recorded across comparator geographies. The construction workforce as a proportion of the total resident population across the CSA is equivalent to 2.5%, this is higher than the national proportion, however lower than the proportion recorded across the East of England.

**Table 17-18 – Construction workforce as a proportion of total resident population across geographies**

Study area	Construction workforce as a proportion of resident population
Local Area	4.0%
CSA	2.5%
East	2.9%
National Area	2.4%

Source: ONS, 2022. Business Register and Employment Survey; ONS, 2021. Census 2021

Note: despite construction employment being dated 2023, 2021 population from the 2021 Census is used as the most accurate source for total resident population.

- 17.5.58. Both Bedford and Central Bedfordshire perform broadly in line with the national rate regarding feelings of life satisfaction, happiness, and anxiety (**Table 17-19**). In the absence of available data at the Local Area level, it is assumed trends are reflective of the Local Area.
- 17.5.59. **Table 17-10** illustrates that Bedford has a higher suicide rate per 100,000 of the population and a higher emergency hospital admission rate for intentional self-harm per 100,000 than comparator geographies. This may be reflective of heightened rates of depression or mental health disorders. In the absence of available data at the Local Area level, it is conservatively assumed trends are reflective of the Local Area.
- 17.5.60. There is no further data available to suggest that the Local Area is particularly sensitive in this regard.

**Table 17-19 – Self reported mean feeling of emotions 0 (not at all) – 10 (completely)**

Metric	Bedford	Central Bedfordshire	East	National Area
Life satisfaction	7.5	7.3	7.5	7.4
Happiness	7.6	7.3	7.4	7.4
Anxiety	3.4	3.2	3.2	3.2

**Presence of and relevance to vulnerable groups**

- 17.5.61. Younger people and ethnic minority groups are particularly vulnerable to the presence of a major construction workforce. The noise, machinery and several unfamiliar adults can lead to children feeling intimidated and scared, disrupting their sense of safety (**Ref. 17.20**). Research has found that minorities may feel intimidated by predominantly white male construction workforces (**Ref. 17.21**).
- 17.5.62. Both younger people and ethnic minority groups are disproportionately represented at the Local Area level, increasing the sensitivity of the Local Area.

### Receptor sensitivity

17.5.1. The Local Area is judged to have a **low** sensitivity to changes in the presence of a construction workforce. There is already a large construction workforce in the Local Area relative to the size of the residential population, suggesting residents are used to the presence of a construction workforce.

### ACCESS TO EMPLOYMENT AND TRAINING OPPORTUNITIES

17.5.2. The **Employment and Skills Plan (Document Reference 6.12.0)** details the specific performance, priorities and objectives of local residents with respect to skills and how the Proposed Development could contribute. As a summary, the main skills priorities for residents of the CSA are broken down into three main themes:

- Educational attainment for younger people;
- Facilitating the future workforce with skills required in growth sectors; and
- Pathways for those in need.

17.5.3. Residents of the CSA perform in line with national rates when it comes to qualifications. The largest divergence from what is recorded nationally in the CSA is that a slightly lower proportion of residents from the CSA (16%) have no qualifications compared to 18% nationally.

17.5.4. Across the CSA, residents that have no qualifications have a higher unemployment rate and economic activity rate than residents with higher levels of qualifications (**Table 17-20**).

**Table 17-20 – Unemployment rate and economic activity rate by level of qualification (CSA) (2021)**

Level of qualification	Unemployment rate	Economic activity rate
No qualifications	7.0%	31.2%
Level 1 and entry level qualifications	6.2%	17.1%
Level 2 qualifications	4.5%	11.3%
Apprenticeships	3.2%	21.1%
Level 3 qualifications	3.1%	9.0%
Level 4 qualifications	2.7%	10.3%
Other qualifications	4.3%	24.8%

17.5.5. **Table 17-21** displays the proportion of workers who have achieved each level of qualification in the construction industry across the CSA from the 2021 Census. Workers in the construction industry have achieved the highest qualification level (level 4 qualifications and above) at a lower rate than the average across all industries, nine percentage points behind the rate across all industries. This is partially balanced by an increased prevalence of apprentice-based and other forms of qualifications.

**Table 17-21 – Highest level of qualification for construction workers compared to the remainder of the population across the CSA (2021)**

Qualification	CSA	
	All industries	Construction
No qualifications	16%	10%
Level 1 qualifications	10%	11%
Level 2 qualifications	14%	15%
Level 3 qualifications	17%	24%
Level 4 qualifications and above	34%	25%
Apprenticeships and other qualifications	8%	15%

- 17.5.6. As reported by the Construction Industry Training Board (CITB), professional occupations are rising as a proportion of the construction workforce and are likely to keep rising across the near future (**Ref. 17.22**). These occupations, which include roles such as architects and civil engineers, are likely to require Level 4 qualifications or above, and so the distribution is likely to shift over time.
- 17.5.7. The CSA delivers a significant proportion of construction apprenticeships. Construction apprenticeships made up 24.6% of all apprenticeships across the CSA in 2021/22, comparing to 8.0% of apprenticeships across the National Area (**Ref. 17.23**). The significant provision of construction apprenticeships is particularly clear in the context of per 100,000 of the population, whereby across the CSA there are 57.3 construction apprenticeships per 100,000 population, compared 20.6 across the National Area. When put in the context of per 100,000 construction workers, the CSA has a construction apprenticeship start rate of 11.1 per 100,000 construction workers. This compares positively compared to a rate of 5.2 across the National Area.
- 17.5.8. As illustrated in **Table 17-22**, across Bedford and Central Bedfordshire, there is a lower proportion of schools that are rated as good or outstanding by Ofsted than there is across geographical comparators. The proportion of schools in Bedford that are rated good or outstanding is 7 percentage points lower than the proportion across the East of England, and 8 percentage points lower than the national rate. Across Central Bedfordshire, this gap is 4 percentage points compared to the East of England and 5 percentage points compared to the national rate.

**Table 17-22 – Percentage of schools rated good or outstanding by Ofsted (2024)**

Area	Percentage of schools good or outstanding (%)
Bedford	82
Central Bedfordshire	85
East	89
England	90

17.5.9. The construction industry in the UK faces a significant mental health crisis. Workers in this sector are almost four times more likely to die by suicide than those in other industries (**Ref. 17.24**). In 2021 workers in the construction industry committed suicide at a rate of two workers per day. The predominantly male environment in construction can discourage open discussions about mental health, perpetuating stigma and preventing workers from seeking help. High job insecurity, intense workloads and prolonged time spent away from families are also deemed contributing factors.

#### **Presence of and relevance to vulnerable groups**

17.5.10. Individuals from disadvantaged socioeconomic backgrounds are particularly vulnerable to changes in access to employment and training opportunities. These individuals often face barriers such as limited access to quality education and fewer job prospects. Reductions in these opportunities can deepen existing inequalities and limit upward mobility, leading to negative health outcomes (**Ref. 17.25**).

17.5.11. Ethnic minority groups often face significant challenges in employment due to persistent discrimination and bias. Research shows that hiring discrimination against ethnic minorities has remained largely unchanged for decades, despite legal frameworks designed to prevent it (**Ref. 17.26**).

17.5.12. Gender bias can limit women's access to new employment opportunities, particularly in male-dominated industries. Even when women are qualified, they may be passed over for jobs or promotions due to stereotypes about their abilities or commitment to their careers, they are also more likely to take on the burden of care and remain at home (**Ref. 17.27**).

17.5.13. None of the identified relevant vulnerable groups are disproportionately represented at the CSA level.

#### **Receptor sensitivity**

17.5.14. The CSA is judged to have a **medium** sensitivity to changes in employment and training opportunities. The CSA performs in line with national rates for qualification outcomes. There is very strong take up of construction apprenticeships across the CSA. However, there is a lower proportion of schools across Bedford and Central Bedfordshire rated good or outstanding by Ofsted.

## **BASELINE FOR OPERATIONAL EFFECTS**

### **EFFECT ON COMMUNITY FROM NEW SPORT PROVISION**

#### **Current baseline**

17.5.15. As illustrated in **Table 17-10**, the proportion of adults across both Bedford and Central Bedfordshire that are physically active is below the national rate.

17.5.16. However, **Table 17-10** also indicates that in comparison to national rates, Central Bedfordshire perform well in metrics related to both adult and child obesity rates. Whilst Bedford performs well relative to the national rate for adult obesity metrics, it performs marginally worse than the national rate with regard to child obesity.

17.5.17. The Bedford Playing Pitch Strategy 2021 outlines the need to ensure adequate facilities to meet current demand (**Ref. 17.28**). There are noted shortfalls with regards to football grass pitches and 3G pitches. There is also an insufficient supply of cricket pitches. It is noted that more provision is required to meet the demands of projected population growth.

- 17.5.18. The Central Bedfordshire Playing Pitch Strategy states that there are inadequacies in the current provision of sports facilities as they are not sufficient to meet current demand (**Ref. 17.29**).
- 17.5.19. As illustrated in **Table 17-23**, both Bedford and Central Bedfordshire have a hospital admission rate related to obesity per 100,000 of the population that is higher than the national rate. This issue is particularly acute for the female population in Central Bedfordshire.

**Table 17-23 – Hospital admission rate related to obesity per 100,000 across study areas for all persons, males, and females (2022/23)**

Study area	All persons - hospital admission related to obesity per 100,000 population	Male - hospital admission related to obesity per 100,000 population	Female - hospital admission related to obesity per 100,000 population
Bedford	17	9	25
Central Bedfordshire	19	7	31
East	12	6	17
England	16	7	24

#### Presence of and relevance to vulnerable groups

- 17.5.20. Younger people and people with long term health issues and disabilities are particularly sensitive regarding the effect on the community from new sports provision. New sports facilities can enhance youth engagement in physical activity, promoting healthier lifestyles (**Ref. 17.30**). Accessible sports facilities significantly benefit individuals with disabilities, offering opportunities for physical activity that improve health and quality of life (**Ref. 17.31**).
- 17.5.21. None of the identified relevant vulnerable groups are disproportionately represented at the CSA level.

#### Future baseline

- 17.5.22. Outcomes related to obesity and engagement in physical activity can fluctuate quickly. Therefore, the current baseline is deemed appropriate to assess this effect against.

#### Receptor sensitivity

- 17.5.23. The CSA is judged to have a **medium** sensitivity regarding the effect on community from new sport provision in both 2031 and 2051. Both Bedford and Central Bedfordshire have lower adult physical activity rates compared to the national rate. Central Bedfordshire has better obesity metrics for both adults and children compared to national rates. However, Bedford performs well for adult obesity but slightly worse for child obesity. There are lower rates of obesity related hospital admissions across the CSA relative to the national rate.

### DEMAND FOR HEALTH SERVICES

#### Current baseline

- 17.5.24. The current baseline for demand for health services is outlined in the **baseline for construction effects**.

### **Future baseline**

- 17.5.25. As illustrated in Paragraph 17.5.13 and Paragraph 17.5.15, strong population growth and an increase in life expectancy is expected in the periods up to 2031 and 2051. These trends will increase the demand for health services. It is assumed that much of this growth will be planned for by local healthcare providers and local planning authorities.
- 17.5.26. However, population growth driven by developments, or simply the increase in the number of commercial businesses operating as a result of commercial developments, will ultimately increase tax revenue collected by councils. This should help to increase resources at the locations where there is more demand, alleviating the impact of developments.

### **Presence of and relevance to vulnerable groups**

- 17.5.27. The relevant vulnerable groups identified under this effect are those outlined in Paragraph 17.5.24. Vulnerable groups include:
- Older people; and
  - People with long term health issues and disabilities.
- 17.5.28. None of the relevant vulnerable groups are disproportionately represented at the CSA level.

### **Receptor sensitivity**

- 17.5.29. The CSA is judged to have a **high** sensitivity to changes impacting demand for healthcare services in both 2031 and 2051. Whilst accident and emergency services across the CSA perform well, GP services are very constrained, and this is expected to only continue or heighten in the future.

## **NOISE AND VIBRATION**

### **Current baseline**

- 17.5.30. The baseline conditions for the NVAA in the operational phase remain the same as those presented in the construction phase.

### **Future baseline**

- 17.5.31. Conservative assumptions have been made when determining representative noise conditions at sensitive receptors. Any changes to the future noise baseline are not expected to significantly change the outcomes of the construction activity and operational noise assessments in this chapter.
- 17.5.32. The relevant changes in future baseline road traffic flows (e.g. due to other committed developments) have been factored into the traffic flows used in the noise assessment.
- 17.5.33. However, in 2031 and 2051 there is still expected to be numerous high sensitivity receptors within the NVAA.

### **Presence of and relevance to vulnerable groups**

- 17.5.34. The relevant vulnerable groups identified under this effect are those outlined in Paragraph 17.5.28. Vulnerable groups include:
- Younger people;
  - Older people; and
  - People with long term health issues and disabilities.

17.5.35. In the absence of specific population and health data for the NVAA, it is deemed appropriate to use CSA data as a proxy. None of the above relevant vulnerable groups are disproportionately represented at the CSA level.

#### **Receptor sensitivity**

17.5.36. The NVAA is judged to have a **medium** sensitivity to changes in noise and vibration in both 2031 and 2051 in relation to health outcomes. There are still expected to be sensitive receptors across the NVAA. However, there is not a disproportionate representation of vulnerable groups in the NVAA.

### **AIR QUALITY**

#### **Current baseline**

17.5.37. The current baseline for air quality is outlined in the **baseline for construction effects**.

#### **Future baseline**

17.5.38. As stated in **Chapter 8: Air Quality (Volume 1)**, at worst, future baseline air quality conditions will be similar to existing conditions. More likely, baseline air quality conditions will be better than at present, primarily due to increasing proportions of low and ultra-low/zero emissions vehicles within the local vehicle fleet. Expected emissions reductions of NO<sub>x</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> across all sectors (transport, housing, industry, etc.) are reflected in Defra's predictions for background pollutant concentrations up to and including the year 2030. By 2030, background concentrations of PM<sub>2.5</sub> are expected to meet the Government's interim (non-statutory) target of 12µg/m<sup>3</sup> within the study area.

