England's Economic Heartland

ASSESSMENT OF STRATEGIC CORRIDORS

Appendix C to the ISA

JUNE 2020

PUBLIC

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TYPE OF DOCUMENT (VERSION) PUBLIC

PROJECT NO. 70068182

DATE: JUNE 2020

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QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3	Revision 4
Remarks	Sample Draft	Draft	For client review	Final Review	Final for Consultation
Date	April 2020	May 2020	May 2020	May 2020	June 2020
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Project number	70068182	70068182	70068182	70068182	70068182
Report number	01	02	03	04	05
File reference					

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1 INTRODUCTION

1.1 INTRODUCTION

1.1.1. The assessment of transport corridors forms part of Stage B of the Integrated Sustainability Appraisal (ISA) process, which aims to assess alternative options or groups of options, in addition to the policies set out in the Transport Strategy.

1.2 CORRIDOR SHORTLIST

1.2.1. Following engagement with partners, a sifting process of an original 'long list' of corridors for consideration in the development of a programme of connectivity studies was undertaken. The corridors have been informed by previous discussions of the Strategic Transport Forum, Transport Officer Group and through engagement on the Outline Transport Strategy. From the original long list, a short list of corridors was identified for assessment in the ISA. The short list corridor options are outlined in Table 1.1 below.

1.2.2. The geographies, naming and scoping of the corridors are likely to change over time. The assessments of corridors for the ISA were undertaken during the process of development of the programme of connectivity studies and therefore represent assessment at a specific point in time. This assessment for the ISA, alongside ongoing assessment of corridors, will help inform the programme of connectivity studies going forward.

1.2.3. Given the iterative nature of the Transport Strategy, it should be noted that the corridor names listed in Table 1.1 do not reflect the list within the current Transport Strategy, although the general geographies are similar.

1.2.4. At this stage the study areas within each corridor are indicative and have no fixed defined boundaries; instead they follow general transport patterns within the England's Economic Heartland (EEH) Region.

1.2.5. EEH will be using this assessment to help determine their future programme of corridor studies. Not all of the shortlisted corridors below will be in the final programme of studies; however, this assessment will help inform the final list of corridors.

Table 1.1 – Corridor Shortlist

Corridor No.	Corridor Name
1	Oxfordshire - Milton Keynes Connectivity Study Area
2	North - South connections (A1 region)
3	Luton – Bedford - Northamptonshire
4	Oxford to Swindon/ the South West
5	(London) - Buckinghamshire-MK-Northampton
6	Watford - Aylesbury - Bicester - M40

Corridor No.	Corridor Name
7	East West connections between M40 and A1
8	M11 - Luton
9	London – Stevenage – Cambridge – Ely
10	Peterborough - Northampton - Oxford
11	Luton - East of Milton Keynes
12	M4 – Didcot – Oxford
13	Oxford – M40 Junctions
14	"North Northamptonshire" Northampton - Wellingborough –- Huntingdon/Alconbury
15	A508 Northampton – Milton Keynes
16	Northampton - Corby – Wellingborough
17	Hemel Hempstead - Hatfield - Harlow
18	Luton to Dunstable and Houghton Regis
19	Luton - Hemel Hempstead

1.3 ASSESSMENT APPROACH

1.3.1. The assessment of each of the 19 corridors has been undertaken using spatial indicators for each of the ISA Sustainability Objectives, as shown in Table 1.3 below. The sensitivities and opportunities within each of the corridors and an additional 2km buffer have been identified, and the potential for sensitivity to significant effects highlighted. The key for the assessment of potential sensitivity to significant effects is as follows:

Table 1.2 – Key to Potential Sensitivities

Key to Potential Sensitivities	
Likely to be sensitive to positive effect	+
Negligible or no effect	0
Likely to be sensitive to negative effect	-
Likely to be sensitive to both positive and negative effects	+/-

1.3.2. Table 1.3 below outlines the key spatial indicators used for assessing each of the corridor options against the Sustainability Objectives and a guide to how this information was used to draw conclusions on the potential sensitivities of each indicator.

1.3.3. Given the strategic nature of the assessment, the indicators used are generally limited to national datasets. Once transport solutions come forward as part of the implementation of the Transport Strategy at a local level, these local indicators can be then be applied, and assessed in greater detail. It should also be noted that some of these spatial indicators could be subject to change.

Table 1.3 – Spatial Indicators

SA Topic	Spatial Indicator	Sensitivity Scoring Rationale
SA1. Population and Equalities	IMD Deprivation[1]	This data was based at local authority level. 2019 overall rankings were used to work out the overall sensitives. Generally, where deprivation was low, corridors were deemed to be more resilient to change and scored more positively.
	Local Plan Strategic Housing Sites[2]	Transport developments within this corridor are likely to compliment future housing, through the potential delivery of sustainable transport modes and the provision of greater access to jobs, facilities and services. It was therefore generally considered that this indicator would be sensitive to the positive effects of the Transport Strategy. Where there is no planned future housing, no effects have been identified.
	Usual Resident Population[3]	This indicator was used to see population densities. Where there was a mix of rural and urban populations, it was generally identified that they could be sensitive to both positive and negative effects, depending on the proposals that were to come forward. As identified at the scoping stage, rural communities often face issues with connectivity and isolation, when compared to the region's towns and cities. There is potential for development to benefit both the rural and urban populations within the corridor, however, proposals coming forward would need to ensure that it supports both urban and rural communities, in order to avoid disproportionate effects.
SA2. Economy	Economic Activity[4]	This looked at key areas with high economic activity. It was generally considered that the transport strategy could complement these key areas, and therefore sensitivities to positive effects were identified. Where these weren't located

[1] Ministry of Housing Communities and Local Government, The English Indices of Deprivation, 2019
[2] EEH ProjectView – Tempro Planning Forecast (Tab 34)
[3] EEH ProjectView – Resident Population (Tab 3)
[4] EEH Outline Transport Strategy

SA Topic	Spatial Indicator	Sensitivity Scoring Rationale
		in the corridors, it was deemed likely to be sensitive to both positive and negative effects. The transport strategy could support greater connectivity to areas of high economic activity, but this would depend on the proposals coming forward.
	GVA[5]	This data was based at local authority level. Where GVA values are consistently high across the corridor, corridors were scored positively as transport infrastructure and development is likely to continue strengthen the overall contribution to the economy. A mixture of high and low GVA values resulted in potential for sensitivities to both positive and negative effects. Although it is likely that the transport strategy could result in an increase in GVA values, however, it would be dependent upon the types of schemes that were to come forward. For example, a new footpath or cycleway is unlikely to significantly change the GVA values.
	Local Plan Employment Sites[2]	It was generally considered that the transport strategy could complement new strategic employment sites, therefore corridors with developments were deemed to be sensitive to positive effects.
SA3. Human Health	IMD Health[1]	This data was based at lower super output area (neighbourhood) level. We used 2019 overall rankings to work out the overall sensitives. Generally, where health deprivation was low, corridors were deemed to be more resilient to change and scored more positively.
	Percent Physically Active Adults (19+) [6]	Local authority level data from Public Health England has been used. This looks at whether statistics are significantly better, similar or significantly worse than the national average. Where the majority of the population are significantly better than the national average, the populations have been deemed to be more likely to be sensitive to the positive effects associated with future development, and their health more resilient to change. The opposite effect is seen where the majority of Local authorities are significantly worse. It is dependent upon proposals too e.g. a new cycle path network could be beneficial, but if it just road improvements are made, it might worsen the current baseline. The better the current baseline situation is the more resilient they will be to change.
	Excess Weight in Adults (18+) [6]	

[5] ONS, Regional gross value added (balanced) by industry: local authorities by NUTS1 region, 2019
[6] Public Health England, Local Authority Health profiles

SA Topic	Spatial Indicator	Sensitivity Scoring Rationale
SA4. Community Safety	IMD Crime [1]	This data was based at lower super output area (neighbourhood) level. We used 2019 overall rankings to work out the overall sensitives. Generally, where crime deprivation was low, corridors were deemed to be more resilient to change and scored more positively.
	KSI [6]	Local authority level data from Public Health England has been used. This looks at whether statistics are significantly better, similar or significantly worse than the national average. Where the KSI figures are better than the national average positive effects have been identified, as communities are likely to be more resilient to change. Conversely where it is similar or significantly worse, it is likely to be sensitive to both positive and negative effects, depending on what proposals were to come forward.
	Accidents (Stat 19)[7]	The assessment looks at the number of serious and fatal accidents on the roads. Sensitivity of this receptor would be highly dependent upon where development takes place and the type of developments that come forward. Where no serious or fatal accidents have occurred, a negligible effect has been recorded.
SA5. Biodiversity[8]	SAC	The assessment looks at the number of sites which fall within the corridor boundary as well as the 2km buffer. Where sites are identified, negative sensitivities have been recorded. Where there are no sites, no effect has been recorded with regard to that indicator. There may be further local ecological indicators that haven't been considered at this stage, which may be sensitive to negative effects.
	SPA	
	Ramsar	
	SSSI	
	NNR	
SA6 Natural Capital and Ecosystem Services	Carbon storage[9]	The assessment looks at the approximate amount of carbon stored within the vegetation and topsoil. Soil and vegetation carbon could be released due to potential land-use changes within the corridors. It looks at the approximate tonnes of carbon per hectare. Where the average carbon stock is medium to high (57+ tonnes) negative effects have been identified. Where numbers fall below this, neutral effect have been identified.