17.5.39. However, in 2031 and 2051 there is still expected to be numerous highly sensitive receptors within the AQAA, which enhance the sensitivity of this receptor.

#### **Presence of and relevance to vulnerable groups**

17.5.40. The relevant vulnerable groups identified under this effect are those outlined in Paragraph 17.5.37. Vulnerable groups include:

- Younger people;
- Older people; and
- People with long term health issues and disabilities.

17.5.41. In the absence of specific population and health data for the AQAA, it is deemed appropriate to use CSA data as a proxy. None of the above relevant vulnerable groups are disproportionately represented at the CSA level.

#### **Receptor sensitivity**

17.5.42. The AQAA is judged to have a **high** sensitivity to changes in air quality in both 2031 and 2051. Air Quality is expected to improve. However, there are still expected to be numerous highly sensitive receptors across the AQAA which enhance the receptor sensitivity.

### **CHANGES TO LOCAL TRAFFIC**

#### **Current baseline**

17.5.43. The current baseline for changes to local traffic is outlined in the **baseline for construction effects**.

## Future baseline

### Theme Park Opening Year

- 17.5.44. A description of key infrastructure projects and changes to the future baseline arising up to the Theme Park Opening Year of the Proposed Development (2031) as outlined in **Chapter 5: Traffic and Transport (Volume 1)** is as follows.
- 17.5.45. The Black Cat improvement scheme involves the construction of a new 10-mile dual carriageway connecting the Black Cat roundabout to the Caxton Gibbet roundabout. Key features include a three-tier junction at Black Cat roundabout for free-flowing A1 traffic, new junctions at Caxton Gibbet and Cambridge Road, multiple new bridges over the carriageway and key waterways, and safer alternative access to local roads. The scheme is fully funded and expected to be completed by 2027.
- 17.5.46. The M1 Junction 13 is currently congested during peak hours and is being investigated by the Department for Transport and National Highways regarding potential capacity improvements. It is not known at this stage precisely what these improvements entail, but there is a reasonable prospect that future improvements will come forward that will improve the performance of the wider transport network.
- 17.5.47. Wixams East Station recently received planning approval, is fully funded, and construction has commenced. The station will significantly enhance local and national rail connectivity.

### Future year

- 17.5.48. A description of key infrastructure projects and changes up to the Future Year, without the Proposed Development coming forward are provided below.
- 17.5.49. A description of key infrastructure projects and changes to the future baseline arising up to the Future Year of the Proposed Development (2051) as outlined in **Chapter 5: Traffic and Transport (Volume 1)** is as follows.
- 17.5.50. The East West Rail (EWR) project is a Nationally Significant Infrastructure Project aimed at connecting Oxford to Cambridge by rail. The EWR line is expected to be completed from Oxford to Bedford by 2030, with further extensions planned.
- 17.5.51. Network Rail plans to replace the Kempston Hardwick level crossing with a new highway bridge by the end of 2026. This bridge will facilitate uninterrupted traffic flow along Manor Road, eliminating delays caused by the current level crossing.

## Presence of and relevance to vulnerable groups

- 17.5.52. The relevant vulnerable groups identified under this effect are those outlined in Paragraph 17.5.42. These vulnerable groups include:
- Younger people;
  - Older people; and
  - People of disadvantaged socioeconomic backgrounds.
- 17.5.53. Younger people have been identified as being a vulnerable group that are particularly vulnerable to changes in levels of traffic and are disproportionately represented at the Local Area level.

### Receptor sensitivity

17.5.54. The Local Area of the Proposed Development is judged to have a **medium** sensitivity to changes to local traffic in both 2031 and 2051. The Local Area has access to important road routes, however, would be vulnerable if access to the A421 was constrained.

## CHANGES TO LOCAL PUBLIC TRANSPORT AND ACTIVE TRAVEL

### Current baseline

17.5.55. The current baseline for changes to local public transport and active travel is outlined in the **baseline for construction effects**.

### Future baseline

17.5.56. A description of key infrastructure projects and changes up to the Future Year, without the Proposed Development coming forward are provided below as outlined by **Chapter 5: Traffic and Transport (Volume 1)**.

#### Future year

17.5.57. EWR is a major national infrastructure project aiming to connect Oxford and Cambridge to support growth across the Ox-Cam Arc. Sections between Oxford and Milton Keynes are expected to be operational by the Theme Park Opening Year. While the Proposed Development does not rely on further EWR phases or a new station, it safeguards land for a potential station and allows for its construction (See **Chapter 3: Approach to EIA** for explanation as to how the EIA has addressed EWR). Additionally, Network Rail has committed to replacing the Kempston Hardwick level crossing with a new highway bridge, which the Proposed Development will integrate with, alongside assessments of local road and non-motorised user impacts.

### Presence of and relevance to vulnerable groups

17.5.58. The relevant vulnerable groups identified under this effect are those outlined in Paragraph 17.5.52 and Paragraph 17.5.53. These vulnerable groups include:

- Younger people;
- Older people;
- Those with long term health issues and disabilities; and
- Those from disadvantaged socioeconomic backgrounds.

17.5.59. Out of the relevant vulnerable groups identified, younger people are the only vulnerable group that are disproportionately represented across the Local Area.

### Receptor sensitivity

17.5.60. The Local Area is judged to have a **medium** sensitivity to changes to local public transport and active travel in both 2031 and 2051. There are a variety of local active travel routes nearby the Site and local residents have illustrated how important they deem upgrades to local public transport.

## ACCESS TO HEALTHY AND UNHEALTHY FOOD

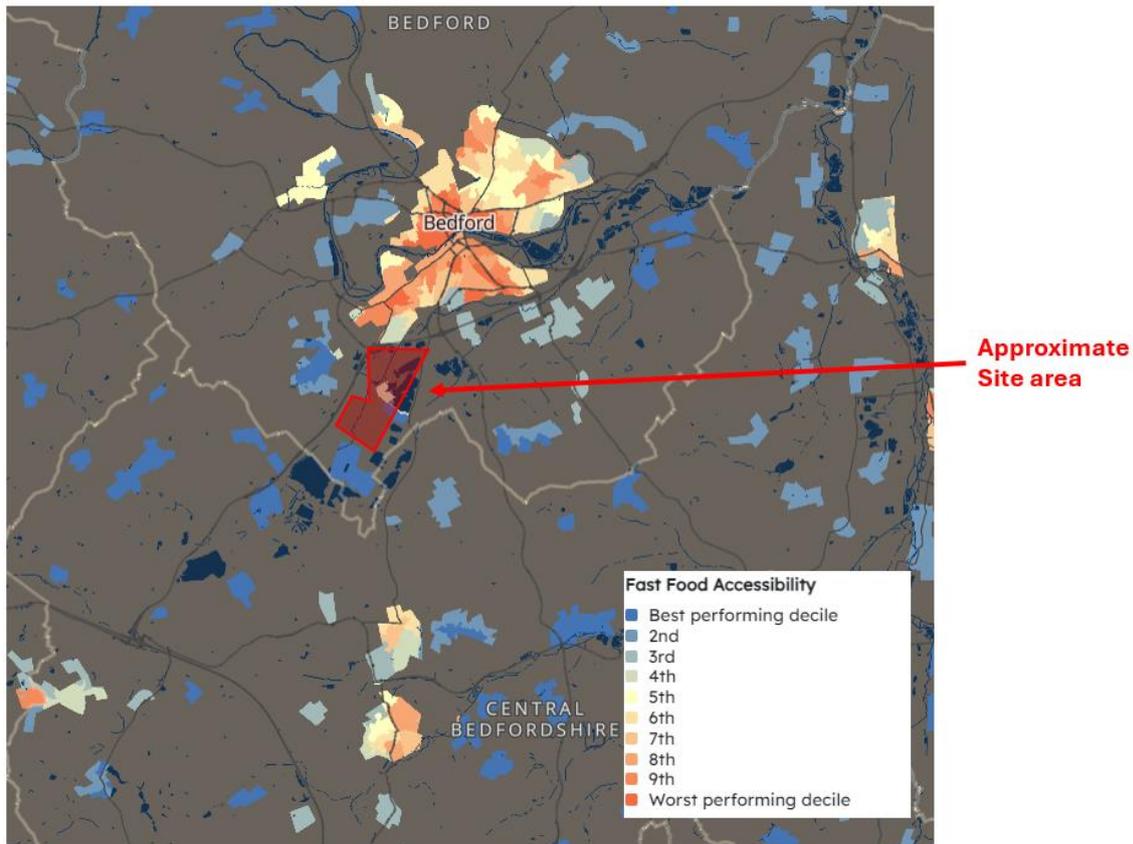
### Current baseline

17.5.61. The baseline findings across the CSA regarding the effect on community from new sport provision are also deemed appropriate baseline findings regarding access to healthy and unhealthy food. In summary:

- Physical Activity: Both Bedford and Central Bedfordshire have lower adult physical activity levels compared to the national rate;
- Obesity Metrics: Central Bedfordshire has better obesity metrics for both adults and children compared to national rates. Bedford performs well for adult obesity but slightly worse for child obesity; and
- Hospital Admissions Related to Obesity: Bedford and Central Bedfordshire have lower overall obesity-related hospital admission rates than the national average. However, Bedford's male admission rate is slightly higher than the national rate.

17.5.62. The National Planning Policy Framework (**Ref 17.60**) states that local planning authorities should refuse planning applications for hot food takeaways and fast food outlets that are within walking distance of schools and other places where children and young people congregate or in locations where there is evidence that a concentration of such uses is having a adverse impact on local health.

17.5.63. **Figure 17.3** illustrates the Fast Food Accessibility decile of the Access to Healthy Assets & Hazards Index. Whilst specific quantified data is not available it is clear that some LSOAs within Bedford perform in the 8<sup>th</sup> to 10<sup>th</sup> worst performing deciles nationally. The 10<sup>th</sup> decile represents the worst performing decile nationally. Apart from the centre of Bedford, the remainder of Bedford and Central Bedfordshire perform well. This includes where the Site is located.



**Figure 17.3 – Access to Healthy Assets & Hazards Fast food Accessibility Index**

Source: CDRC, 2024. Access to Healthy Assets & Hazards (AHAH)

### Future baseline

17.5.64. It is not possible to present a future baseline for access to healthy and unhealthy food. General societal trends are moving towards more understanding of the importance of healthy eating and healthy lifestyles which may positively impact the future baseline but in order to be cautious worst case the assessment relies upon the current baseline (**Ref. 17.32**). Therefore, the current baseline is utilised for this assessment in 2031 and 2051.

### Presence of and relevance to vulnerable groups

17.5.65. Younger people, people with long term health issues and disabilities, and people from disadvantaged socioeconomic backgrounds are particularly sensitive to changes in access to healthy and unhealthy food. Wider literature suggests access to healthy food can have a significant impact on a wide range of vulnerable groups. Low-income neighbourhoods often lack access to grocery stores and other sources of fresh, healthy food, leading to higher rates of obesity and diet-related diseases. This is sometimes referred to as a "food desert." Individuals with chronic health conditions such as diabetes, heart disease, and obesity often require a specific diet to manage their condition, exacerbating need for healthy food access. Access to healthy food is particularly important for children, as their bodies are developing and require proper nutrition to support growth and development.

17.5.66. However, none of the relevant vulnerable groups identified are disproportionately represented at the CSA level.

### Receptor sensitivity

17.5.67. The CSA is judged to have a **medium** sensitivity to changes in access to healthy and unhealthy food in both 2031 and 2051. Both Bedford and Central Bedfordshire have lower adult physical activity rates compared to the national rate. Central Bedfordshire has better obesity metrics for both adults and children compared to national rates. However, Bedford performs well for adult obesity but slightly worse for child obesity. There are lower rates of obesity related hospital admissions across the CSA relative to the national rate. There is no evidence of an oversaturation of unhealthy food outlets nearby the Site or across the CSA.

## ACCESS TO EMPLOYMENT AND TRAINING OPPORTUNITIES

### Current baseline

17.5.68. In 2023, the CSA had a total population of approximately 498,000, increasing by 15% since 2014, higher than any comparators, much faster than the national rate of 6% (**Ref. 17.33**).

17.5.69. Also, employment growth across the CSA between 2015 and 2023 has been 14%, higher than the national rate of 9% (**Ref. 17.34**).

17.5.70. As outlined in **Table 17-15**, the unemployment rate across the CSA of 3% is in line with regional and national rates.

17.5.71. **Table 17-24** illustrates that the claimant count (the stock of Universal Credit and Job Seekers Allowance) as a proportion of residents aged 16 to 64 across Bedford is higher than comparator study areas. However, Central Bedfordshire performs well with a low proportion of claimants.

**Table 17-24 – Total claimant count and claimants as a proportion of residents aged 16 to 64 across Study areas**

Study area	Total claimant count	Claimants as a proportion of residents aged 16 to 64
Central Bedfordshire	5,125	2.7%
Bedford	5,540	4.7%
East	136,000	3.5%
England	1.6m	4.4%

17.5.72. As illustrated in **Table 17-25**, across the CSA there is an identified shortfall in KS2 educational attainment relative to geographical comparators. In the CSA 25.1% of KS2 students do not meet their expected level of attainment compared to 21.0% across the East of England and 21.8% nationally. There is a requirement for educational outcomes at KS2 level to improve across the CSA to catch up with national levels to make sure that no generation is left behind.

**Table 17-25 – Percentage of students that do not meet expected KS2 attainment (%) (2023/24)**

Area	Percentage of KS2 students that do not meet expected attainment (%)
CSA	25.1
National Area	21.0

17.5.73. Across the CSA there is evidence that the level of income is correlated with attainment. Students eligible for free school meals (FSMs) in both areas perform worse in GCSE English and Maths than students not eligible for FSMs, particularly in Central Bedfordshire.<sup>2</sup>

17.5.74. The gap in the pass rate of those who are eligible for FSMs and those that are not is larger in both Bedford and Central Bedfordshire than the national rate. Across Central Bedfordshire this gap is particularly significant, with only 40% of children that are eligible for FSMs passing GCSE English and only 42% passing GCSE Maths, compared to pass rates of 74% and 76% for children that are not eligible for FSMs. This creates a 30 percentage point gap in GCSE attainment and a 34 percentage point gap in GCSE Maths attainment in Central Bedfordshire between children that are eligible for FSMs and children that are not eligible for FSMs. This compares poorly to a national attainment gap of 25 percentage points for GCSE English and a 27 percentage point gap for GCSE Maths.

17.5.75. In 2022, the apprenticeship start rate per 100,000 population across the CSA was 611. This is higher than the National rate (590). When put in the context of per 100,000 workers, the apprenticeship start rate across the CSA was approximately 1,280, compared to a rate across the National Area of 1,320.

#### Future baseline

17.5.76. There are no forecasts for resident qualifications, attendance or performance or educational institutions, worker incomes and apprenticeship starts and completions available and so the effect is assessed against the current baseline.

#### Presence of and Relevance to Vulnerable Groups

17.5.77. The relevant vulnerable groups identified under this effect are those outlined in Paragraph 17.5.61. These vulnerable groups include:

- Individuals from disadvantaged socioeconomic backgrounds;
- Ethnic minority groups; and
- Sex.

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<sup>2</sup> Note: Children are eligible for FSMs if their parents are entitled to any of the following types of support which are typically associated with low income: Income support; Income-based Jobseeker's Allowance; Income-related Employment and support allowance; Support under Part VI of the Immigration and Asylum Act 1999; The guaranteed element of Pension Credit; Child Tax Credit; Working Tax Credit; and Universal Credit.

17.5.78. None of the identified relevant vulnerable groups are disproportionately represented at the CSA level.

**Receptor sensitivity**

17.5.79. As previously mentioned, there is no demographic or health information available for future workers specifically. Many of these future workers will be residents of the CSA. Baseline information for residents across the CSA is deemed appropriate to serve as a proxy for the baseline characteristics of future workers at the Proposed Development.

17.5.80. The CSA has a **medium** sensitivity to changes in access to employment and training opportunities in both 2031 and 2051. The CSA aligns with national rates in terms of qualifications and has a lower proportion of residents with no qualifications. However, the gap in attainment between students eligible for FSMs is wider relative to the national rate. There is strong performance in apprenticeship engagement and achievements in the CSA relative to comparator study areas. Employment growth since 2015 has been 10% higher than the national rate.

**17.6. ASSESSMENT OF POTENTIAL EFFECTS, MITIGATION AND RESIDUAL EFFECTS**

**CONSTRUCTION PHASE**

17.6.1. **Table 17-26** outlines the assessment of potential effects, additional mitigation, residual effects and monitoring during the Construction Phase.

**Table 17-26 – Assessment of potential effects, additional mitigation, residual effects and monitoring during construction**

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring	
<b>Demand for healthcare services</b>		
Residents (CSA) Vulnerable groups: <ul style="list-style-type: none"> <li>• Older people</li> <li>• People with long term health issues and disabilities</li> </ul>	<b>Potential Effects</b>	<p><b><u>Pathway to health effect</u></b></p> <p>Increased demand on local health facilities and longer waiting times could reduce access to health services for existing users (<b>Ref. 17.35</b>). This could exacerbate health issues and lead to unmet health needs.</p> <p>The additional workers on-Site and any workers who temporarily locate near to the Proposed Development could affect local demand for healthcare through: additional registration and use of local primary healthcare, additional use of emergency and healthcare as a result of accidents on-Site, or additional registration and use of other forms of health and social care services, such as mental health services.</p> <p><b><u>Effect generated by Proposed Development</u></b></p> <p>Typically, individuals register with GPs close to their place of residence. However, since January 2015, GPs have been allowed to accept patients who are living outside of their practice boundaries, although it is for the practice to decide whether this is appropriate. A GP can refuse patients if:</p> <ul style="list-style-type: none"> <li>• It has no capacity to take on new patients;</li> </ul>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring
	<ul style="list-style-type: none"> <li>• It is not accepting patients that do not live within its practise boundary; and</li> <li>• If it is not appropriate for an individual to register with a practice that is a long way from where they live.</li> </ul> <p>If the cautious worst -case number of construction workers requiring accommodation all register at GPs within the CSA catchment area, this will result in an approximate uplift to patient numbers. The increase across the CSA is estimated to be approximately 0.3%.</p> <p>However, only 165 workers are more realistically expected to relocate within the CSA with their families. If these workers and their families moved into the CSA and registered at local GPs, this would result in an approximate uplift to patient numbers across the CSA of 0.03%.</p> <p>Furthermore, if it is cautiously assumed that all construction workers requiring accommodation registered at GPs which the Site falls within the catchment of, this would result in an approximate uplift to patient numbers of these GPs of 0.1%.</p> <p>Construction workers generally have a high likelihood of demanding accident and emergency services with 2.6% of the construction workforce having accidents at work per year (compared to 1.5% across all workers). This means that in the year of the peak construction workforce (2029), 140 injuries might arise. This equates to approximately 12 injuries per month.</p> <p>In February 2025, Bedfordshire Hospitals NHS Foundation Trust had approximately 23,700 accident and emergency admissions. The impact of construction workers at the Proposed Development in the peak year of the construction workforce (2029) would only represent 0.05% of current accident and emergency attendance.</p> <p><b><u>Conclusion:</u></b></p> <p>Prior to mitigation, the sensitivity of residents across the CSA is high. The magnitude of impact is low. This results in a direct, temporary, medium-term, <b>Moderate to Minor Adverse</b> effect (<b>Not Significant</b>) in the Peak Construction Year (2029).</p>
	<p><b>Additional Mitigation</b></p> <p>In the Construction Phase, UDX will implement initial first aid treatment support services designed to provide timely response to a variety of commonly seen urgent/emergent injuries and illnesses presented by team members and contractors. Initial treatment will include basic first aid up to and including the application of basic life support. Basic life support means non-invasive emergency procedures applied to assist in the immediate survival of the patient including cardiopulmonary resuscitation (CPR), application of an automatic external defibrillator (AED), bleeding control, fracture stabilisation, and spinal immobilisation. Patients will be referred to definitive health care when:</p> <ul style="list-style-type: none"> <li>• A life threatening medical emergency is present or presented;</li> <li>• The injury or illness episode cannot be fully assessed or treated within the scope of first-aid;</li> <li>• The illness presents a health risk to others (i.e. communicable disease other than flu/cold);</li> </ul>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring	
		<ul style="list-style-type: none"> <li>• The condition is chronic or needs ongoing regular health care; and</li> <li>• Where required under public health law, NHS standard of care or when requested by the injured or ill party.</li> </ul> <p>UDX will liaise with the local health care system providers to:</p> <ul style="list-style-type: none"> <li>• Validate shared understanding of available resources and support opportunities.</li> <li>• Share knowledge of operations and protocols for occupational incidents and return-to-work availabilities.</li> <li>• Communicate patient information and updates.</li> </ul> <p>UDX will liaise with emergency responders to:</p> <ul style="list-style-type: none"> <li>• Discuss site response locations, protocols, and operational risks.</li> <li>• Enhance site familiarity to facilitate efficient and effective incident response.</li> </ul> <p>UDX will:</p> <ul style="list-style-type: none"> <li>• Communicate and gain mutual understanding of on-site rescue/response resources.</li> <li>• Identify agency support and equipment needs.</li> </ul> <p>UDX will offer and provide:</p> <ul style="list-style-type: none"> <li>• On-site emergency drills.</li> <li>• Training opportunities for responder agencies.</li> </ul> <p>Throughout the construction period access for emergency vehicles will be maintained to and around the Site. Any closure to any such routes shall be controlled and managed to maintain access and suitable through routes for emergency vehicles at all times. These mitigation measures are detailed in <b>ES Appendix 2.3: Outline Construction Environmental Management Plan (Volume 3)</b> and it is envisaged that this will be secured by a planning condition.</p>
	<b>Residual Effects</b>	<p>The sensitivity of residents across the CSA is high. The magnitude of impact, following mitigation, is negligible. This results in a direct, temporary, medium-term, <b>Minor to Negligible Adverse</b> residual effect (<b>Not Significant</b>) in the Peak Year of Construction (2029).</p>
<b>Noise and vibration</b>		
<p>Residents (NVAA)</p> <p>Vulnerable groups:</p> <ul style="list-style-type: none"> <li>• Younger people</li> </ul>	<b>Potential Effects</b>	<p><b><u>Pathway to health effect</u></b></p> <p>There is strong evidence of links between prolonged exposure to noise and vibration and health in existing literature. The World Health Organisation (WHO) note that “excessive noise seriously harms human health and interferes with people’s daily activities at school, at work, at home and during leisure time. It can disturb</p>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring
<ul style="list-style-type: none"> <li>• Older people</li> <li>• People with long term health issues and disabilities</li> </ul>	<p>sleep, cause cardiovascular and psychophysiological effects, reduce performance and provoke annoyance responses and changes in social behaviour” (Ref. 17.36).</p> <p><b><u>Effect generated by Proposed Development</u></b></p> <p>An assessment of the anticipated increase in noise levels is provided in <b>Chapter 9: Noise and Vibration (Volume 1)</b>. This assessment concludes that of the 13 identified sensitive receptors in the NVAA, five would experience moderate to major adverse effects for construction noise (day time), all would experience moderate to major adverse effects for construction noise (evening and night-time), five would experience moderate adverse effects for construction vibration, and one would experience moderate adverse effects for construction vibration. Two receptors are expected to experience moderate to major beneficial effects in relation to road traffic noise and one receptor is expected to experience moderate adverse effects. <b>All other noise and vibration effects generated in the construction phase are not expected to be Significant.</b></p> <p><b>Chapter 9: Noise and Vibration (Volume 1)</b> outlines the following effects in the Construction Phase.</p> <p><b>For the majority of receptors, the noise and vibration impacts generated by the Proposed Development in the construction phase will be minor to negligible.</b></p> <p>However, the following likely significant impacts are expected:</p> <p><u>Construction noise</u></p> <p>Receptors NSR05-06 and NSR08-10 are expected to experience moderate to major adverse noise impacts as they are the closest receptors to the Site during the Construction Phase.</p> <p>Receptors NSR05-06 and NSR08-10 include 122 of the 609 total properties outlined as highly sensitive across all 13 sensitive receptors. This equates to 20% of total properties within identified sensitive receptors.</p> <p>All NSRs have the potential to experience an adverse impact as a result of night-time noise. However, this is only expected in the last 18-months of the Primary Phase Construction Programme and irregularly. Given that works are likely to be undertaken to varying extents over a period of several years and potentially late into the night on occasion, it is assumed that moderate to major impacts could occur at sensitive receptors close to the Site.</p> <p>This would result in a moderate to major adverse in the Peak Year of Construction (2029).</p> <p><u>Vibration</u></p> <p>Receptors NSR05-06 and NSR08-10 are expected to experience moderate adverse vibration impacts as they are the closest receptors to the Site during the Construction Phase.</p> <p>Receptors NSR05-06 and NSR08-10 include 122 of the 609 total properties outlined as highly sensitive across all 13 sensitive receptors. This equates to 20% of total properties within identified sensitive receptors.</p> <p>This would result in a moderate adverse in the Peak Year of Construction (2029).</p>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring
	<p>The Kempston Hardwick moated site is expected to experience moderate to moderate to major adverse vibration impacts during the Construction Phase.</p> <p>This would result in a moderate to major adverse in the Peak Year of Construction (2029).</p> <p><u>Road Traffic Noise</u></p> <p>At receptors NSR09-10 moderate beneficial impacts are predicted due to a reduction in traffic flow and proportion of heavy vehicles. Receptors NSR09-10 include 20 of the 609 total properties outlined as highly sensitive across all 13 sensitive receptors. This equates to 3% of total properties within identified sensitive receptors.</p> <p>This would result in a moderate beneficial in the Peak Year of Construction (2029).</p> <p>At receptor NSR06 moderate adverse impacts are predicted at due to an increase in proportion of heavy vehicles.</p> <p>Receptors NSR06 include 1 of the 609 total properties outlined as highly sensitive across all 13 sensitive receptors. This equates to 0.2% of total properties within identified sensitive receptors.</p> <p>This would result in a moderate adverse in the Peak Year of Construction (2029).</p> <p>Only a small proportion of the 13 identified sensitive receptors within the study area are expected to experience consistent significant effects. Given the intensity of effects at a limited number of receptors, a medium impact magnitude is considered appropriate, reflecting the overall balance between the localised severity of impacts and the limited extent of the affected population.</p> <p><u>Conclusion:</u></p> <p>Prior to mitigation, the sensitivity of residents across the NVAA is medium. The magnitude of impact is medium. This results in a direct, temporary, medium-term, <b>Moderate Adverse</b> effect (<b>Significant</b>) in the Peak Construction Year (2029).</p>
	<p><b>Additional Mitigation</b></p> <p>The following mitigation measures will be implemented in the Construction Phase at respective sensitive receptors, as per <b>Chapter 9: Noise and Vibration (Volume 1)</b>.</p> <p><u>Noise</u></p> <ul style="list-style-type: none"> <li>Principal Contractor(s) to employ Best Practicable Means (BPM) to limit construction noise. Further details on mitigation are set out in Section 4 of <b>Appendix 9.2: Construction Noise and Vibration Assessment (Volume 3)</b>.</li> </ul> <p><u>Vibration</u></p> <ul style="list-style-type: none"> <li>Principal Contractor(s) to employ BPM to limit construction vibration. Further details on mitigation set out in Section 4 of <b>Appendix 9.2: Construction Noise and Vibration Assessment (Volume 3)</b>.</li> </ul> <p><u>Road traffic noise</u></p> <ul style="list-style-type: none"> <li>Subcontractors will be encouraged to minimise heavy vehicle movements to the Site by means of consolidating payloads. A delivery management system will also be used to regulate the</li> </ul>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring	
		<p>flow of heavy vehicles to and from the Site and minimise the number of arrivals per hour.</p> <p>Despite these mitigation measures, adverse effects generated by noise and vibration are expected to remain significant in the construction phase.</p> <p>As outlined in <b>Appendix 2.3: Outline Construction Environmental Management Plan (Volume 3)</b>, the following mitigation measures will be implemented in the construction phase to mitigate the health impacts of noise generation.</p> <p><u>Advance community notification of out-of-hours or night-time works</u></p> <p>UDX will compel the Principal Contractor(s) to issue “look-ahead” bulletins detailing the location, nature, timing and expected duration of any works scheduled outside standard hours, together with the noise-control measures to be employed.</p> <p>Information will be distributed at least five working days in advance through real-time updates via a project website and/or SMS alert system.</p> <p><u>Appointment and proactive deployment of a Community Liaison Officer (CLO)</u></p> <p>A dedicated CLO will act as the single point of contact for residents, Bedford Borough Council and other stakeholders. Responsibilities will include:</p> <ul style="list-style-type: none"> <li>• Maintaining the notification systems above;</li> <li>• Logging, investigating and responding to all noise-related enquiries;</li> <li>• Reporting quarterly to the Principal Contractor(s) and MHCLG on enquiries received and actions taken; and</li> <li>• Attending meetings with socio-economic taskforce.</li> </ul> <p>These impacts are only expected to endure over a 5-year construction period. These impacts are temporary, not persistent. Whilst there will be ongoing construction to reach the point of full buildout in 2051, the level of construction in this period will be insignificant in comparison to the level of construction experienced between 2026 and 2031.</p> <p>These mitigation measures are detailed in <b>ES Appendix 2.3: Outline Construction Environmental Management Plan (Volume 3)</b> and it is envisaged that this will be secured by a planning condition.</p>
	<p><b>Residual Effects</b></p>	<p>The sensitivity of residents across the NVAA is medium. The magnitude of impact, following mitigation is low. This results in a direct, temporary, medium-term, <b>Minor adverse</b> residual effect (<b>Not Significant</b>) in the Peak Construction Year (2029).</p>
<p><b>Air quality</b></p>		