[7] ProjectView – Accidents (Tab 33)
[8] Natural England Open Data Geoportal
[9] Henrys, P.A.; Keith, A.M.; Robinson, D.A.; Emmett, B.A. (2012). Model estimates of topsoil carbon [Countryside Survey]. NERC Environmental Information Data Centre. [online] available at: http://doi.org/10.5285/9e4451f8-23d3-40dc-9302-73e30ad3dd76

SA Topic	Spatial Indicator	Sensitivity Scoring Rationale
	Nectar Plant Diversity[10]	Wild pollinators such as bees are important for food production and wildflowers which themselves significantly contribute to cultural ecosystem services. Land-use changes could impact on nectar plant diversity. The assessment looks at the mean estimates of number of nectar plant species for bees per 2×2m plot. Where corridors have medium to high values (4.7+ nectar plants) negative effects have been identified. Where numbers fall below this, neutral effect have been identified.
	Accessible Greenspace[11]	The assessment looks at the quantity of accessible green space across the region. This has generally resulted in the potential for both positive and negative effects. Development has potential to fragment or remove greenspace, but also has the potential to provide more greenspace and greater access to them, across the region.
SA7. Landscape and Townscape[8]	AONB	The assessment looks at the number of AONBs which fall within the corridor boundary as well as the 2km buffer. Where sites are identified, negative sensitivities have been recorded. Where there are no sites, no effect has been recorded.
	National Trails	Where the corridor intersects a national trail there is the potential for them to be sensitive to both the negative and positive effects of development, depending on proposals that come forward. e.g. Severance will result in negative impacts, whilst provision of greater access could result in positive impacts.
	Greenbelt	The assessment looks at the local authority greenbelt land which falls within the corridor boundary as well as the 2km buffer. Where areas are identified, negative sensitivities have been recorded. Where there are no areas, no effect has been recorded.
SA8. Historic Environment[12]	World Heritage Sites	The assessment looks at the number of sites which fall within the corridor boundary as well as the 2km buffer. Where sites are identified, negative sensitivities have been recorded. Where there are no sites, no effect has been recorded with regards to that indicator. There may be further local historic indicators that have not been considered at this stage, which may be sensitive to negative effects.
	Scheduled Monuments	
	Historic Parks & Gardens	
	Historic Battlefields	

[10] Maskell, L.; Henrys, P.; Norton, L.; Smart, S. (2016). Bee nectar plant diversity of Great Britain. NERC Environmental Information Data Centre. [online] available at: http://doi.org/10.5285/623a38dd-66e8-42e2-b49f-65a15d63beb5
[11] Ordnance Survey, Open Greenspace
[12] Historic England Listing Data

SA Topic	Spatial Indicator	Sensitivity Scoring Rationale
SA9. Water Environment[13]	Water Source Protection Zones	The Environment Agency have defined source protection zones (SPZs) – these are zones which show the level of risk to the source from contamination, which could be caused by any activity that might cause pollution in the area. Where there are no SPZs, no effects have been identified.
	Water Sensitive Areas	Water sensitive areas currently have issues with eutrophication and/or nitrates, which may make them less resilient to change. Where these intersect the corridor, negative sensitivities have been identified. Where there are no water sensitive areas, no effects have been identified.
	Drinking Water Safeguard Zones	Safeguard zones are used for areas around abstractions where water quality is poor. Future development could result in the need for increased abstractions, which could put additional stress on these zones and make them less resilient to change. These safeguarded zones are therefore likely to be more sensitive to the negative effects arising from future development within the corridor. Where there are no safeguard zones, no effects have been identified.
	Flood Zones (2 and 3)	The assessment looks at the number of flood zones that intersect the corridor, and the key risk areas. Future developments within these areas are likely to be less resilient to change and more sensitive to the negative effects arising from potential development. Where there are no flood zones, no effects have been identified.
SA10. Air Quality	AQMA[14]	The assessment looks at the number of AQMAs that fall within the corridor and its 2km buffer. AQMAs have potential to be sensitive to both the negative and positive effects of future corridor development. Providing more sustainable transport modes could result in positive effects, however, road developments that could increase traffic volumes could result in a negative effect on AQMAs, by worsening the current situation. Where there are no AQMAs, no effects have been identified.
	CO2 Emissions [15]	The assessment uses local authority level data and compares the Kt of CO2 emissions. Where all local authorities perform below the national average, there is potential for this receptor to be more resilient and sensitive to the positive effects arising from development. Those areas with high emissions have potential to be sensitive to both the

[13] Environment Agency
[14] Defra -AQMA
[15] ProjectView – CO2 Estimates (Tab 40)

SA Topic	Spatial Indicator	Sensitivity Scoring Rationale
		positive and negative effects, depending on the proposals that come forward.
SA11. Climate Change and Greenhouse Gases	Flood Risk Areas[13]	The assessment looks at the number of flood risk areas that intersect the corridor, and the key risk areas. Future developments within these areas are likely to be less resilient to change and more sensitive to the negative effects arising from potential development. Where there are no flood zones, no effects have been identified.
	Per Capita Emissions[15]	The assessment uses local authority level data and compares the per capita emissions. Where all local authorities perform better than the national average, there is potential for this receptor to be more resilient and sensitive to the positive effects arising from development. Those areas with high per capita emissions have potential to be sensitive to both the positive and negative effects, depending on the proposals that come forward.
SA12. Soil, Land Use, Resource and Waste	Agricultural Land Classification[8]	The assessment looks at the quality of the agricultural land across the corridor. Where the land is of predominantly urban land classification there's potential for ground remediation and supports the use of previously developed land, thus protecting high quality soil resources. Where agricultural land quality is high, negative sensitivities have been identified.
	Historic Landfill Sites[13]	If there are any sites, these could be sensitive to both positive and negative effects, as it may provide opportunities for ground remediation, as per the SA objective.
SA13. Noise and Vibration[16]	Noise Action Important Areas	Both indicators have potential to be to be sensitive to both negative and positive effects of future corridor development and would be highly dependent upon the nature of the proposals that come forward. If there are no noise sites there is no effect.
	Noise Directive Agglomerations	

[16] Defra Spatial Data

2 ASSESSMENT FINDINGS

2.1 INTRODUCTION

2.1.1. This section presents an overview of each of the corridor assessments and the key sustainability features identified during the assessment. The overall findings of the assessment are summarised in Table 2.1 below.

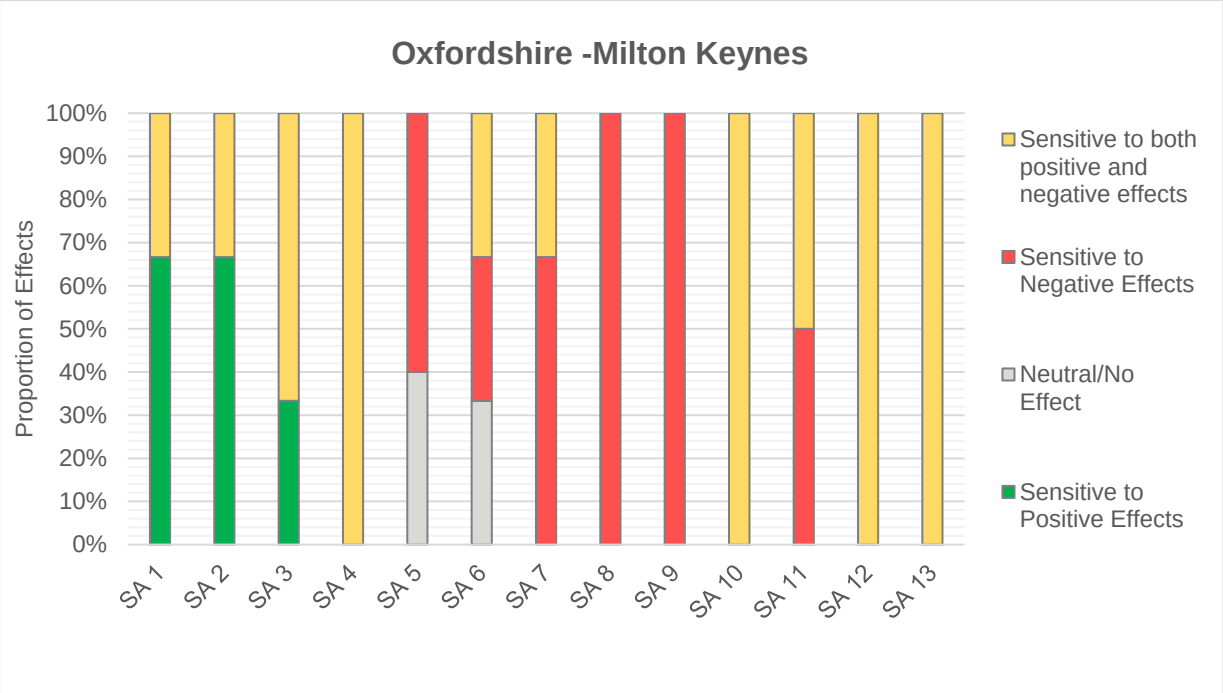
Table 2-1 – Assessment Findings Overview