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring	
<p>Residents (AQAA)</p> <p>Vulnerable groups:</p> <ul style="list-style-type: none"> <li>• Younger people</li> <li>• Older people</li> <li>• People with long term health issues and disabilities</li> </ul>	<p><b>Potential Effects</b></p>	<p><b><u>Pathway to health effect</u></b></p> <p>The European Environment Agency states that both short- and long-term exposure to air pollution can lead to a wide range of diseases, including stroke, chronic obstructive pulmonary disease, trachea, bronchus and lung cancers, aggravated asthma and lower respiratory infections (<b>Ref. 17.37</b>). Chronic exposure can affect every organ in the body, complicating and exacerbating existing health conditions (<b>Ref. 17.38</b>).</p> <p><b><u>Effect generated by Proposed Development</u></b></p> <p><b>Chapter 8: Air Quality (Volume 1)</b> outlines the following air quality effects in the Construction Phase.</p> <p><b><u>Fugitive dust emissions</u></b></p> <p>The potential dust emission magnitude of four key activities has been determined:</p> <ul style="list-style-type: none"> <li>• <i>Demolition</i>: there will be limited demolition activities involving the removal of small structures including two small buildings and a brick chimney within the Lake Zone, breaking out and removal of existing hardstanding areas, and use of mobile crushing and screening plant. There is also likely to be removal of Vine Cottages 1 and 2 to support realignment of the eastern end of Manor Road. The potential dust emission magnitude for demolition is ‘medium’;</li> <li>• <i>Earthworks</i>: extensive earthworks and grading will take place across the Site. The potential dust emission magnitude for earthworks is ‘large’;</li> <li>• <i>Construction</i>: extensive building works will take place. The potential dust emission magnitude for construction is ‘large’; and</li> <li>• <i>Trackout</i>. The number of heavy goods vehicle deliveries are set out in <b>Appendix 2.3: Outline Construction Environmental Management Plan (Volume 3)</b>. The potential dust emission magnitude for trackout is ‘large’.</li> </ul> <p>There are approximately 33 high sensitivity receptors within 20m of the Site boundary, including 19 on Manor Road adjacent to the Lake Zone and the Core Zone, 12 on Kempston Hardwick Caravan Site on Ampthill Road adjacent to the East Gateway Zone, one at Broadmead Farm on Broadmead Road adjacent to the Core Zone, and one on Woburn Road adjacent to the West Gateway Zone. In addition, there is a high sensitivity commercial premises (BCA Bedford Car Auctions) within 20m of the Core Zone (to the east of the Site boundary off Ampthill Road) and 50m from Manor Road realignment.</p> <p>Annual mean particulate levels within the construction dust study area, as indicated by background concentrations for PM<sub>10</sub> from the <i>Defra UK Air website (Ref. 8.26)</i>, are low (less than 20µg/m<sup>3</sup>).</p> <p>Given the numbers and locations of high sensitivity receptors within 20m of the Site boundary, the Kempston Hardwick area is considered to have high sensitivity to dust soiling effects.</p>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring
	<p>Elsewhere, the area is considered to have low sensitivity to dust soiling effects.</p> <p>With regard to human health, since background PM<sub>10</sub> concentrations are low, the sensitivity of all areas can be considered to be low.</p> <p>There are two ecological receptors within 20m of the Site boundary: Kempston Hardwick Pit CWS, and Coronation Pit CWS. These areas are considered to have medium sensitivity to dust impacts.</p> <p>Taking the above factors into account, the following risks from dust impacts have been determined:</p> <ul style="list-style-type: none"> <li>• <i>Demolition</i> – There is a medium risk for dust soiling at residential premises on Manor Road during dry conditions, with low risk elsewhere. Risks for human health and ecological receptors are low;</li> <li>• <i>Earthworks</i> – There is a high risk for dust soiling at residential premises on Manor Road during dry conditions, with low risk elsewhere. Risks for human health and ecological receptors are low;</li> <li>• <i>Construction</i> – There is a high risk for dust soiling at residential premises on Manor Road during dry conditions, with low risk elsewhere. Risks for human health and ecological receptors are low; and</li> <li>• <i>Trackout</i> – Assuming temporary Site access points off Broadmead Road and Manor Road there is low to medium risk for dust soiling. Risks for human health and ecological receptors are low.</li> </ul> <p><u>Road traffic emissions</u></p> <p>The impacts on NO<sub>2</sub> concentrations with the 2029 Peak Construction scenario are negligible at all receptors.</p> <p>The impacts on PM<sub>10</sub> concentrations with the 2029 Peak Construction scenario are negligible at all receptors.</p> <p>The impacts on PM<sub>2.5</sub> concentrations with the 2029 Peak Construction scenario are negligible at all receptors.</p> <p><u>Conclusion:</u></p> <p>Prior to mitigation, the sensitivity of residents across the AQAA is high. The magnitude of impact is medium. This results in a direct, temporary, medium-term, <b>Major Adverse</b> effect (<b>Significant</b>) in the Peak Construction Year (2029).</p>
	<p><b>Additional Mitigation</b></p> <p>Additional mitigation measures to minimise the risk of dust impacts are set out in Section 3.6 of the <b>Outline Construction Environmental Management Plan (Appendix 2.3: Outline Construction Environmental Management Plan (Volume 3))</b>. The Principal Contractor(s) will be required to demonstrate use of Best Practicable Means at all times during the works in mitigating emissions from construction sites and activities. Based on <i>IAQM guidance</i>, measures are required for Site management, monitoring, preparation and maintenance of the Site, operating</p>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring	
		<p>vehicles/machinery and sustainable travel, general operations, earthworks, construction and trackout.</p> <p>These mitigation measures are detailed in <b>ES Appendix 2.3: Outline Construction Environmental Management Plan (Volume 3)</b> and it is envisaged that this will be secured by a planning condition.</p>
	<b>Residual Effects</b>	<p>The sensitivity of residents across the AQAA is high. The magnitude of impact, following mitigation, is negligible. This results in a direct, temporary, medium-term, <b>Minor to Negligible Adverse</b> residual effect (<b>Not Significant</b>) in the Peak Construction Year (2029).</p>
<b>Changes to local traffic</b>		
<p>Residents (Local Area)</p> <p>Vulnerable groups:</p> <ul style="list-style-type: none"> <li>• Younger people</li> <li>• Older people</li> <li>• People from disadvantaged socioeconomic backgrounds</li> </ul>	<b>Potential Effects</b>	<p><b><u>Pathway to health effect</u></b></p> <p>There is a considerable body of evidence linking poor transport access to adverse health outcomes (such as isolation, depression, and stress) (<b>Ref. 17.39</b>).</p> <p><b><u>Effect generated by Proposed Development</u></b></p> <p><b>Appendix 5.1: Transport Assessment (Volume 3)</b> states that the traffic associated with the construction of the Proposed Development will have a relatively sharp peak around the end of 2029 / early 2030.</p> <p>Overall, <b>Appendix 5.1: Transport Assessment (Volume 3)</b> shows that general conditions across the network modelled across the day are relatively limited. During the PM Peak in Scenario 2 there are potentially temporary short term localised congestion on the A421 network but these are not predicted to be long term severe residual adverse effects.</p> <p><b>Chapter 5: Traffic and Transport (Volume 1)</b> concludes at the peak year of construction (2029) there will be significant adverse effects in relation amenity of non-motorised users and fear and intimidation.</p> <p>Prior to mitigation, the sensitivity of residents across the Local Area is medium. The magnitude of impact is low. This results in a direct, temporary, medium-term, <b>Minor Adverse</b> effect (<b>Significant</b>) in the Peak Construction Year (2029).</p>
	<b>Additional Mitigation</b>	<p>There will be no further mitigation with regard to this effect.</p>
	<b>Residual Effects</b>	<p>The sensitivity of residents across the Local Area is medium. The magnitude of impact, following mitigation is low. This results in a direct, temporary, medium-term, <b>Minor Adverse</b> residual effect (<b>Not Significant</b>) in the Peak Construction Year (2029).</p>
<b>Changes to local public transport and active travel</b>		
<p>Residents (Local Area)</p> <p>Vulnerable groups:</p>	<b>Potential Effects</b>	<p><b><u>Pathway to health effect</u></b></p> <p>Evidence is particularly strong regarding the link between reduced active travel methods and positive health outcomes which aren't realised, such as increased physical activity.</p>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring	
<ul style="list-style-type: none"> <li>• Younger people</li> <li>• Older people</li> <li>• People with long term health issues and inequalities</li> <li>• People from disadvantaged socioeconomic backgrounds</li> </ul>		<p>Public transportation encourages more walking and physical activity. For example, studies show that individuals who use public transport tend to walk more as part of their daily routines compared to those who drive, which can help reduce the risk of chronic diseases such as cardiovascular disease (<b>Ref. 17.40</b>).</p> <p><b><u>Effect generated by Proposed Development</u></b></p> <p>PRoW 1 and 2 will be permanently stopped up as a result of construction. PRoW A1/8 will be closed during construction to maintain public safety.</p> <p><b>Appendix 5.1: Transport Assessment (Volume 3)</b> does not identify negative impacts on the local public transport network in the Construction Phase.</p> <p><b><u>Conclusion:</u></b></p> <p>The sensitivity of residents across the Local Area is medium. The magnitude of impact is negligible. This results in a direct, temporary, medium-term, <b>Minor to Negligible Adverse</b> effect (<b>Not Significant</b>) in the Peak Construction Year (2029).</p>
	<p><b>Additional Mitigation</b></p>	<p>There will be no further mitigation with regard to this effect</p>
	<p><b>Residual Effects</b></p>	<p>The sensitivity of residents across the Local Area is medium. The magnitude of impact, following mitigation is negligible. This results in a direct, temporary, medium-term, <b>Minor to Negligible Adverse</b> residual effect (<b>Not Significant</b>) in the Peak Construction Year (2029).</p>
<p><b>Presence of construction workforce</b></p>		
<p>Residents (Local Area)</p> <p>Vulnerable groups:</p> <ul style="list-style-type: none"> <li>• Younger people</li> <li>• Ethnic minority groups</li> </ul>	<p><b>Potential Effects</b></p>	<p><b><u>Pathway to health effect</u></b></p> <p>Existing evidence highlights the potential impact of an influx of construction workers on community cohesion and therefore health, with some studies finding that the presence of construction workers causes some groups to feel intimidated (<b>Ref. 17.41</b>).</p> <p>The presence of a construction workforce can negatively affect some groups near the Site. The presence of construction workers could also result in anti-social behaviour in the local area.</p> <p><b><u>Effect generated by Proposed Development</u></b></p> <p>The total construction workforce (5,380 at peak) has the potential to increase the population of the Local Area by approximately 30% if all construction workers were to move to the Local Area. However, if it is cautiously assumed that all of the construction workers that are expected to require accommodation across the CSA live in the Local Area, this would only increase the population of the Local Area by 0.9%, representing a minimal uplift.</p> <p>Construction workers will be located on Site, commuting to and from the Site. The Site will be secure and removed from nearby communities. Construction workers are not expected to regularly engage with local communities. In the most likely scenario there is not envisaged to be a need for an on Site campus for construction workers. Where construction workers do relocate, this impact will be minimal as it will be disaggregated across the CSA.</p>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring	
		<p><u>Conclusion:</u> Prior to mitigation, the sensitivity of residents across the Local Area is low. The magnitude of impact is low. This results in a direct, temporary, medium-term, <b>Minor Adverse effect (Not Significant)</b> in the Peak Construction Year (2029).</p>
	<p><b>Additional Mitigation</b></p>	<p>Construction workers will adhere to a code of conduct. The code of conduct contains enforcement provisions designed to ensure that the entire workforce have no impact on the local community in terms of antisocial behaviour, vandalism, property destruction or other types of social crime.</p> <p>These mitigation measures are detailed in <b>ES Appendix 2.3: Outline Construction Environmental Management Plan (Volume 3)</b> and it is envisaged that this will be secured by a planning condition.</p>
	<p><b>Residual Effects</b></p>	<p>The sensitivity of residents across the Local Area is low. The magnitude of impact is negligible. After mitigation, this results in a direct, temporary, medium-term, <b>Negligible residual effect (Not Significant)</b> in the Peak Construction Year (2029).</p>
<b>Access to employment and training opportunities</b>		
<p>Residents, Future workers (CSA) Vulnerable groups:</p> <ul style="list-style-type: none"> <li>• People from disadvantaged socioeconomic backgrounds,</li> <li>• Ethnic minorities,</li> <li>• Sex</li> </ul>	<p><b>Potential Effects</b></p>	<p><u><b>Pathway to health effect</b></u></p> <p>There is strong evidence linking the creation of work and training opportunities to health outcomes. The Marmot Review, commissioned by the Department of Health, looks at the relationship between health inequalities and economic status for communities within England (<b>Ref. 17.42</b>). The review concludes that greater economic status is predictive of better health outcomes, and unemployment contributes to poor health outcomes. This conclusion is echoed by Public Health England, stating “<i>unemployed people have a greater risk of poor health outcomes than those in employment, contributing to health inequalities.</i>” (<b>Ref. 17.43</b>)</p> <p><u><b>Effect generated by Proposed Development</b></u></p> <p>The construction period of the Proposed Development will generate 5,380 direct jobs in the peak construction year (2029). An estimated 4,525 will be sourced from the UK and 855 will be sourced from abroad.</p> <p>Construction workers in the CSA have an estimated average income of either £38,400 (workplace based) or £44,800 (residential based) (<b>Ref. 17.44</b>), which is 9% higher than the average income of £35,300 or £41,200 for all workers in the area. Work in the construction industry is thus a valuable path towards prosperity in the area, one which is significantly boosted by the Proposed Development. Construction workers at the Site are therefore expected to be well remunerated relative to workers across the CSA.</p> <p>The volume of employment that will be supported at the Proposed Development provides the opportunity to support high numbers of apprenticeships in general construction roles. Such roles generally have low barriers to entry, providing valuable</p>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring
	<p>opportunities for individuals with fewer qualifications or from disadvantaged backgrounds to access high quality training and employment.</p> <p>These roles will be particularly valuable in the CSA, where individuals with no qualifications face higher rates of unemployment and economic inactivity (<b>Ref. 17.45</b>). The CSA performs well with regard to construction apprenticeships, which make up 25% of apprenticeships in the area. The Proposed Development will therefore act to alleviate issues in the labour market and build on its strengths simultaneously.</p> <p>The employment and training opportunities provided at the Proposed Development will be felt more directly by future workers that are directly employed at the Proposed Development. Residents across the CSA (where the majority of employees at the Proposed Development are expected to come from) will also benefit from heightened opportunities.</p> <p><u>Conclusion:</u></p> <p>Prior to mitigation, the sensitivity of residents across the CSA is medium. The magnitude of impact is negligible. This results in a direct, temporary, medium-term, <b>Minor to Negligible Beneficial effect (Not Significant)</b> in the Peak Year of Construction (2029) for residents across the CSA.</p> <p>Prior to mitigation, the sensitivity of future workers is medium. The magnitude of impact is medium. This results in a direct, temporary, medium-term, <b>Minor Beneficial effect (Not Significant)</b> in the Peak Year of Construction (2029) for future workers at the Proposed Development.</p>
<p><b>Additional Mitigation</b></p>	<p>The <b>Employment and Skills Plan (Document Reference 6.12.0)</b> provides evidence of UDX’s track record in delivering good quality employment and training and includes explicit commitments that the Principal Contractor(s) will have to commit to during construction which are in line with best practice and will deliver good quality employment and training opportunities for workers. Wider employment and skills commitments will benefit wider residents of the CSA.</p> <p>Employment and skills related measures are outlined in <b>Employment and Skills Plan (Document 6.12)</b>, and secured through the <b>Proposed Operative and Controlling Documents (Document Reference 1.16.0)</b>.</p>
<p><b>Residual Effects</b></p>	<p>The sensitivity of residents across the CSA is medium. The magnitude of impact, following mitigation is low. This results in a direct, temporary, medium-term, <b>Minor Beneficial residual effect (Not Significant)</b> in 2029 for residents across the CSA.</p> <p>The sensitivity of future workers is medium. The magnitude of impact, following mitigation is medium. This results in a direct, temporary, medium-term, <b>Moderate Beneficial residual effect (Significant)</b> in 2029 for future workers at the Proposed Development.</p>

## OPERATION PHASE

17.6.2. **Table 17-27** outlines the assessment of potential effects, additional mitigation, residual effects and monitoring during the Operation Phase.

**Table 17-27 – Assessment of potential effects, additional mitigation, residual effects and monitoring during operation**

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring	
<b>Effect on community from new sports provision</b>		
Residents (CSA) Vulnerable groups: <ul style="list-style-type: none"> <li>• Younger people</li> <li>• People with long term health issues and disabilities</li> </ul>	<b>Potential Effects</b>	<p><b><u>Pathway to health effect</u></b></p> <p>New sports facilities encourage more people to engage in physical activities, which is crucial for preventing and managing chronic diseases such as heart disease, strokes, diabetes, and certain cancers. Regular physical activity also helps on reducing hypertension and obesity and improves mental health (<b>Ref. 17.46</b>).</p> <p>New sports facilities can serve as community hubs. They provide a venue for people to come together and build stronger community ties. This can lead to more supportive and connected communities, positively impacting overall health outcomes (<b>Ref. 17.47</b>).</p> <p><b><u>Effect generated by Proposed Development</u></b></p> <p>Although unconfirmed, there is potential that the delivery of the mixed use area could include a sports complex. Although the exact operations of this potential sports complex are unknown, it is likely to provide a best of class sports facility for residents of the CSA to use and partake in physical activity at. Should this facility come forward it has potential to carry beneficial impacts.</p> <p><b><u>Conclusion:</u></b></p> <p>The sensitivity of residents across the CSA is medium.</p> <p>If the sports complex is to come forward by 2051, the magnitude of impact is medium. This results in a direct, permanent, long-term, <b>Moderate Beneficial effect (Significant)</b> in the Full Buildout – Future Operational Year (2051).</p> <p>There will be no impact if the sports complex does not come forward by the Full Buildout – Future Operational Year (2051).</p>
	<b>Additional Mitigation</b>	There will be no additional mitigation in regard to this effect.
	<b>Residual Effects</b>	<p>The sensitivity of residents across the CSA is medium.</p> <p>If the sports complex is to come forward by 2051, the magnitude of impact is medium. This results in a direct, permanent, long-term, <b>Moderate Beneficial residual effect (Significant)</b> in the Full Buildout – Future Operational Year (2051).</p> <p>There will be no impact if the sports complex does not come forward by the Full Buildout – Future Operational Year (2051).</p>
<b>Demand for health services</b>		