SA Topic	Population and Equalities			Economy			Human Health			Community Safety			Biodiversity			Natural Capital and Ecosystem Services			Landscape and Townscape			Historic Environment			Water Environment			Air Quality			Climate Change Greenhouse Gases			Soil, Land Use, Resource and Waste			Noise and Vibration		
Corridor Name	IMD Deprivation	Local Plan Strategic Housing Sites	Usual Resident Population	Economic Activity	GVA	Local Plan Employment Sites	IMD Health	Percent Physically Active Adults (19+)	Excess Weight in Adults (18+)	IMD Crime	KSI	Collisions	SAC	SPA	Ramsar	SSSI	NNR	Carbon storage	Nectar Plant Diversity	Accessible Greenspace	AONB	National Trails	Greenbelt	World Heritage Sites	Scheduled Monuments	Historic Parks and Gardens	Historic Battlefields	Water Source Protection Zones	Water Sensitive Areas	Drinking Water Safeguard Zones	Flood Zones (2 and 3)	AQMA	CO2 Emissions	Flood Risk Areas	Per Capita Emissions	Agricultural Land Classification	Historic Landfill Sites	Noise Action Important Areas	Noise Directive Agglomerations
Oxfordshire-Milton Keynes Connectivity Study	+	+	+/-	+	+/-	+	+/-	+	+/-	+/-	+/-	+/-	-	0	0	-	-	-	0	+/-	-	+/-	-	-	-	-	-	-	-	-	-	+/-	+/-	-	+/-	+/-	+/-	+/-	+/-
North - South connections (A1 region)	+/-	+	+/-	+	+/-	+	+/-	+/-	+/-	+/-	+/-	+/-	-	-	-	-	-	0	0	+/-	0	0	-	0	-	-	-	-	-	-	-	+/-	+/-	-	+/-	-	+/-	+/-	+/-
Luton – Bedford – Northamptonshire	+/-	+	+/-	+	+/-	+	+/-	+/-	+/-	+/-	+/-	+/-	0	-	-	-	-	0	-	+/-	-	0	-	0	-	-	0	-	-	-	-	+/-	+/-	-	+/-	-	+/-	+/-	+/-
Oxford to Swindon/ the South West	+	+	+/-	+	+/-	+	+/-	+	+/-	+/-	+/-	+/-	-	0	0	-	-	-	-	+/-	-	+/-	-	0	-	-	0	0	-	-	-	+/-	+/-	-	+/-	-	+/-	+/-	+/-
(London) - Buckinghamshire-MK-Northampton	+/-	+	+/-	+	+/-	+	+/-	+/-	+/-	-	+/-	+/-	-	-	-	-	-	-	-	+/-	-	+/-	-	-	-	-	-	-	-	-	-	+/-	+/-	-	+/-	+/-	+/-	+/-	+/-
Watford - Aylesbury - Bicester - M40	+	+	+/-	+	+/-	+	+	+/-	+	+/-	+/-	+/-	-	0	0	-	0	-	-	+/-	-	+/-	-	0	-	-	0	-	0	-	-	+/-	+/-	-	+/-	+/-	+/-	+/-	+/-
East West connections between M40 and A1	+/-	+	+/-	+	+/-	+	+/-	+/-	+/-	+/-	+/-	+/-	-	-	-	-	-	-	-	+/-	0	+/-	-	0	-	-	-	0	-	-	-	+/-	+/-	-	+/-	+/-	+/-	+/-	+/-
M11 - Luton	+/-	+	+/-	+	+/-	+	+/-	-	+	+/-	+/-	+/-	0	0	0	-	-	0	-	+/-	-	0	-	0	-	-	0	-	-	-	-	+/-	+/-	-	+/-	+/-	+/-	+/-	+/-
London – Stevenage – Cambridge – Ely	+	+	+/-	+	+/-	+	+/-	+/-	+	+/-	+/-	+/-	-	-	-	-	-	-	0	+/-	0	0	-	0	-	-	0	-	-	-	-	+/-	+/-	-	+/-	-	+/-	+/-	+/-
Peterborough - Northampton - Oxford	+/-	+	+/-	+	+/-	+	+/-	-	-	+/-	+/-	+/-	-	-	-	-	-	-	-	+/-	0	+/-	-	-	-	-	-	-	-	-	-	+/-	+/-	-	+/-	-	+/-	+/-	+/-

SA Topic	Population and Equalities			Economy			Human Health			Community Safety			Biodiversity			Natural Capital and Ecosystem Services			Landscape and Townscape			Historic Environment			Water Environment			Air Quality			Climate Change Greenhouse Gases			Soil, Land Use, Resource and Waste			Noise and Vibration		
Corridor Name	IMD Deprivation	Local Plan Strategic Housing Sites	Usual Resident Population	Economic Activity	GVA	Local Plan Employment Sites	IMD Health	Percent Physically Active Adults (19+)	Excess Weight in Adults (18+)	IMD Crime	KSI	Collisions	SAC	SPA	Ramsar	SSSI	NNR	Carbon storage	Nectar Plant Diversity	Accessible Greenspace	AONB	National Trails	Greenbelt	World Heritage Sites	Scheduled Monuments	Historic Parks and Gardens	Historic Battlefields	Water Source Protection Zones	Water Sensitive Areas	Drinking Water Safeguard Zones	Flood Zones (2 and 3)	AQMA	CO2 Emissions	Flood Risk Areas	Per Capita Emissions	Agricultural Land Classification	Historic Landfill Sites	Noise Action Important Areas	Noise Directive Agglomerations
Luton - East of Milton Keynes	+	+	+/-	+	+	+	+	+/-	0	+/-	+/-	+/-	0	0	0	-	-	-	-	+/-	-	0	-	0	-	-	0	-	-	-	-	+/-	+/-	-	+/-	+/-	+/-	+/-	+/-
M4 – Didcot – Oxford	+	+	+/-	+	+/-	+	+/-	+	+	+/-	+/-	+/-	-	0	0	-	-	-	-	+/-	-	+/-	-	-	-	-	0	0	-	-	-	-	+/-	-	+/-	-	+/-	+/-	+/-
Oxford – M40 Junctions	+	+	+/-	+	+/-	+	+/-	+	+	+/-	+/-	+/-	-	0	0	-	-	-	-	+/-	-	-	-	0	-	-	-	-	-	-	-	+/-	+/-	+/-	+/-	-	+/-	+/-	+/-
Northampton - Wellingborough –- Huntingdon/Alconbury	+	+	+/-	+	+/-	+	+/-	+/-	-	+/-	+	+/-	0	-	-	-	0	-	0	+/-	0	0	0	0	-	-	-	0	-	-	-	0	+/-	-	+/-	-	+/-	+/-	0
A508 Northampton – Milton Keynes	+/-	+	+/-	+	+/-	+/-	+/-	+/-	-	+/-	+	+/-	0	-	-	-	0	-	-	+/-	0	0	0	0	-	-	-	-	-	-	-	+/-	+/-	-	+/-	-	+/-	+/-	+/-
Northampton - Corby - Wellingborough	+/-	+	+/-	+	+/-	+	+/-	+/-	-	+/-	+	+/-	0	-	-	-	0	-	0	+/-	0	0	0	0	-	-	-	-	-	-	-	+/-	+/-	-	+/-	-	+/-	+/-	+/-
Hemel Hempstead - Hatfield - Harlow	+	+	+/-	+	+/-	+	+/-	+	+	+/-	+	+/-	-	-	-	-	-	-	-	+/-	-	0	-	0	-	-	0	-	-	-	-	+/-	+/-	-	+/-	+/-	+/-	+/-	+/-
Luton to Dunstable and Houghton Regis	+/-	+	+/-	+	+	+	+/-	+/-	0	+/-	+/-	+/-	0	0	0	-	0	-	-	+/-	-	0	-	0	-	-	0	-	0	-	-	+/-	+/-	-	+/-	+/-	+/-	+/-	+/-
Luton - Hemel Hempstead	+/-	+	+/-	+	+	+	+/-	+/-	+/-	+/-	+/-	+/-	0	0	0	-	0	-	-	+/-	-	0	-	0	-	-	0	-	-	-	-	-	+/-	-	+/-	+/-	+/-	+/-	+/-

2.2 OXFORDSHIRE - MILTON KEYNES CONNECTIVITY STUDY AREA

Figure 2-1 - Oxfordshire - Milton Keynes Study Area



OVERVIEW

2.2.1. The overall sustainability performance of the study area is mixed, with the socio-economic and human health indicators outperforming the environmental indicators. The study area covers a vast area including Oxfordshire, Buckinghamshire, Hertfordshire Milton Keynes and parts of Northamptonshire, and has no true red line boundary.

2.2.2. The study area benefits from generally low levels of overall deprivation and high levels of economic activity, particularly in Milton Keynes and Oxford. The GVA values in both Milton Keynes and Oxford are some of the highest in the region at £12 billion and £6.7 billion respectively.

2.2.3. Despite levels of mixed health deprivation and adults with excess weight, the study area has higher than average levels of physical activity. The Transport Strategy could present opportunities to increase recreation and active travel, but it could also inadvertently encourage an increased reliance upon private transport, through improved connectivity. However, given the high levels of physical activity within the corridor, the populations within the corridor are likely to be more resilient to change and therefore more sensitive to the positive effects associated with future development.

2.2.4. There are a number of ecological, landscape and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor, and are therefore less likely to be resilient to change and more sensitive to the negative effects associated with future development.

2.2.5. The Thames Path and the Ridgeway National Trails both fall within the corridor boundary. There is potential for both trails to be sensitive to both the negative and positive effects of development, depending on the proposals that come forward. For example, severance will result in negative impacts, whilst provision of greater access could result in positive impacts.

2.2.6. The water environment has the potential to be sensitive to the negative effects of development, particularly with regards to flooding, water source protection zones and drinking water safeguard zones. Key flood zones are identified in Aylesbury, Oxford, Bicester, Leighton Buzzard, Milton Keynes and Buckingham.

KEY SUSTAINABILITY FEATURES

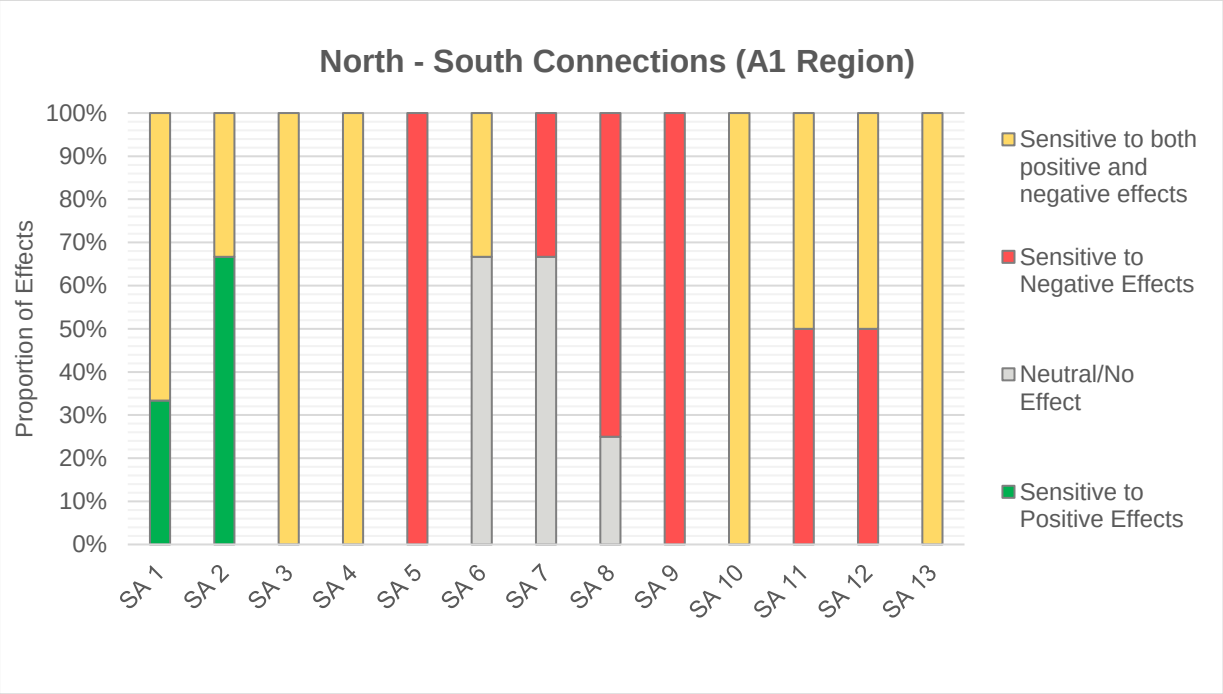
2.2.7. Key sustainability features of the Oxfordshire - Milton Keynes Connectivity Study Area include:

- There are overall low levels of deprivation, but both crime and health deprivation are varied with a number of deprived neighbourhoods located in Oxford and Milton Keynes;
- There 59 major housing developments planned across the corridor, plus 5 additional developments within the 2km buffer;
- Oxford, Milton Keynes and Aylesbury have high levels of economic activity and high GVA values, however, South Northamptonshire has disproportionately lower GVA values at £1.7 billion;
- The percentage of the adult population classed as either overweight or obese across the corridor varies. Hertfordshire, Oxfordshire and Buckinghamshire have significantly lower levels compared to the national average, whilst Northamptonshire is significantly higher;
- The number of people who are killed or seriously injured on the roads is significantly worse than the national average in Central Bedfordshire and significantly better in Milton Keynes, Buckinghamshire and Hertfordshire. The number in Northamptonshire and Oxfordshire are similar;
- There have been a high number of accidents across the corridor, with a high number of fatal and serious accidents occurring on the M1, A413, A41, M40, A40, A420, A34, A1416, A5 and the A43;
- There are four SACs located within the corridor; Cothill Fen, Oxford Meadows, Chiltern Beachwoods and Aston Rowant. Little Wittenham SAC also falls within the 2km buffer;
- There are over 70 SSSI sites and four NNRs located within the corridor; Aston Rowant, King's Wood and Rushmere, Cothill and Buckingham Thick Copse;
- The Chilterns AONB intersects the study area;
- The Thames Path and the Ridgeway National Trails both fall within the study area boundary;
- The north-eastern part of the corridor intersects greenbelt land belonging to Oxford, Cherwell, South Oxfordshire, Vale of White Horse, Central Bedfordshire and Aylesbury Vale local authorities;
- There are approximately 16.1 million tonnes of carbon stored within the 2km buffer (500,000 t within vegetation and 15.6 million t within 15cm topsoil);
- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 1.7 which is relatively low compared to other corridors;
- There are 3335 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 8,097 hectares;
- Blenheim Palace World Heritage Site falls within the study area;
- There are over 100 scheduled monuments, 50 registered parks and gardens and one historic battlefield;
- There are two eutrophic lake (Foxcote Reservoir and Farmoor Reservoir) and three eutrophic rivers (River Ouse, River Thames and Langford Brook). The Headwaters of the Great Ouse also has issues with nitrates;

- There are two surface water, drinking water protection zones (Lower Thames (Cookham Egham Teddington) and the Great Ouse) and three groundwater protection zones for Hertfordshire and London;
- There are a number of flood zones located along the length of the corridor, the most significant of which are located in Oxford (River Thames, River Cherwell and Oxford Canal), Aylesbury (River Thames), Leighton Buzzard (River Ouzel), Bletchley and Milton Keynes (River Ouse);
- Oxford, Aylesbury Vale and Wycombe exhibit per capita emissions below the regional and national averages, whilst Cherwell, Vale of White Horse, South Oxfordshire, South Northamptonshire and West Oxfordshire all exceed the regional and national averages;
- There are 9 AQMAs; and
- There are 3 noise agglomerations, located in Oxford, Milton Keynes and Dunstable.

2.3 NORTH - SOUTH CONNECTIONS (A1 REGION)

Figure 2-2 - North - South connections (A1 Region)



OVERVIEW

2.3.1. The overall sustainability performance of the North - South connections (A1 region) corridor is varied, with a clear divide in performance between the socio-economic indicators and environmental ones. There are a high number of housing and employment developments planned within the corridor up to 2042, which have the opportunity to be complimented by the Transport Strategy and have therefore resulted in positive sensitivities.

2.3.2. Deprivation (including health, crime and overall deprivation) within the corridor is varied which has resulted in mixed sensitivities. These areas are generally located around Peterborough, Stevenage and the Fens. Those areas considered to be more deprived are likely to be more sensitive to negative effects arising from future developments, whilst those areas with low levels of deprivation are likely to be more resilient change.

2.3.3. CO2 emissions and per capita emissions across the corridor are varied. Stevenage and Broxborne demonstrate low levels of emissions, whilst Central Bedfordshire has some of the highest emissions in the EEH region with over 2000kt. Huntingdon, Fenland and South Cambridgeshire far exceed the national average of 5.1t per capita. Per capita emission within the corridor have potential to be sensitive to both positive and negative effects of future developments and would highly depend upon the proposals that are brought forward.

2.3.4. Areas around the Fens, Bedford Levels and the countryside between St Neots and Baldock are of a high-quality agricultural land, ranging between grades 1 and 3. In general the further south, the lower the agricultural grading, as it becomes more urban. Sensitivity of this receptor would be highly dependent upon where development takes place and the type of developments that come forward (e.g. online developments that make good use of existing infrastructure or new developments within areas of high agricultural land quality). However, given the high quality, the indicator is likely to be more sensitive to the negative effects associated with future development arising within the corridor.

2.3.5. There are a number of ecological, landscape and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor.

2.3.6. The water environment has the potential to be sensitive to the negative effects of development, particularly with regards to flooding, water source protection zones and drinking water safeguard zones. High risks of flooding are identified in the Fens towards the south of Peterborough, the River Welland, north of Peterborough and from the Great Ouse around Huntington and St Neots.

2.3.7. It should be noted that some parts of the corridor fall outside of the EEH boundary, where some data was not available.

KEY SUSTAINABILITY FEATURES

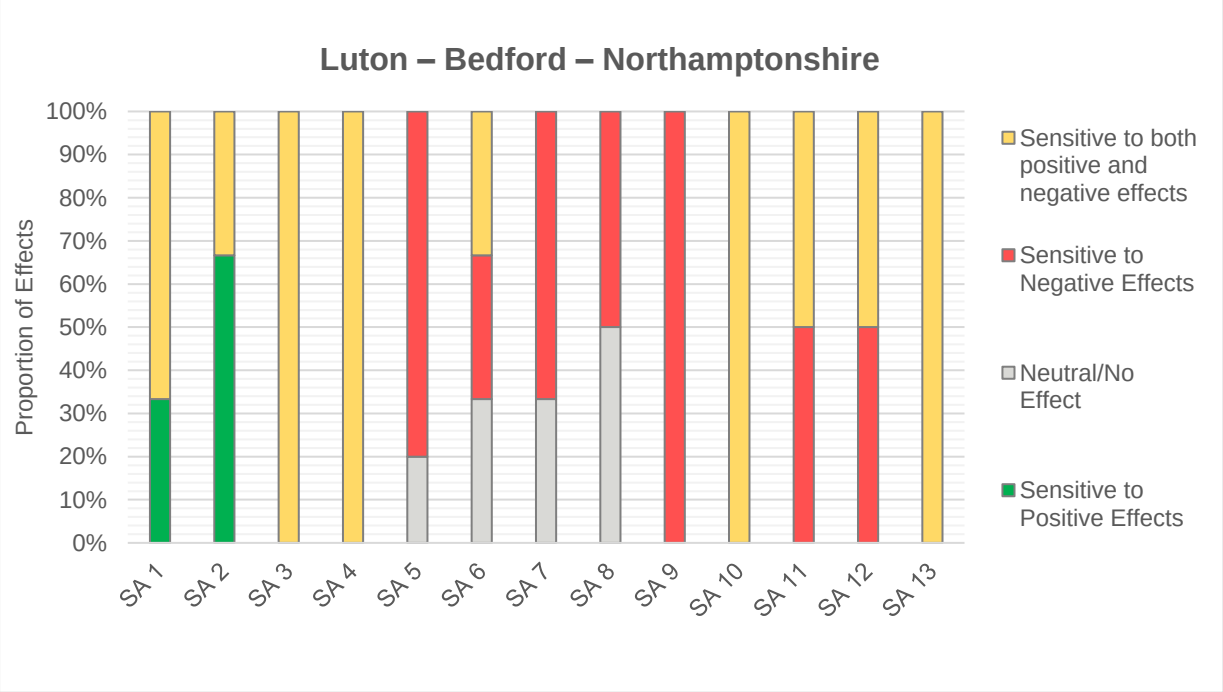
2.3.8. Key sustainability features of the North - South connections (A1 region) include:

- There are 35 planned major housing developments;
- Peterborough and Stevenage both have high levels of economic activity;
- There are 25 planned employment sites within the corridor and 5 within 2km corridor buffer;
- High levels of deprivation in Peterborough and Fenland;
- Levels of physical activity in Peterborough and Stevenage are significantly worse than the national average;
- The percentage of the adult population classed as either overweight or obese in Peterborough is significantly worse than the national average;
- There are high levels of crime deprivation around Peterborough, Stevenage, Potters Bar and Hatfield;
- Wormley-Hoddesdonpark Woods, Portholme, Fenland, Orton Pit, the Nene Washes and Baston Fen SACs and the Nene Washes SPA;
- Woodwalton Fen and the Nene Washes Ramsar sites;
- Six national nature reserves;
- There are approximately 11.8 million tonnes of carbon stored within the 2km buffer (1 million t within vegetation and 10.8 million t within 15cm topsoil);
- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 4.6 which is relatively low compared to other corridors;
- There are 4612 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 10,014 hectares;

- There are a number of areas within the corridor that have a medium to high risk of flooding;
- There are a high number of accidents, with the majority of fatal and serious accidents occurring on the A1(M), A47, A141, A14 and the A505;
- The southern part of the corridor is made up of greenbelt land belonging to North and East Hertfordshire, Welwyn Hatfield, Hertsmere and Enfield;
- There are areas in the north of the corridor comprised of high quality agricultural land;
- There are 47 water source protection zones including 28 Zone 1s;
- There are four groundwater safeguard zones, and three surface water safeguard zones;
- There are 50 noise action planning areas and two noise agglomerations;
- There are over 100 scheduled monuments, 39 registered parks and gardens and one historic battlefield;
- There are 16 AQMAs; and
- Three noise agglomerations - St Albans/Hatfield, Greater London Urban Area (some of which lies outside of the EEH boundary) and Peterborough.

2.4 LUTON – BEDFORD – NORTHAMPTONSHIRE

Figure 2-3 - Luton – Bedford – Northamptonshire



OVERVIEW

2.4.1. The overall sustainability performance of the Luton – Bedford –Northamptonshire corridor is varied, with a clear divide in performance between the socio-economic indicators and the health, community safety and environmental indicators. Deprivation is varied (including overall deprivation, health and crime) across the corridor with a number of lower layer super output areas (LSOAs) located within the top 10-20% of deprived neighbourhoods nationally. These are predominantly located in Kettering, Luton, Wellingborough and Bedford. Those areas considered to be more deprived are likely to be more sensitive to negative effects arising from future developments, whilst those areas with low levels of deprivation are likely to be more resilient change.

2.4.2. There are 20 planned housing sites and 24 planned employment sites that will be developed up to 2042. These sites are likely to be complimented by the Transport Strategy and have therefore resulted in positive sensitivities. Economic activity in the corridor high particularly in Bedford, Kettering and Luton, all of which could benefit from the Transport Strategy.

2.4.3. With the exception of the urban areas of Luton, Kettering and St Albans, the majority of the land in the corridor is of high quality, ranging between grades 2-3 (very good to good/moderate). East of Bedford there are two areas classed as grade 1, which is deemed excellent and exhibits some of the best and most versatile land. Sensitivity of this receptor would be highly dependent upon where development takes place and the type of developments that come forward (e.g. online developments that make good use of existing infrastructure or new developments within areas of high agricultural land quality). However, given the high quality, the indicator is likely to be more sensitive to the negative effects associated with future development arising within the corridor.

2.4.4. The water environment has the potential to be sensitive to the negative effects of development, particularly with regards to flooding, water source protection zones and drinking water safeguard zones. Key flood zones are identified in Luton, Shefford, Clophill, Northill, Bedford, Bromham, Wellingborough and Kettering.

2.4.5. There are a number of ecological, landscape and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor.

KEY SUSTAINABILITY FEATURES

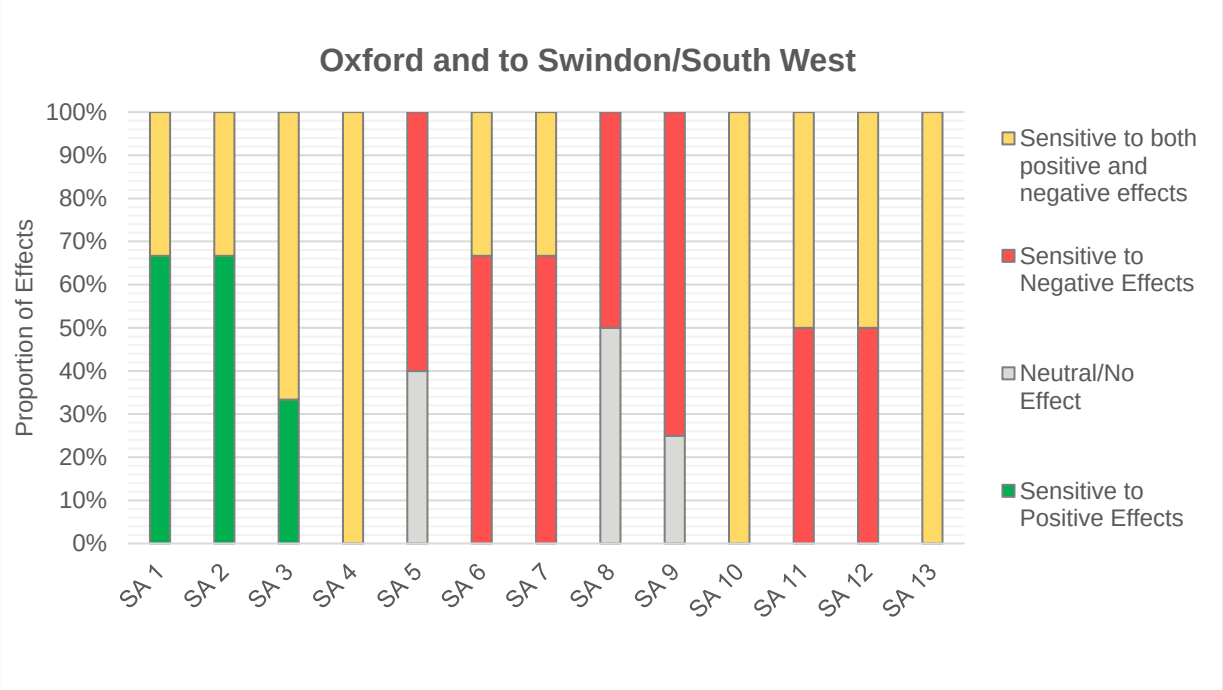
2.4.6. Key sustainability features of the Luton – Bedford – Northamptonshire Corridor include:

- There are 20 major housing developments, plus 8 additional developments within the 2km buffer.
- High levels of deprivation in Luton;
- Bedford, Kettering and Luton all have high levels of economic activity;
- There are 24 planned employment sites within the corridor and 3 within the 2km corridor buffer;
- Physical activity is significantly worse than the national average in Luton and Wellingborough;
- The proportion of adults who are classed as overweight or obese in Northampton is significantly worse than the national average;
- There are 27 LSOAs located amongst the top 10-20% of deprived neighbourhoods nationally with regards to health;
- There are 42 LSOAs located amongst the top 10-20% of deprived neighbourhoods nationally with regards to crime;
- The number of people who are killed or seriously injured on the roads is significantly worse than the national average in Central Bedfordshire and significantly better in Hertfordshire and Luton. The number in Northamptonshire and Bedfordshire are similar;
- The Upper Nene Valley Gravel Pits SPA and Ramsar;
- There are 23 SSSIs and two NNRs;
- There are approximately 7 million tonnes of carbon stored within the 2km buffer (700,000 t within vegetation and 6.4 million t within 15cm topsoil);
- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 4.7 which is relatively medium compared to other corridors;
- There are 1,794 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 4,688 hectares;
- The corridor intersects the Chilterns AONB;

- The corridor is made up of greenbelt land belonging Central Bedfordshire, North Hertfordshire and St Albans;
- There are over 80 scheduled monuments, and 22 registered parks and gardens;
- There are three eutrophic rivers (River Nene, River Irval and the River Ouse) and one nitrate sensitive river (Headwaters of the Great Ouse);
- There are three surface water, drinking water protection zones; Great Ouse, River Nene and Lower Thames (Cookham Egham Teddington) and four groundwater protection zones, predominantly located around Luton;
- There are 5 AQMAs;
- CO2 emissions across the corridor are varied. Wellingborough demonstrate low levels of emissions, whilst Central Bedfordshire has some of the highest emissions in the EEH region with over 2000kt;
- There are over 50 noise action planning areas predominantly located around Wellingborough, Kettering, Luton, Bedford, A6, A45 and the A14; and
- There are two noise agglomerations located in Luton and Bedford.A420 corridor between Oxford and Swindon (the South West)

2.5 OXFORD TO SWINDON/SOUTH WEST

Figure 2-4 - Oxford to Swindon/South West



OVERVIEW

2.5.1. The overall sustainability performance of the Oxford to Swindon/ the South West corridor is mixed, with the socio-economic and human health indicators outperforming the environmental indicators. The corridor benefits from generally low levels of overall and health deprivation and high levels of economic activity, particularly in Swindon and Oxford. The GVA values in both Swindon and Oxford are some of the highest in the region at £7 billion and £6.7 billion respectively.