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring	
<p>Residents (CSA)</p> <p>Vulnerable groups:</p> <ul style="list-style-type: none"> <li>• Older people</li> <li>• People with long term health issues and disabilities</li> </ul>	<p><b>Potential Effects</b></p>	<p><b><u>Pathway to health effect</u></b></p> <p>Increased demand on local health facilities and longer waiting times could reduce access to health services for existing users. This could exacerbate health issues and lead to unmet health needs.</p> <p><b><u>Effect generated by Proposed Development</u></b></p> <p>In the Operation Phase, the impacts on demand for health services will largely be felt through two routes – more visitors (and workers) being temporarily in the area who may (infrequently) make use of services and workers who move permanently into the area who place increased demand for housing which in turn places pressure on services. The former is an indirect effect of the development, and the latter is the indirect effect resulting from another indirect effect.</p> <p>The International Association of Amusement Parks and Attractions (IAAPA) surveyed 179 parks in North America and found that there were 1,281 ride related injuries in 2021 (<b>Ref. 17.48</b>). This equated to 3.7 injuries per million theme park attendances. Factored by the estimated attendance at the Proposed Development, it is estimated that there could be 30 ride related injuries in 2031 and 45 in 2051 which might require services.</p> <p>Workplace accidents also occur. Applying the national accident rate at work across all industries (1.5%) to all gross additional workers, it is estimated that there would be 120 injuries in 2031 and 190 in 2051. However, this is an overall injury rate, rather than an estimate of injuries requiring A&amp;E.</p> <p>Even in a cautious worst case scenario where all 235 injuries expected annually from workers and visitors attended accident and emergency services, this would equate to approximately 1% of A&amp;E attendances experienced by Bedfordshire Hospitals NHS Foundation Trust in a single month.</p> <p><b><u>Conclusion:</u></b></p> <p>Prior to mitigation, the sensitivity of residents across the CSA is high. The magnitude of impact is low. This results in a direct, permanent, long-term, <b>Moderate to minor adverse effect (Not Significant)</b> in the Theme Park Opening Year (2031) and the Full Buildout – Future Operational Year (2051).</p>
	<p><b>Additional Mitigation</b></p>	<p>UDX will implement initial first aid treatment support services designed to provide timely response to a variety of commonly seen urgent/emergent injuries and illnesses presented by guests, team members, contractors, or third-party on-site vendors. Initial treatment will include basic first aid up to and including the application of basic life support. Basic life support means non-invasive emergency procedures applied to assist in the immediate survival of the patient including cardiopulmonary resuscitation (CPR), application of an automatic external defibrillator (AED), bleeding control, fracture stabilisation, and spinal immobilisation. Patients will be referred to definitive health care when:</p> <ul style="list-style-type: none"> <li>• A life threatening medical emergency is present or presented;</li> </ul>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring	
		<ul style="list-style-type: none"> <li>The injury or illness episode cannot be fully assessed or treated within the scope of first-aid;</li> <li>The illness presents a health risk to others (i.e. communicable disease other than flu/cold);</li> <li>The condition is chronic or needs ongoing regular health care; and</li> <li>Where required under public health law, NHS standard of care or when requested by the injured or ill party.</li> </ul> <p>In addition to the emergent incident services noted above, UDX will provide wellness support to Team Members as follows:</p> <ul style="list-style-type: none"> <li>Implement, maintain, and monitor mitigations to reduce workplace occupational safety and health risks in alignment with UDX Standards to include ergonomics, occupational contaminants, and environmental exposures to support general health and well-being, bolster labour resource availability and retention, and minimise operational downtime from incidents; and</li> <li>Design programs for screening/surveillance for the initial stages of occupational health issues in alignment with UDX standard.</li> </ul> <p>UDX will liaise with the local health care system providers to validate shared understanding of available resources and support opportunities, share knowledge of operations and protocols for occupational incidents and return to work availabilities, and patient communications and information. UDX will also liaise with emergency responders related to site response locations, protocols, operational risks, and site familiarity to facilitate efficient and effective incident response. UDX will communicate and gain mutual understanding of on-Site rescue/response resources and identification of agency support and equipment needs. UDX will also offer and provide on-Site emergency drills and training opportunities for responder agencies.</p> <p>These mitigation measures are secured in the <b>Security and Emergency Management Plan (Document Reference 6.4.2.0)</b>.</p>
	<b>Residual Effects</b>	<p>The sensitivity of residents across the CSA is high. The magnitude of impact, following mitigation is negligible. This results in a direct, permanent, long-term, <b>Minor to Negligible Adverse residual effect (Not Significant)</b> in the Theme Park Opening Year (2031) and the Full Buildout – Future Operational Year (2051).</p>
<b>Noise and vibration</b>		
<p>Residents</p> <ul style="list-style-type: none"> <li>Younger people</li> <li>Older People</li> <li>People with long term health issues and disabilities</li> </ul>	<b>Potential Effects</b>	<p><b><u>Pathway to health effect</u></b></p> <p>The pathway to a health effect that can be generated by changes to levels of noise and vibration is outlined in <b>Table 17-26</b> above.</p> <p><b><u>Effect generated by Proposed Development</u></b></p> <p><b><u>New and Altered Roads</u></b></p> <p>NSR09 is expected to experience major adverse impacts as the proposed road alignment changes and new road links associated with the operation of the Proposed Development can give rise to a change in noise level at nearby sensitive receptors. One receptor</p>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring
	<p>(comprising two dwellings at Vine Cottages) at the eastern end of Manor Road (shown in group NSR09) is predicted to experience a major adverse impact due to the dualling of Manor Road.</p> <p><b><u>Operational Noise</u></b></p> <p><b>Chapter 9: Noise and Vibration (Volume 1)</b> states that the noise impact assessment is based on achieving a Core Zone noise limit of 60 dB LAeq,1hr during the day and 55 dB LAeq,15min during the night at the nearest Receptor Control Locations (RCLs), for which consent is being sought. This represents a cautious worst case and would include contributions from all Core Zone activities, including Halloween Horror Nights, Holidays and Special Events.</p> <p>The control of noise from the operation of the Proposed Development is based around the achievement of noise limits at the RCLs, rather than relying on and committing to specific mitigation measures.</p> <p><b>Embedded Mitigation (built into the design):</b></p> <ul style="list-style-type: none"> <li>• Speaker and PA system directional placement to avoid projecting into the community.</li> <li>• Use of buildings around the park to act as noise barriers.</li> <li>• Event stages are strategically placed to direct sound away from sensitive areas.</li> <li>• Significant noise generating attractions and events will have a predictive noise assessment completed to minimise noise levels.</li> <li>• Damping of roller coaster beams and rails to reduce structure-radiated noise.</li> <li>• Park perimeter berm in selected areas.</li> </ul> <p><b>Optional Mitigation (to be implemented if required):</b></p> <p>UDX have agreed a set of optional mitigation measures which can be pursued if required. These optional mitigation measures will be implemented in the design phase if noise modelling shows the Proposed Development is not on track to meet noise limits.</p> <p><i>Roller Coasters:</i></p> <ul style="list-style-type: none"> <li>• Limiting high sections of roller coasters.</li> <li>• Increasing dispatch intervals for noisier attractions during evening hours.</li> <li>• Roller coasters designed to project screams and mechanical noise into the park property.</li> <li>• Limiting the routine testing of roller coasters to daytime hours where possible.</li> </ul> <p><i>Sound Level Engineering:</i></p> <ul style="list-style-type: none"> <li>• Significant noise generating attractions and events will have a predictive noise assessment completed to minimise noise levels.</li> </ul> <p><i>Noise Barriers:</i></p> <ul style="list-style-type: none"> <li>• Temporary sound barriers located for special events.</li> <li>• Designing park features or design elements that would act as sound barriers.</li> <li>• Strategically locating noisiest sources to optimise sound levels.</li> </ul>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring
	<p><i>Operational Controls:</i></p> <ul style="list-style-type: none"> <li>• Noise hotline for the community to call.</li> <li>• Active community engagement to ensure the community is aware of special events that may increase park hours or generate incremental noise.</li> <li>• Limiting noisier night-time activities.</li> <li>• Noise monitoring during special events for active compliance in the community.</li> </ul> <p><i>Utility Compound Mitigation:</i></p> <ul style="list-style-type: none"> <li>• Locate Utility Compound as far from Manor Road properties as practicable.</li> <li>• Where feasible, locate Entertainment Resort Complex Buildings that generate relatively low levels of noise (e.g. warehousing) between the Utility Compound and houses on Manor Road. Locate service yards to the north of warehouses to maximise screening opportunities.</li> <li>• Locate the noisiest chiller units at ground level and to the north of the energy centre, using this building to screen properties on Manor Road.</li> <li>• Where feasible, locate ventilation louvres on north facing façades of the energy centre.</li> </ul> <p>Although few sensitive receptors are likely to be affected, the assessment is based on a cautious worst case scenario that includes peak events, and some noise levels may still be noticeable despite embedded mitigation.</p> <p>Despite these mitigation measures, there is still expected to be some significant adverse Operational Noise impacts on sensitive receptors.</p> <p>When achieving these noise limits, a relatively small number of properties centred on RCL01 (properties on Manor Road), four of which are owned by UDX, are predicted to experience a residual <b>Major Adverse</b> effect which is <b>Significant</b>.</p> <p>In the case of properties north of Stewartby centred on RCL05 and RCL06, only a relatively small number, i.e. a single property at Broadmead Farm and properties on the northern edge of Stewartby with northern aspects and line of sight to the Development, are predicted to experience a residual <b>Moderate to Major Adverse</b> effect which is <b>Significant</b>.</p> <p>A selection of properties located farther south are predicted to experience a Moderate Adverse effect which is Significant with the majority experiencing either a <b>Minor Adverse</b> or <b>Negligible Effect</b> which is <b>Not Significant</b>.</p>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring
	<p>At the dwellings on Manor Road near RCL02, a residual <b>Moderate Adverse</b> effect which is <b>Significant</b> is identified.</p> <p>At the travellers' site on Ampthill Road near RCL03 and the residential community south of Wixams near RCL04, a residual <b>Moderate Adverse</b> is identified which is <b>Significant</b>.</p> <p>The Core Zone noise levels at RCL01, RCL05 and RCL06 will likely determine the noise levels at other, more distant, RCLs. For operational noise these RCL's will experience <b>Moderate to Major Adverse</b> residual effects which is <b>Significant</b>. Therefore, the maximum allowable noise levels (i.e. noise levels equivalent to the Core Zone noise limits) will likely affect a relatively small proportion of the surrounding residential communities resulting in a limited number of properties experiencing an adverse impact that was significant. It is acknowledged that UDX currently owns four of the most significantly impacted properties on Manor Road, which would not, on completion of the Proposed Development, be returned to residential use.</p> <p>Due to the controlling effect of the RCLs closest to the Core Zone, it is highly unlikely that all other RCLs would experience noise levels equivalent to the Core Zone noise limits for which consent is being sought of 60 dB LAeq,1hr / 55 dB LAeq,15min during the day / night (at all RCLs other than RCL04 and RCL05, where the limits are 60 dB LAeq,1hr / 50 dB LAeq,15min during the day / night). However, in the unlikely event that this did occur there would be a greater number of properties experiencing a significant effect.</p> <p>Under Normal Hours Theme Park operation (which make up the majority of the year), Core Zone noise levels would be anticipated to be lower than during Halloween Horror Nights, Holidays and Special Events, particularly during the night and the extent of significant effects will be reduced.</p> <p>Prior to mitigation, the sensitivity of residents across the NVAA is medium. The magnitude of impact is low. This results in a direct, permanent, long-term, <b>Minor Adverse</b> effect (<b>Not Significant</b>) in the Theme Park Opening Year (2031) and the Full Buildout – Future Operational Year (2051).</p>
	<p><b>Additional Mitigation</b></p> <p>It is understood that Vine Cottages have been purchased by UDX and will be demolished and will therefore no longer be considered a sensitive receptor.</p> <p>The control of noise from the operation of the Proposed Development is based around the achievement of noise limits at the RCLs, rather than relying on and committing to specific mitigation measures.</p>
	<p><b>Residual Effects</b></p> <p>The sensitivity of residents across the NVAA is medium. The magnitude of impact, following mitigation low. This results in a direct, permanent, long-term, <b>Minor Adverse</b> residual effect (<b>Not</b></p>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring	
		<p><b>Significant</b>) in the Theme Park Opening Year (2031) and the Full Buildout – Future Operational Year (2051).</p>
<b>Air quality</b>		
<p>Residents (AQAA) Vulnerable groups:</p> <ul style="list-style-type: none"> <li>• Younger people</li> <li>• Older people</li> <li>• People with long term health issues and disabilities</li> </ul>	<p><b>Potential Effects</b></p>	<p><b>Pathway to health effect</b> The pathway to a health effect that can be generated by changes to air quality are outlined in <b>Table 17-26</b> above.</p> <p><b>Effect generated by Proposed Development</b> <b>Chapter 8: Air Quality (Volume 1)</b> outlines the following impacts in the Operation Phase across all operational scenarios.</p> <p><b>Road traffic emissions</b></p> <ul style="list-style-type: none"> <li>• The impacts on NO2 concentrations are negligible at all receptors;</li> <li>• The impacts on PM10 concentrations are negligible at all receptors; and</li> <li>• the impacts on PM2.5 concentrations are negligible at all receptors.</li> </ul> <p><b>Conclusion:</b> The sensitivity of residents across the AQAA is high. The magnitude of impact is negligible. This results in a direct, permanent, long-term, <b>Minor to Negligible Adverse</b> effect (<b>Not Significant</b>) in the Theme Park Opening Year (2031) and the Full Buildout – Future Operational Year (2051).</p>
	<p><b>Additional Mitigation</b></p>	<p>There will be no additional mitigation in regard to this effect.</p>
	<p><b>Residual Effects</b></p>	<p>The sensitivity of residents across the AQAA is high. The magnitude of impact is negligible. This results in a direct, permanent, long-term, <b>Minor to Negligible Adverse</b> residual effect (<b>Not Significant</b>) in the Theme Park Opening Year (2031) and the Full Buildout – Future Operational Year (2051).</p>
<b>Changes to local traffic</b>		
<p>Residents (Local Area) Vulnerable groups:</p> <ul style="list-style-type: none"> <li>• Younger people</li> <li>• Older people</li> <li>• People from disadvantaged socioeconomic backgrounds</li> </ul>	<p><b>Potential Effects</b></p>	<p><b>Pathway to health effect</b> The pathway to a health effect that can be generated by changes to local traffic is outlined in <b>Table 17-26</b> above.</p> <p><b>Effect generated by Proposed Development</b> <i>Theme Park Opening year</i></p> <p><b>Appendix 5.1: Transport Assessment (Volume 3)</b> states that the Proposed Development in the Theme Park Opening Year would not have a significant impact on the operation of the road network when compared to the Reference Case. The Reference Case in the Transport Assessment considers the existing road network and traffic, plus traffic associated with agreed consented developments. Overall, although the number of trips within the road network modelled will increase as a result of the Proposed Development, these trips will be able to traverse the modelled</p>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring	
		<p>area and the same proportion of trips will be completed as are completed in the Reference Case.</p> <p>A review of journey times on key routes found that some routes may experience some increases in journey time, but these are not material. The Proposed Development would be supported by new transport infrastructure including the delivery of new slip roads on and off the A421 and a new route through the Marston Vale area which will have a beneficial effect on journey time for some trips. It is likely that this new road infrastructure will benefit trips between the A421 and the Wixams area, providing an alternative route to the A421 Elstow Interchange. The new slip roads also offer an alternative route to traffic currently using the A421 Marston Moretaine Interchange and as such brings benefits in traffic conditions in Marston Moretaine, as well as an alternative to the A421 Marsh Leys Interchange.</p> <p><b>Chapter 5: Traffic and Transport (Volume 1)</b> outlines that there will be significant adverse effects on receptors in the Theme Park Opening Year (2031) on driver delay and accidents and safety. <b>Chapter 5: Traffic and Transport (Volume 1)</b> also finds that the Proposed Development will result in significant beneficial impacts in terms of severance and significant adverse impacts for driver delay and accidents and safety in the Full Buildout – Future Operational Year (2051).</p> <p><u>Future year</u></p> <p>The journey time assessment in <b>Appendix 5.1: Transport Assessment (Volume 3)</b> found that the Proposed Development will lead to slight decreases in average speeds and slight increases in average delays, but these impacts are not significant. The overall impact on the wider road network is expected to be minimal, with no material effect on journey times and key routes.</p> <p><b>Conclusion:</b></p> <p>Prior to mitigation, the sensitivity of residents across the Local Area is medium. The magnitude of impact is low. This results in a direct, permanent, long-term, <b>Minor Adverse</b> effect (<b>Not Significant</b>) in the Theme Park Opening Year (2031) and the Full Buildout – Future Operational Year (2051).</p>
	<b>Additional Mitigation</b>	There will be no additional mitigation in regard to this effect.
	<b>Residual Effects</b>	The sensitivity of residents across the Local is medium. The magnitude of impact, following mitigation is low. This results in a direct, permanent, long-term, <b>Minor Adverse</b> residual effect ( <b>Not Significant</b> ) in the Theme Park Opening Year (2031) and the Full Buildout – Future Operational Year (2051).
<b>Changes to local public transport and active travel</b>		
Residents (Local Area) Vulnerable groups:	<b>Potential Effects</b>	<b>Pathway to health effect</b> The pathway to a health effect that can be generated by changes to local public transport and active travel is outlined in <b>Table 17-26</b> above.