2.5.2. There are 16 planned housing sites and four planned employment sites, the largest developments are due to take place in Swindon with plans for the delivery of over 20,000 new homes between 2021- 2046. These housing/employment sites are likely to be complimented by the Transport Strategy and have therefore resulted in positive sensitivities.

2.5.3. In between Oxford and Swindon, the population is predominantly rural, with lower levels of economic activities, reduced levels of crime and lower levels of air and noise pollution. CO2 emissions per capita in rural areas is much higher, with Cherwell, Vale of White Horse, South Oxfordshire and West Oxfordshire all exceeding the regional and national averages.

2.5.4. The levels of physical activity across the seven local authorities making up the corridor is generally significantly better than the national average. The local authorities of Cherwell and Vale of White Horse are the only authorities which are similar to the national average. The Transport Strategy could present opportunities to increase recreation and active travel, but it could also encourage an increased reliance upon private transport. However, given the high levels of physical activity within the corridor, the populations within the corridor are likely to be more sensitive to the positive effects associated with future development.

2.5.5. With the exception of the urban areas of Oxford and Swindon, the majority of the agricultural land in-between these two urban areas ranges between grades 2-3 (very good to good/moderate). South of Swindon there are two areas classed as grade 1, which is classed as excellent and some of the best and most versatile land. Sensitivity of this receptor would be highly dependent upon where development takes place and the type of developments that come forward, however, given the high quality of the agricultural land, it is likely to be more sensitive to the negative effects associated with future development arising within the corridor.

2.5.6. The water environment has the potential to be sensitive to the negative effects of development, particularly with regards to flooding, water source protection zones and drinking water safeguard zones. Key flood zones are identified in Swindon, Oxford, Goosney Wick, Marcham, Standlake and Newbridge.

2.5.7. There are a number of potential ecological, landscape and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor.

KEY SUSTAINABILITY FEATURES

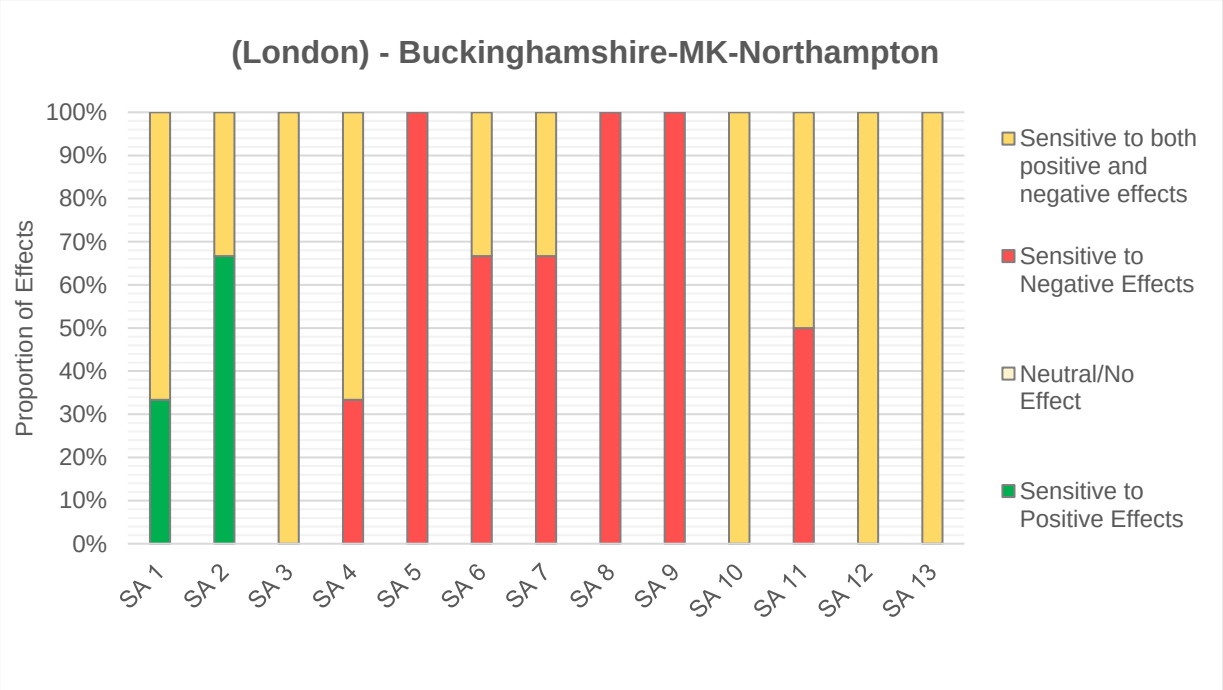
2.5.8. Key sustainability features of the Oxford to Swindon/ the South West corridor include:

- Deprivation across the corridor is relatively low;
- There are 16 planned housing sites and 4 planned employment sites;
- The levels of physical activity across the 7 local authorities making up the corridor is generally significantly better than the national average;
- There are 30 LSOAs located amongst the top 10-20% of deprived neighbourhoods nationally with regards to crime (located in Oxford, Swindon and Sandford-on-Thames);
- High levels of physical activity across the corridor;
- There are number of fatal and serious accidents occurring on the A420, A419, A417 and the A40;
- Both Cothill Fen and Oxford Meadows SAC fall within the corridor;
- There are 36 SSSI sites;
- The Chimney Meadows and Cothill NNR is located within the corridor;

- There are approximately 5.1 million tonnes of carbon stored within the 2km buffer (400,000 t within vegetation and 4.7 million t within 15cm topsoil);
- There are 1,229 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 3,016 hectares;
- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 5.6 which is comparatively high compared to other corridors;
- The Thames Path and the Ridgeway National Trails both intersect the corridor boundary;
- Greenbelt land belonging to Oxford, Cherwell, South Oxfordshire and the Vale of White Horse local authorities;
- There are over 50 scheduled monuments and 18 registered parks and gardens;
- High quality agricultural land;
- There are two surface water, drinking water protection zones; Upper Thames (Leach to Evenlode) and Lower Thames (Cookham Egham Teddington);
- There are a number of areas within the corridor that have a medium to high risk of flooding. These are predominantly located around Newbridge, Standlake, Oxford and Swindon;
- Per capita emissions in Cherwell, the Vale of Whit Horse, South Oxfordshire and West Oxfordshire all exceed the regional and national averages;
- There are numerous noise action planning areas located throughout the corridor. These are most densely populated around Oxford, Swindon, A419, A420 and the A20; and
- There are two noise agglomerations located in Oxford and Swindon.

2.6 (LONDON) - BUCKINGHAMSHIRE-MILTON KEYNES-NORTHAMPTON

Figure 2-5 - (London) - Buckinghamshire - Milton Keynes - Northampton



OVERVIEW

2.6.1.1 The overall sustainabilty performance of the corridor is varied and of the 19 corridors, it has the second highest number of negative sensitivities. There are a number of potential ecological,

landscape and historical features (listed below) which have accounted for most of these negative sensitivities.

2.6.2. Negative senstivities have also been identified for levels of crime. There are 64 LSOAs located amongst the top 10-20% of deprived neighbourhoods nationally with regards to crime, the majority are loacated in Northampton (38), Slough (16) and Milton Keynes. Smaller areas of crime deprivation are also identified in High Wycombe, Aylesbury and Wellingborough.

2.6.3. There are 52 planned housing sites and 27 planned employment sites, the largest developments are due to take place in Milton Keynes with plans for the delivery of over 25,000 new homes between 2021-2046.

2.6.4. The water environment has the potential to be sensitive to the negative effects of development, particularly with regards to flooding, water source protection zones and drinking water safeguard zones. Key flood zones are identified in Aylesbury, High Wycombe, Buckingham, Milton Keynes, Rickmansworth, Uxbridge, Wellingborough and Northampton.

2.6.5. Per capita emissions are varied. Chiltern, Dacorum, and Aylesbury Vale exhibit per capita emissions below the regional and national averages, whilst Daventry, South Bucks and South Northamptonshire all exceed the regional and national averages. CO2 emissions are also varied with Chiltern and Wellingborough demonstrating low levels of emissions, whilst Milton Keynes and Central Bedfordshire have higher levels with over 1000kt. Both of these indicators have potential to be sensitive to both positive and negative effects of future developments and would highly depend upon the proposals that are brought forward.

2.6.6. It should be noted that some parts of the corridor fall outside of the EEH boundary, where some data was not available.