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring	
<ul style="list-style-type: none"> <li>• Younger people</li> <li>• Older people</li> <li>• People with long term health issues and inequalities</li> <li>• People from disadvantaged socioeconomic backgrounds</li> </ul>		<p><b><u>Effect generated by Proposed Development</u></b></p> <p><b>Appendix 5.1: Transport Assessment (Volume 3)</b> states that the Proposed Development will open up opportunity for more local movement by active travel.</p> <p>Excellent active travel corridors will be provided within the Site. Many of these will segregate cyclists from walkers from vehicles. This new network across the Site would replace existing footpaths (footpaths 1 and 2) shown in <b>Parameter Plan - Active Travel Routes (Document Reference 1.12.0)</b>.</p> <p>As outlined in the <b>Appendix 5.1 Transport Assessment (Volume 3)</b> the Proposed Development includes the delivery of a local transport hub with:</p> <ul style="list-style-type: none"> <li>• A bus/coach/shuttle hub – This is where local bus services, scheduled coach services, and local shuttles (either to airports, to visitor accommodation or more locally to the expanded Wixams Station) would stop. This would allow for all services to integrate, in addition to integrating with a potential future EWR Station.</li> <li>• A taxi hub, located next to the bus/coach/shuttle hub integrating with other shared transport modes.</li> </ul> <p>The presence of the Proposed Development will deliver a step change in travel demand in the area and it is expected that local public transport operators will seize this opportunity to deliver a range of new routes and services interacting with the rail station(s) and Proposed Development’s transport hub. The Proposed Development therefore creates the opportunity for a significant uplift in public transport accessibility for local settlements as well.</p> <p><b>Appendix 5.1: Transport Assessment (Volume 3)</b> states that the transport infrastructure improvements that the planning proposal includes are necessary and proportionate. They strike the appropriate balance between travel modes, which similarly reinforces the inclusive nature of the Proposed Development and maximises its transport sustainability credentials.</p> <p><b>Appendix 5.1: Transport Assessment (Volume 3)</b> states further that:</p> <p><i>“There is no transport reason to resist this scheme, and good transport reason to conclude that if this Proposed Development can be attracted into the UK, that this is the place to put it.”</i></p> <p><b><u>Conclusion:</u></b></p> <p>The sensitivity of residents across the Local Area is medium. The magnitude of impact is negligible. This results in a direct, permanent, long-term, <b>Minor to Negligible Adverse</b> effect (<b>Not Significant</b>) in the Theme Park Opening Year (2031) and the Full Buildout – Future Operational Year (2051).</p>
	<p><b>Additional Mitigation</b></p>	<p>There will be no additional mitigation in regard to this effect.</p>
	<p><b>Residual Effects</b></p>	<p>The sensitivity of residents across the Local Area is medium. The magnitude of impact is negligible. This results in a direct, permanent, long-term, <b>Minor to negligible adverse</b> residual</p>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring	
		effect ( <b>Not Significant</b> ) in the Theme Park Opening Year (2031) and the Full Buildout – Future Operational Year (2051).
<b>Access to healthy and unhealthy food</b>		
Residents (CSA) Vulnerable groups: <ul style="list-style-type: none"> <li>• Younger people</li> <li>• People with long term health issues and disabilities</li> <li>• People from disadvantaged socioeconomic backgrounds</li> </ul>	<b>Potential Effects</b>	<p><b>Pathway to health effect</b></p> <p>Access to healthy and nutritious food can improve diet and prevent chronic diseases related to obesity. People on low incomes, including young families and older people are less likely to be able to eat well because of a lack of access to nutritious food. They are more likely to have access to food that is high in salt, oil, energy-dense fat and sugar. Opportunities to grow and purchase local healthy food, as well as limiting concentrations of hot food takeaways can change eating behaviour and improve physical and mental health (<b>Ref. 17.49</b>).</p> <p>Workplaces offering predominantly unhealthy food options contribute to poor dietary habits, which is directly linked to negative health outcomes (<b>Ref. 17.50</b>). Improving the availability of healthy food options at work can significantly reduce these risks.</p> <p><b>Effect generated by Proposed Development</b></p> <p>The Proposed Development is expected to include two F&amp;B units within its Entry Plaza venue, which does not require a ticket. One of these restaurants will be a themed eating experience and one will be a sports grill and pub. This means that these two food and beverage outlets will be available to residents across the CSA without them needing to pay entry to the Proposed Development. Details regarding the food provision is not yet known. These are planned to be sit down restaurants offering a variety of food options, including healthy options. It is likely that these will generate an imperceptible impact on local food options.</p> <p>These food and beverage outlets that are available to the public will not be located within a short walking distance of any nearby schools. Also, they do not represent solely hot foot takeaways or fast food, they be sit down restaurants offering a variety of food options, including healthy food options.</p> <p><b>Conclusion:</b></p> <p>The sensitivity of residents across the CSA is medium. The magnitude of impact is negligible. This results in a direct, permanent, long-term, <b>Minor to Negligible Adverse</b> effect (<b>Not Significant</b>) in the Theme Park Opening Year (2031) and the Full Buildout – Future Operational Year (2051).</p>
	<b>Additional Mitigation</b>	There will be no additional mitigation in regard to this effect.
	<b>Residual Effects</b>	The sensitivity of residents across the CSA is medium. The magnitude of impact is negligible. This results in a direct, permanent, long-term, <b>Minor to Negligible Adverse</b> residual effect ( <b>Not Significant</b> ) in the Theme Park Opening Year (2031) and the Full Buildout – Future Operational Year (2051).
<b>Access to employment and training opportunities</b>		

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring	
<p>Residents, Future workers (CSA) Vulnerable groups:</p> <ul style="list-style-type: none"> <li>• People from disadvantaged socioeconomic backgrounds</li> <li>• Ethnic minority groups</li> <li>• Sex</li> </ul>	<p><b>Potential Effects</b></p>	<p><b><u>Pathway to health effect</u></b></p> <p>The pathway to a health effect that can be generated by changes in access to employment and training opportunities is outlined in <b>Table 17-26</b> above.</p> <p><b><u>Effect generated by Proposed Development</u></b></p> <p>It is estimated that the Proposed Development will directly employ 8,050 people (equivalent to 5,950 FTEs) in the Theme Park Opening Year (2031) and 12,465 (9,195 FTEs) by the year of Full Buildout (2051). These figures include employment generated across all zones at the Proposed Development.</p> <p>This means that employment generated at the Proposed Development will uplift expected employment by 2031 across the CSA by 4% and expected employment by 2051 across the CSA by 5%.</p> <p>The majority of these jobs are expected to go to residents of the CSA. It is projected that in 2031 5,530 jobs are expected to go to residents of the CSA, increasing to 8,290 by 2051 (<b>Ref. 17.51</b>). These employment levels represent 2.6% of projected employment across the CSA in 2031 and 3.4% of projected residential employment across the CSA by 2051. Consideration of net additional employment (displacement, multiplier and visitor spending effects) shows that the employment generated by the Proposed Development in 2031 will reach 11,045, rising to 16,685 in 2051. Detail on all the above calculations can be found in <b>Chapter 13: Socio-Economics (Volume 1)</b>.</p> <p>This puts into perspective the volume of job opportunities that will become available for residents across the CSA.</p> <p>The roles at the Proposed Development will be wide ranging and varied. There will be a significant proportion (11%) of jobs available which have no or limited entry requirements. In this way, there will be opportunities suitable to a large proportion of the CSA population, regardless of their highest level of qualification. Approximately 42% of jobs at the Proposed Development are expected to require mid-level or lower / no qualifications.</p> <p>The <b>Employment and Skills Plan (Document Reference 6.12.0)</b> details the specific skills requirements needed by local residents and how the Proposed Development will contribute to local residents. As a summary, the main skills requirements for residents of the CSA are broken down into three main themes:</p> <ul style="list-style-type: none"> <li>• Educational attainment for younger people;</li> <li>• Facilitating the future workforce with skills required in growth sectors; and</li> <li>• Pathways for those in need.</li> </ul> <p>The staff profile at the Proposed Development will contribute to alleviating this need in the following ways:</p> <ul style="list-style-type: none"> <li>• <b>A large share of the jobs on offer at the Proposed Development will have low entry requirements.</b> This means that residents across the CSA who have low/intermediate qualifications will have access to these jobs too. Key for success will be raising awareness amongst locals of the job</li> </ul>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring	
		<p>opportunities on offer at the Proposed Development, especially amongst priority groups such as younger unemployed residents;</p> <ul style="list-style-type: none"> <li>• <b>The diversity of jobs on offer will help transform the local economy.</b> Opportunities will be available in distinct and diverse roles, such as technical, lifeguarding, entertainment, food and beverage (F and B) and many other roles. Local residents will have a wider selection of jobs to choose from, and a broad range of career paths available for them to build their futures;</li> <li>• <b>Significant progression opportunities will be available.</b> It is envisaged that promotion to team leader in areas as diverse as F and B, attractions supervision and security will often be dependent on leadership skills, performance in entry-level roles, and the experience gained there. The lack of degree-level qualifications are not necessarily a barrier; and</li> <li>• <b>A large proportion of jobs will be in the knowledge economy.</b> The operation and general management of the Proposed Development will require the work of diverse professionals, from accountants, IT workers, legal professionals, engineers, and marketing specialists. This will help increase productivity and create high-skill clusters across the CSA.</li> </ul> <p>These employment and skills development opportunities are persistent in their impact. The residents of the CSA who benefit from the training will retain the new skills for the remainder of their careers, whether at the Proposed Development or elsewhere.</p> <p><b><u>Conclusion:</u></b></p> <p>Prior to mitigation, the sensitivity of residents across the CSA is medium. The magnitude of impact is negligible. This results in a direct, permanent, long-term, <b>Minor to Negligible Beneficial effect (Not Significant)</b> in the Theme Park Opening Year (2031) and the Full Buildout – Future Operational Year (2051) for residents across the CSA.</p> <p>Prior to mitigation, the sensitivity of future workers is medium. The magnitude of impact is low. This results in a direct, permanent, long-term, <b>Minor Beneficial effect (Not Significant)</b> the Theme Park Opening Year (2031) and the Full Buildout – Future Operational Year (2051) for future workers at the Proposed Development.</p>
	<p><b>Additional Mitigation</b></p>	<p>UDX has established a reputation for implementing successful employment and training initiatives and is committed to collaborating with local government and education and skills providers to launch similar programmes that cater specifically to the local employment and skill needs. UDX is experienced in delivering in-work training, apprenticeships, and internships, which can also be delivered at the Proposed Development.</p> <p>The UDX existing apprenticeship programme supports those aiming for technical careers by offering comprehensive on-the-job learning and classroom instruction in collaboration with local educational institutions. With hundreds of current participants, the programme covers areas such as ride maintenance, utilities, and restaurant equipment maintenance. The internships offered by UDX across various Universal locations provide immersive experiences and networking opportunities, targeting students and</p>

Sensitive Receptor	Potential Effects/Additional Mitigation/Residual Effects and Monitoring
	<p>recent graduates to facilitate their entry into the workforce. These initiatives are part of a broader strategy to meet local needs by enhancing skill levels and employability. UDX have detailed a range of employment and skills related commitments that will be delivered at the Proposed Development.</p> <p>UDX will commit to following mechanisms to be an equal opportunities employer. This commitment makes sure UDX will actively work to eliminate discrimination and ensure that all employees and job applicants are treated fairly and have equal access to opportunities within the organisation. Mechanisms UDX will commit to in order to ensure they are an equal opportunity employer include:</p> <ul style="list-style-type: none"> <li>• Adhering to the Equality Act 2010 or other applicable law, which protects individuals from discrimination based on protected characteristics such as age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, and sexual orientation;</li> <li>• Prohibiting discrimination against applicants and employees based on any protected characteristics;</li> <li>• Ensuring inclusive and accessible application processes; and</li> <li>• Providing regular diversity and inclusion training for staff.</li> </ul> <p>These mechanisms will ensure that groups such as women and ethnic minorities can benefit from employment opportunities at the Proposed Development.</p> <p>Details of UDX's track record in delivering employment and skills initiatives and the commitments that will be delivered as part of the Proposed Development are available the <b>Employment and Skills Plan (Document Reference 6.12.0)</b>.</p> <p>Employment and skills related measures are outlined in <b>Employment and Skills Plan (Document 6.12)</b>, and secured through the <b>Proposed Operative and Controlling Documents (Document Reference 1.16.0)</b>.</p>
	<p><b>Residual Effects</b></p> <p>The sensitivity of residents across the CSA is medium. The magnitude of impact, following mitigation is low. This results in a direct, permanent, long-term, <b>Minor Beneficial (Not Significant)</b> in the Theme Park Opening Year (2031) and the Full Buildout – Future Operational Year (2051) for residents across the CSA.</p> <p>The sensitivity of future workers is medium. The magnitude of impact, following mitigation is medium. This results in a direct, permanent, long-term, <b>Moderate Beneficial (Significant)</b> the Theme Park Opening Year (2031) and the Full Buildout – Future Operational Year (2051) for future workers at the Proposed Development.</p>

## CUMULATIVE EFFECTS

17.6.3. This Population and Human Health assessment is reliant upon the other technical assessments, including **Chapter 5: Traffic and Transport, Chapter 8: Air Quality and Chapter 9: Noise and Vibration (Volume 1)**. Therefore to the extent those are cumulative, the health assessment is also cumulative. In other areas broad trends in health are considered in determining the sensitivity of the



effect. This chapter therefore takes a blended approach, combining project-specific analysis with consideration of wider population health trends.

## **17.7. SUMMARY OF LIKELY SIGNIFICANT EFFECTS AND PROPOSED MITIGATION**

17.7.1. **Table 17-28** below presents a summary of the likely significant effects relating to Population and Human Health as a result of the Proposed Development, and the mitigation measures proposed to avoid, prevent, reduce, or offset (if possible and required) any identified significant adverse effects. The table summarises those effects that were identified within the assessment as likely to be significant prior to the consideration of mitigation. Significant effects are identified as major or moderate. Effects that are identified as negligible or minor are not considered to be significant, and therefore, are not listed in the summary table below.



**Table 17-28 – Summary Of Population And Human Health Likely Significant Effects and Proposed Mitigation**

Key to table:

P / T = Permanent or Temporary, D / I = Direct or Indirect, ST / MT / LT = Short Term, Medium Term or Long Term, N/A = Not Applicable.

Description of effect	Receptor	Additional Mitigation	Classification of Residual Effect	Significant / Not Significant
<b>Construction phase</b>				
Demand for healthcare services	Residents	<p>In the Construction Phase, UDX will implement initial first aid treatment support services designed to provide timely response to a variety of commonly seen urgent/emergent injuries and illnesses presented by team members and contractors. Initial treatment will include basic first aid up to and including the application of basic life support. Basic life support means non-invasive emergency procedures applied to assist in the immediate survival of the patient including cardiopulmonary resuscitation (CPR), application of an automatic external defibrillator (AED), bleeding control, fracture stabilisation, and spinal immobilisation. Patients will be referred to definitive health care when:</p> <ul style="list-style-type: none"> <li>• A life threatening medical emergency is present or presented;</li> <li>• The injury or illness episode cannot be fully assessed or treated within the scope of first-aid;</li> <li>• The illness presents a health risk to others (i.e. communicable disease other than flu/cold);</li> <li>• The condition is chronic or needs ongoing regular health care; and</li> <li>• Where required under public health law, NHS standard of care or when requested by the injured or ill party.</li> </ul> <p>UDX will liaise with the local health care system providers to:</p>	<p><b>Minor to Negligible Adverse</b> (CSA, Peak Year of Construction) T / D / MT</p>	<b>Not Significant</b>

Description of effect	Receptor	Additional Mitigation	Classification of Residual Effect	Significant / Not Significant
		<ul style="list-style-type: none"> <li>• Validate shared understanding of available resources and support opportunities.</li> <li>• Share knowledge of operations and protocols for occupational incidents and return-to-work availabilities.</li> <li>• Communicate patient information and updates.</li> </ul> <p>UDX will liaise with emergency responders to:</p> <ul style="list-style-type: none"> <li>• Discuss site response locations, protocols, and operational risks.</li> <li>• Enhance site familiarity to facilitate efficient and effective incident response.</li> </ul> <p>UDX will:</p> <ul style="list-style-type: none"> <li>• Communicate and gain mutual understanding of on-site rescue/response resources.</li> <li>• Identify agency support and equipment needs.</li> </ul> <p>UDX will offer and provide:</p> <ul style="list-style-type: none"> <li>• On-site emergency drills.</li> <li>• Training opportunities for responder agencies.</li> </ul> <p>Throughout the construction period access for emergency vehicles will be maintained to and around the Site. Any closure to any such routes shall be controlled and managed to maintain access and suitable through routes for emergency vehicles at all times. These mitigation measures are detailed in <b>ES Appendix 2.3: Outline Construction Environmental Management Plan (Volume 3)</b> and it is envisaged that this will be secured by a planning condition.</p>		
Noise and vibration	Residents	<p>The following mitigation measures will be implemented in the Construction Phase at respective sensitive receptors, as per <b>Chapter 9: Noise and Vibration (Volume 1)</b>.</p> <p><u>Noise</u></p>	<p><b>Minor Adverse</b> (NVAA, Peak Year of Construction) T / D / MT</p>	<p><b>Not Significant</b></p>

Description of effect	Receptor	Additional Mitigation	Classification of Residual Effect	Significant / Not Significant
		<ul style="list-style-type: none"> <li>Principal Contractor(s) to employ Best Practicable Means (BPM) to limit construction noise. Further details on mitigation are set out in Section 4 of <b>Appendix 9.2: Construction Noise and Vibration Assessment (Volume 3)</b>.</li> </ul> <p><u>Vibration</u></p> <ul style="list-style-type: none"> <li>Principal Contractor(s) to employ BPM to limit construction vibration. Further details on mitigation set out in Section 4 of <b>Appendix 9.2: Construction Noise and Vibration Assessment (Volume 3)</b>.</li> </ul> <p><u>Road traffic noise</u></p> <ul style="list-style-type: none"> <li>Subcontractors will be encouraged to minimise heavy vehicle movements to the Site by means of consolidating payloads. A delivery management system will also be used to regulate the flow of heavy vehicles to and from the Site and minimise the number of arrivals per hour.</li> </ul> <p>Despite these mitigation measures, adverse effects generated by noise and vibration are expected to remain significant in the construction phase.</p> <p>As outlined in <b>Appendix 2.3: Outline Construction Environmental Management Plan (Volume 3)</b>, the following mitigation measures will be implemented in the construction phase to mitigate the health impacts of noise generation.</p> <p><u>Advance community notification of out-of-hours or night-time works</u></p> <p>UDX will compel the Principal Contractor(s) to issue “look-ahead” bulletins detailing the location, nature, timing and expected duration of any works scheduled outside standard</p>		

Description of effect	Receptor	Additional Mitigation	Classification of Residual Effect	Significant / Not Significant
		<p>hours, together with the noise-control measures to be employed.</p> <p>Information will be distributed at least five working days in advance through real-time updates via a project website and/or SMS alert system.</p> <p><u><i>Appointment and proactive deployment of a Community Liaison Officer (CLO)</i></u></p> <p>A dedicated CLO will act as the single point of contact for residents, Bedford Borough Council and other stakeholders. Responsibilities will include:</p> <ul style="list-style-type: none"> <li>• Maintaining the notification systems above;</li> <li>• Logging, investigating and responding to all noise-related enquiries;</li> <li>• Reporting quarterly to the Principal Contractor(s) and MHCLG on enquiries received and actions taken; and</li> <li>• Attending meetings with socio-economic taskforce.</li> </ul> <p>These impacts are only expected to endure over a 5-year construction period. These impacts are temporary, not persistent. Whilst there will be ongoing construction to reach the point of full buildout in 2051, the level of construction in this period will be insignificant in comparison to the level of construction experienced between 2026 and 2031.</p> <p>These mitigation measures are detailed in <b>ES Appendix 2.3: Outline Construction Environmental Management Plan (Volume 3)</b> and it is envisaged that this will be secured by a planning condition.</p>		
Air quality	Residents	Additional mitigation measures to minimise the risk of dust impacts are set out in Section 3.6 of the Outline Construction	<b>Minor to Negligible Adverse</b> (AQAA, Peak	<b>Not Significant</b>

Description of effect	Receptor	Additional Mitigation	Classification of Residual Effect	Significant / Not Significant
		<p>Environmental Management Plan (<b>Appendix 2.3: Outline Construction Environmental Management Plan (Volume 3)</b>). The Principal Contractor(s) will be required to demonstrate use of Best Practicable Means at all times during the works in mitigating emissions from construction sites and activities. Based on <i>IAQM guidance</i>, measures are required for Site management, monitoring, preparation and maintenance of the Site, operating vehicles/machinery and sustainable travel, general operations, earthworks, construction and trackout. These mitigation measures are detailed in <b>ES Appendix 2.3: Outline Construction Environmental Management Plan (Volume 3)</b> and it is envisaged that this will be secured by a planning condition.</p>	Year of Construction) T / D / MT	
Changes to local traffic	Residents	n/a	<b>Minor Adverse</b> (Local Area, Peak Year of Construction) T / D / MT	<b>Not Significant</b>
Changes to local public transport and active travel	Residents	n/a	<b>Minor to Negligible Adverse</b> (Local Area, Peak Year of Construction) T / D / MT	<b>Not Significant</b>
Presence of construction workforce	Residents	<p>Construction workers will adhere to a code of conduct. The code of conduct contains enforcement provisions designed to ensure that the entire workforce have no impact on the local community in terms of antisocial behaviour, vandalism, property destruction or other types of social crime. These mitigation measures are detailed in <b>ES Appendix 2.3: Outline Construction Environmental Management Plan</b></p>	<b>Negligible</b> (Local Area, Peak Year of Construction) T / D / MT	<b>Not Significant</b>

Description of effect	Receptor	Additional Mitigation	Classification of Residual Effect	Significant / Not Significant
		(Volume 3) and it is envisaged that this will be secured by a planning condition.		
Employment and training opportunities	Residents	<p>The <b>Employment and Skills Plan (Document Reference 6.12.0)</b> provides evidence of UDX’s track record in delivering good quality employment and training and includes explicit commitments that the Principal Contractor(s) will have to commit to during construction which are in line with best practice and will deliver good quality employment and training opportunities for workers.</p> <p>Wider employment and skills commitments will benefit wider residents of the CSA.</p> <p>Employment and skills related measures are outlined in <b>Employment and Skills Plan (Document 6.12)</b>, and secured through the <b>Proposed Operative and Controlling Documents (Document Reference 1.16.0)</b>.</p>	<p><b>Minor Beneficial</b> (Peak Year of Construction, Peak Year of Construction) T / D / MT</p>	<b>Not Significant</b>
Employment and training opportunities	Future workers	<p>The <b>Employment and Skills Plan (Document Reference 6.12.0)</b> provides evidence of UDX’s track record in delivering good quality employment and training and includes explicit commitments that the Principal Contractor(s) will have to commit to during construction which are in line with best practice and will deliver good quality employment and training opportunities for workers.</p> <p>Wider employment and skills commitments will benefit wider residents of the CSA.</p> <p>Employment and skills related measures are outlined in <b>Employment and Skills Plan (Document 6.12)</b>, and secured through the <b>Proposed Operative and Controlling Documents (Document Reference 1.16.0)</b>.</p>	<p><b>Moderate Beneficial</b> (CSA, Peak Year of Construction) T / D / MT</p>	<b>Significant</b>
<b>Operation phase</b>				

Description of effect	Receptor	Additional Mitigation	Classification of Residual Effect	Significant / Not Significant
Effect on community of new sports provision	Residents	n/a	<b>Moderate Beneficial</b> (CSA, Full Buildout – Future Operational Year) P / D / LT	<b>Significant</b>
Demand for healthcare services	Residents	<p>UDX will implement initial first aid treatment support services designed to provide timely response to a variety of commonly seen urgent/emergent injuries and illnesses presented by guests, team members, contractors, or third-party on-site vendors. Initial treatment will include basic first aid up to and including the application of basic life support. Basic life support means non-invasive emergency procedures applied to assist in the immediate survival of the patient including cardiopulmonary resuscitation (CPR), application of an automatic external defibrillator (AED), bleeding control, fracture stabilisation, and spinal immobilisation. Patients will be referred to definitive health care when:</p> <ul style="list-style-type: none"> <li>• A life threatening medical emergency is present or presented;</li> <li>• The injury or illness episode cannot be fully assessed or treated within the scope of first-aid;</li> <li>• The illness presents a health risk to others (i.e. communicable disease other than flu/cold);</li> <li>• The condition is chronic or needs ongoing regular health care; and</li> <li>• Where required under public health law, NHS standard of care or when requested by the injured or ill party.</li> </ul> <p>In addition to the emergent incident services noted above, UDX will provide wellness support to Team Members as follows:</p> <ul style="list-style-type: none"> <li>• Implement, maintain, and monitor mitigations to reduce workplace occupational safety and health risks in alignment with UDX Standards to include ergonomics, occupational</li> </ul>	<b>Minor to Negligible Adverse</b> (CSA, Theme Park Opening Year, Full Buildout – Future Operational Year) P / D / LT	<b>Not Significant</b>

Description of effect	Receptor	Additional Mitigation	Classification of Residual Effect	Significant / Not Significant
		<p>contaminants, and environmental exposures to support general health and well-being, bolster labour resource availability and retention, and minimise operational downtime from incidents; and</p> <ul style="list-style-type: none"> <li>Design programs for screening/surveillance for the initial stages of occupational health issues in alignment with UDX standard.</li> </ul> <p>UDX will liaise with the local health care system providers to validate shared understanding of available resources and support opportunities, share knowledge of operations and protocols for occupational incidents and return to work availabilities, and patient communications and information. UDX will also liaise with emergency responders related to site response locations, protocols, operational risks, and site familiarity to facilitate efficient and effective incident response. UDX will communicate and gain mutual understanding of on-Site rescue/response resources and identification of agency support and equipment needs. UDX will also offer and provide on-Site emergency drills and training opportunities for responder agencies.</p> <p>These mitigation measures are secured in the <b>Security and Emergency Management Plan (Document Reference 6.4.2.0)</b>.</p>		
Noise and vibration	Residents	<p>It is understood that Vine Cottages have been purchased by UDX will be demolished and will therefore no longer be considered a sensitive receptor.</p> <p>The control of noise from the operation of the Proposed Development is based around the achievement of noise limits at the RCLs, rather than relying on and committing to specific mitigation measures.</p>	<p><b>Minor Adverse</b> (NVAA, Theme Park Opening Year, Full Buildout – Future Operational Year) P / D / LT</p>	<p><b>Not Significant</b></p>

Description of effect	Receptor	Additional Mitigation	Classification of Residual Effect	Significant / Not Significant
Employment and training opportunities	Future workers	<p>UDX has established a reputation for implementing successful employment and training initiatives and is committed to collaborating with local government and education and skills providers to launch similar programmes that cater specifically to the local employment and skill needs. UDX is experienced in delivering in-work training, apprenticeships, and internships, which can also be delivered at the Proposed Development.</p> <p>The UDX existing apprenticeship programme supports those aiming for technical careers by offering comprehensive on-the-job learning and classroom instruction in collaboration with local educational institutions. With hundreds of current participants, the programme covers areas such as ride maintenance, utilities, and restaurant equipment maintenance. The internships offered by UDX across various Universal locations provide immersive experiences and networking opportunities, targeting students and recent graduates to facilitate their entry into the workforce. These initiatives are part of a broader strategy to meet local needs by enhancing skill levels and employability. UDX have detailed a range of employment and skills related commitments that will be delivered at the Proposed Development.</p> <p>UDX will commit to following mechanisms to be an equal opportunities employer. This commitment makes sure UDX will actively work to eliminate discrimination and ensure that all employees and job applicants are treated fairly and have equal access to opportunities within the organisation. Mechanisms UDX will commit to in order to ensure they are an equal opportunity employer include:</p> <ul style="list-style-type: none"> <li>Adhering to the Equality Act 2010 or other applicable law, which protects individuals from discrimination based on protected characteristics such as age, disability, gender reassignment, marriage and civil partnership, pregnancy</li> </ul>	<p><b>Moderate Beneficial</b>            (CSA, Theme Park Opening Year, Full Buildout – Future Operational Year)            P / D / LT</p>	<p><b>Significant</b></p>

Description of effect	Receptor	Additional Mitigation	Classification of Residual Effect	Significant / Not Significant
		<p>and maternity, race, religion or belief, sex, and sexual orientation;</p> <ul style="list-style-type: none"> <li>• Prohibiting discrimination against applicants and employees based on any protected characteristics;</li> <li>• Ensuring inclusive and accessible application processes; and</li> <li>• Providing regular diversity and inclusion training for staff.</li> </ul> <p>These mechanisms will ensure that groups such as women and ethnic minorities can benefit from employment opportunities at the Proposed Development.</p> <p>Details of UDX’s track record in delivering employment and skills initiatives and the commitments that will be delivered as part of the Proposed Development are available in The <b>Employment and Skills Plan (Document Reference 6.12.0)</b>.</p> <p>Employment and skills related measures are outlined in <b>Employment and Skills Plan (Document 6.12)</b>, and secured through the <b>Proposed Operative and Controlling Documents (Document Reference 1.16.0)</b>.</p>		

## 17.8. REFERENCES

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