KEY SUSTAINABILITY FEATURES

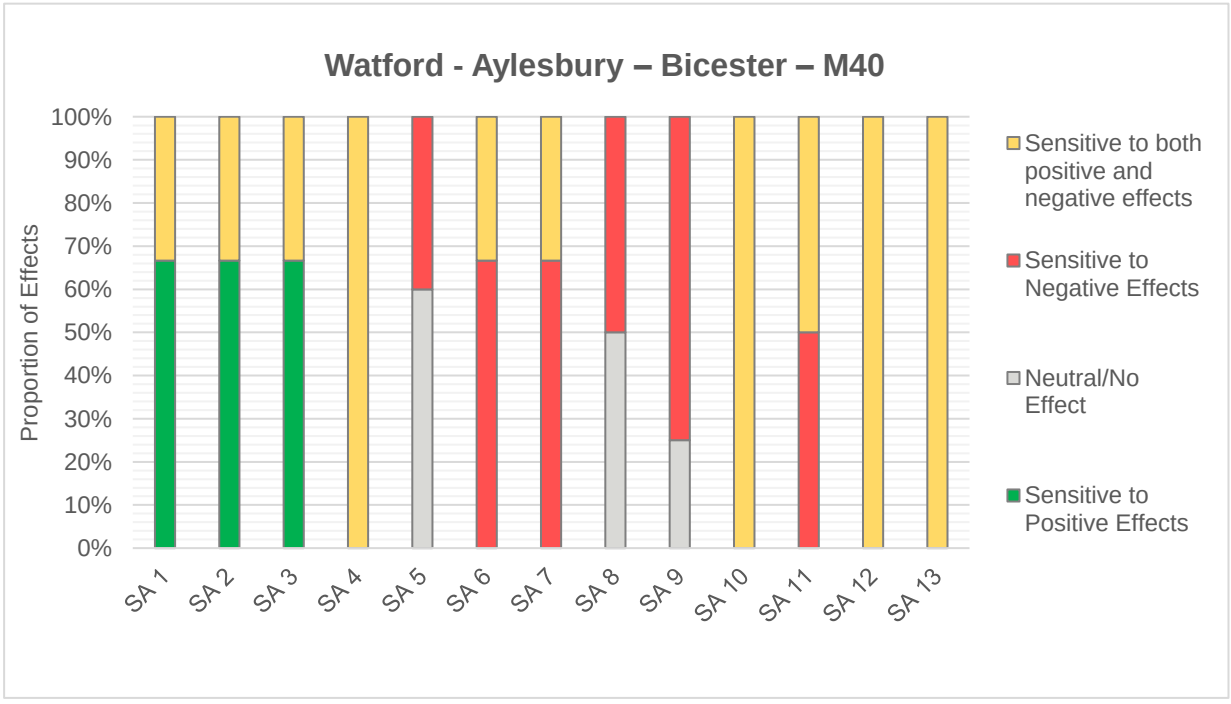
Key sustainbility features of the (London) - Buckinghamshire -Milton Keynes-Northampton) include:

- There are disparities in GVA; Milton Keynes has the highest GVA values in the EEH region at £12.3 billion. High values are also seen in Wycombe and Northampton, but values in rural local authorities, are significantly lower;
- Northampton and Wellingborough are amongst the top 40% of deprived local authority areas nationally;
- There are 52 planned housing sites and 27 planned employment sites;
- There are 33 LSOAs located amongst the top 10-20% of deprived neighbourhoods nationally with regards to health (located in Milton Keynes, Wellingborough and Northampton);
- Levels of crime deprivation are high, with 64 LSOAs located amongst the top 10-20% of deprived neighbourhoods nationally;
- There have been a high number of accidents across the corridor, with a high number of fatal and serious accidents occurring on the A508, A428, A45, M1, A425, A413, A418 and M40;
- There are three SACs; Burham Beaches, Chiltern Beachwoods and Richmond Park (located within the 2km Buffer) and one SPA/Ramsar; Upper Nene Valley Gravel Pits;
- There are three NNRs located within the corridor; Aston Rowant, Burnham Beeches and Ruislip Woods (outside the EEH boundary);
- There are approximately 16.5 million tonnes of carbon stored within the 2km buffer (2 million t within vegetation and 14.5 million t within 15cm topsoil);

- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 5.3 which is relatively medium compared to other corridors;
- There are 5,773 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 16,222 hectares;
- The Thames Path and the Ridgeway National Trails both intersect the corridor boundary;
- The Chilterns AONB intersects the corridor;
- Greenbelt land belonging to Wycombe, Aylesbury, Windsor and Maidenhead, Three Rivers, Chiltern, Harrow, South Bucks and Greater London;
- The Royal Botanic Gardens at Kew World Heritage Site is located within the corridor; however, it remains outside of the EEH boundary;
- There are over 150 scheduled monuments, 51 historic parks and gardens and one historic battlefield (Battle of Northampton 1460);
- There are three eutrophic lakes (Queen Mother Reservoir, Foxcote Reservoir and Pitsford Reservoir) and three eutrophic rivers (River Nene, River Great Ouse and the River Thames). The Headwaters of the Great Ouse are also sensitive to nitrates;
- There are 27 AQMAs;
- There are a number of areas within the corridor that have a medium to high risk of flooding. These are predominantly located around Aylesbury, Northampton, Milton Keynes, Rickmansworth and Slough;
- There are over 200 noise action planning areas located throughout the corridor. These are most densely populated around Northampton, Greater London, Aylesbury, Milton Keynes, Slough M25, A41 and A40; and
- There are 3 noise agglomerations; Greater London, Slough and High Wycombe.

2.7 WATFORD - AYLESBURY – BICESTER – M40

Figure 2-6 - Watford - Aylesbury – Bicester – M40



OVERVIEW

2.7.1. The overall sustainability performance of the corridor is varied, with a clear divide in performance between the socio-economic indicators and environmental ones. The corridor exhibits generally low levels of deprivation and high levels of economic activity, particularly in Watford, Hemel Hempstead and Aylesbury. There are 18 planned employment sites within the corridor, the largest of which are located within Bicester, Hemel Hempstead, Rickmansworth and Abbots Langley. The Transport Strategy is likely to compliment these new developments.

2.7.2. There are also 17 planned housing sites, the largest developments are due to take place in Bicester with over 10,000 and Aylesbury with 8,000 new homes between 2021-2046. Again, the Transport Strategy is likely to compliment these new developments.

2.7.3. Health deprivation is very low across the corridor, with no LSOAs within the top 10-30% of deprived neighbourhoods nationally and the percentage of people living in the corridor classed as overweight or obese is either similar or significantly better than the national average. Given that deprivation is low, and the low number of people classed as overweight or obese, the communities within the corridor are deemed to be more resilient to change and susceptible to the positive health effects associated with future development within the corridor.

2.7.4. There are a number of potential ecological, landscape and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor.

2.7.5. The water environment also has the potential to be sensitive to the negative effects of development, particularly with regards to flooding, water source protection zones and drinking water safeguard zones. Key flood zones are identified in Bicester, Aylesbury, Hemel Hempstead and Watford.

KEY SUSTAINABILITY FEATURES

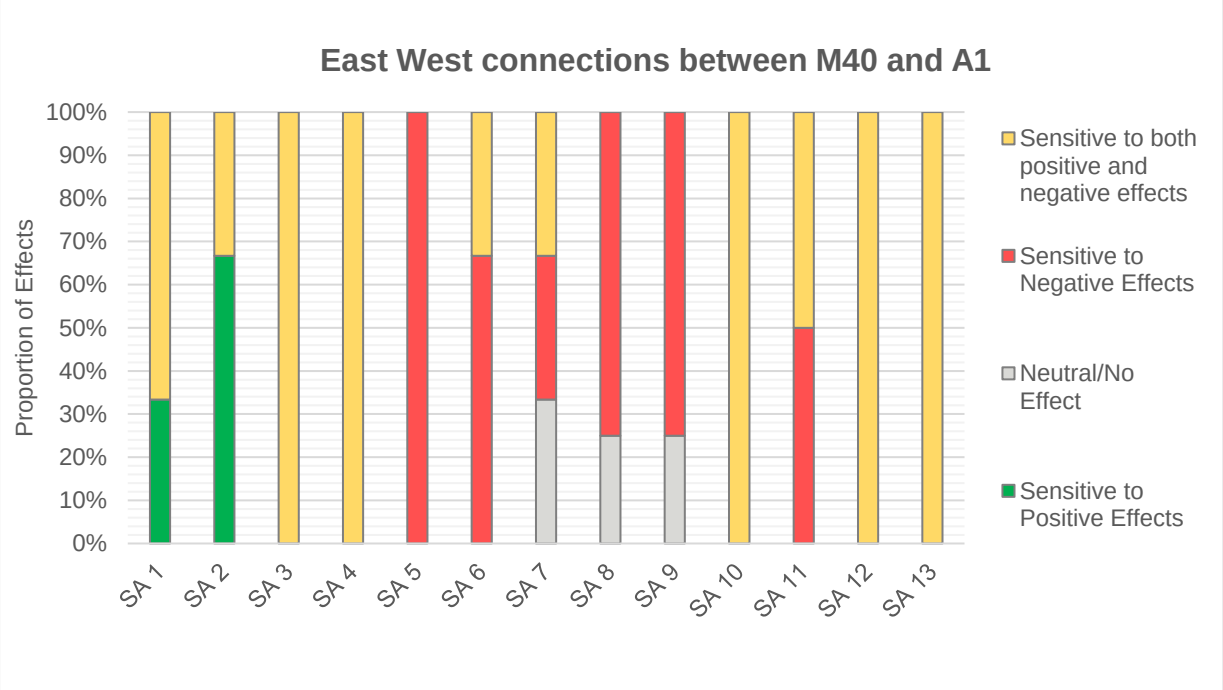
Key sustainability features of the Watford - Aylesbury - Bicester - M40corridor include:

- Low levels of overall deprivation and health deprivation. Levels of crime deprivation are varied;
- There are 17 planned housing and 18 planned employment sites;
- High levels of economic activity in Watford, Hemel Hempstead and Aylesbury;
- Watford has levels of physical activity that are significantly worse than the national average;
- The percentage of people living in the corridor classed as overweight or obese is either similar or significantly better than the national average;
- A high number of fatal and serious accidents occurring on the A41, A413 M40 and M1;
- The Chiltern Beechwoods SAC falls within the corridor;
- There are 30 SSSI sites;
- There are approximately 6.2 million tonnes of carbon stored within the 2km buffer (700,000 t within vegetation and 5.5 million t within 15cm topsoil);
- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 5.5 which is relatively high compared to other corridors. Land-use changes could impact on nectar plant diversity;
- There are 1610 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 4,292 hectares;
- The Thames Path and the Ridgeway National Trails both intersect the corridor boundary;
- The Chilterns AONB intersects through the corridor;

- Greenbelt land belonging to Wycombe, Hertsmere, Aylesbury, Dacorum, Three Rivers, Chiltern, Harrow and St Albans;
- There are over 50 scheduled monuments and 15 registered parks and gardens;
- There are 32 water source protection zones including 14 Zone 1s (areas with the highest risk of contamination);
- There are a number of areas within the corridor that have a medium to high risk of flooding. These are predominantly located around Bicester, Watford and Aylesbury.
- There are two surface water, drinking water protection zones; Lower Thames (Cookham Egham Teddington) and the Great Ouse and five groundwater protection zones for Hertfordshire and London;
- High levels of CO2 emissions in Bicester and high per capita emissions in Cherwell, St Albans, Hertsmere and Three Rivers (all exceeding the regional and national averages);
- There are 17 AQMAs;
- There are over 100 noise action planning areas located throughout the corridor, which are most densely populated around Watford, Aylesbury, Hemel Hempstead, M25, A41 and A418; and
- Two noise agglomerations located in the Greater London Urban Area and St Albans.

2.8 EAST WEST CORRIDOR BETWEEN M40 AND A1

Figure 2-7 - East West connections between M40 and A1



OVERVIEW

2.8.1. The assessment of the East West connections between M40 and A1 corridor has identified a clear divide in performance between the socio-economic indicators and historic and environmental ones. Economic activity is high, particularly in Oxford and Northampton, with a large number of employment and housing sites due to be built over the plan period. GVA is varied across the corridor; Northampton and Oxford have high levels at £6.3 billion and £6.7 billion respectively, however, outside of these areas in the more rural local authorities, values are much lower, with the

local authorities of South Northamptonshire, Wellingborough and Daventry, having some of the lowest values in the EEH Region.

2.8.2. Levels of overall, crime and health deprivation are varied. The corridor takes in the local authority areas of Northampton which is amongst the top 40% of deprived local authority areas nationally. Conversely, South Northamptonshire West Oxfordshire and South Oxfordshire make up some of the least deprived authorities nationally. There are a number of LSOAs in Northampton and Oxford that are amongst the top 10-20% of deprived neighbourhoods nationally, with regards to health and crime deprivation.

2.8.3. The water environment also has the potential to be sensitive to the negative effects of development, particularly with regards to flooding, water source protection zones and drinking water safeguard zones. Key flood zones are identified in Bicester, Oxford, Buckingham, Towcester and Northampton.

2.8.4. There are a number of potential ecological, landscape and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor.

KEY SUSTAINABILITY FEATURES

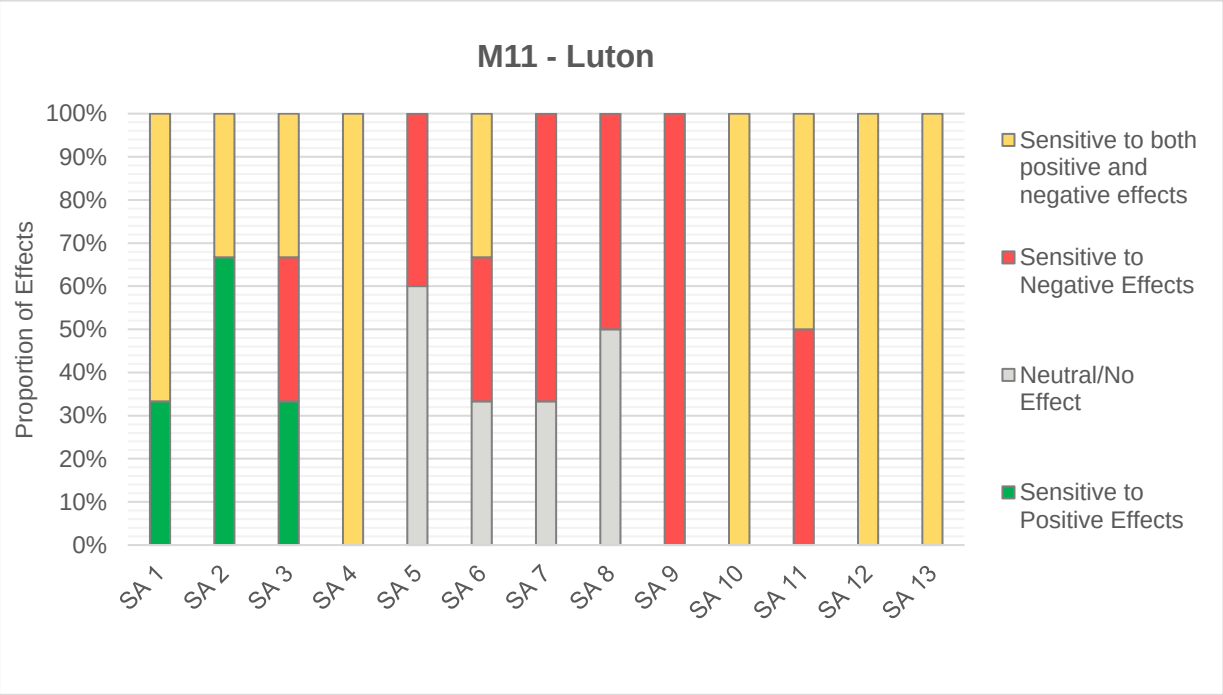
2.8.5. Key sustainability features of the East West connections between M40 and A1 include:

- There are 26 planned housing sites and 20 planned employment sites across the corridor;
- Populations around Northampton, Bicester and Oxford are denser, whilst areas in South Northamptonshire, West Oxfordshire and South Oxfordshire are more sparsely populated;
- The number of people killed or seriously injured on the roads in both Oxfordshire and Northamptonshire is similar to national average;
- There have been a high number of fatal and serious accidents occurring on the A34, M40, A43, A5 and A45;
- The Oxford Meadows SAC and the Upper Nene Valley Gravel Pits SPA and Ramsar and Buckingham Corpse NNR are located in the corridor;
- There are 36 SSSI sites;
- The Thames Path National Trail intersects the corridor;
- The corridor has greenbelt land belonging to Oxford, Cherwell, Vale of White Horse and South Oxfordshire;
- There are approximately 8.3 million tonnes of carbon stored within the 2km buffer (700,000 t within vegetation and 7.6 million t within 15cm topsoil);
- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 5.1 which is relatively medium compared to other corridors. Land-use changes could impact on nectar plant diversity;
- There are 1,609 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 3,888 hectares;
- There are over 65 scheduled monuments, 29 registered parks and gardens and one historic battlefield;
- There is one eutrophic lake (Foxcote Reservoir) and four eutrophic rivers (River Nene, River Ouse, Langford Brook and the River Thames). The Headwaters of the Great Ouse are also sensitive to nitrates;
- There are three surface drinking water protection zones; Great Ouse, River Nene and Lower Thames (Cookham Egham Teddington);

- CO2 emissions vary across the corridor. Cherwell are both in excess of 1000kt annually, whilst the Vale of White Horse, Oxford, South Northamptonshire, South Oxfordshire and West Oxfordshire are all between 500-1000kt annually;
- There are 11 AQMAs located within the corridor;
- There are over 75 historic landfill sites;
- There are over 100 noise action planning areas located throughout the corridor. These are most densely populated around Oxford, Northampton, Buckingham, A43, A44 and A45; and
- There are two noise agglomerations located in Oxford and Northampton.

2.9 M11 - LUTON

Figure 2-8 - M11 - Luton



OVERVIEW

2.9.1. The overall sustainability performance of the M11 – Luton corridor is mixed, with the socio-economic indicators outperforming the environmental indicators. It is one of the three corridors that does not contain any European designated sites, however, there are a number of potential ecological, landscape and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor.

2.9.2. The water environment also has the potential to be sensitive to the negative effects of development, particularly with regards to flooding, water source protection zones and drinking water safeguard zones. Key flood zones are identified in located around Luton, Hitchin, Letchworth and Duxford.

2.9.3. The levels of physical activity in Luton and Stevenage are significantly worse than the national average, however, the percentage of people living in the corridor classed as overweight or obese is either similar or significantly better than the national average.

2.9.4. The corridor takes in the local authority area of Luton which is amongst the top 20% of deprived local authority areas nationally. Conversely, Central Bedfordshire, St Albans and North Hertfordshire

make up some of the least deprived authorities nationally. GVA across the corridor is varied. Higher values are seen in Luton (£5.2 billion) and Central Bedfordshire (£5.6 million), whilst local authorities such as Stevenage (£2.4 billion), North Hertfordshire (£3.6 billion) and South Cambridgeshire (£4.5 billion) have lower GVA values.

2.9.5. The population across the corridor is generally densely populated with large populations located in Luton, Stevenage Royston and Letchworth. There are some less densely population areas located in South Oxfordshire and Central Bedfordshire. The more densely populated areas of Luton, Stevenage Royston and Letchworth, tend to have higher levels of deprivation (including overall, health and crime).

KEY SUSTAINABILITY FEATURES

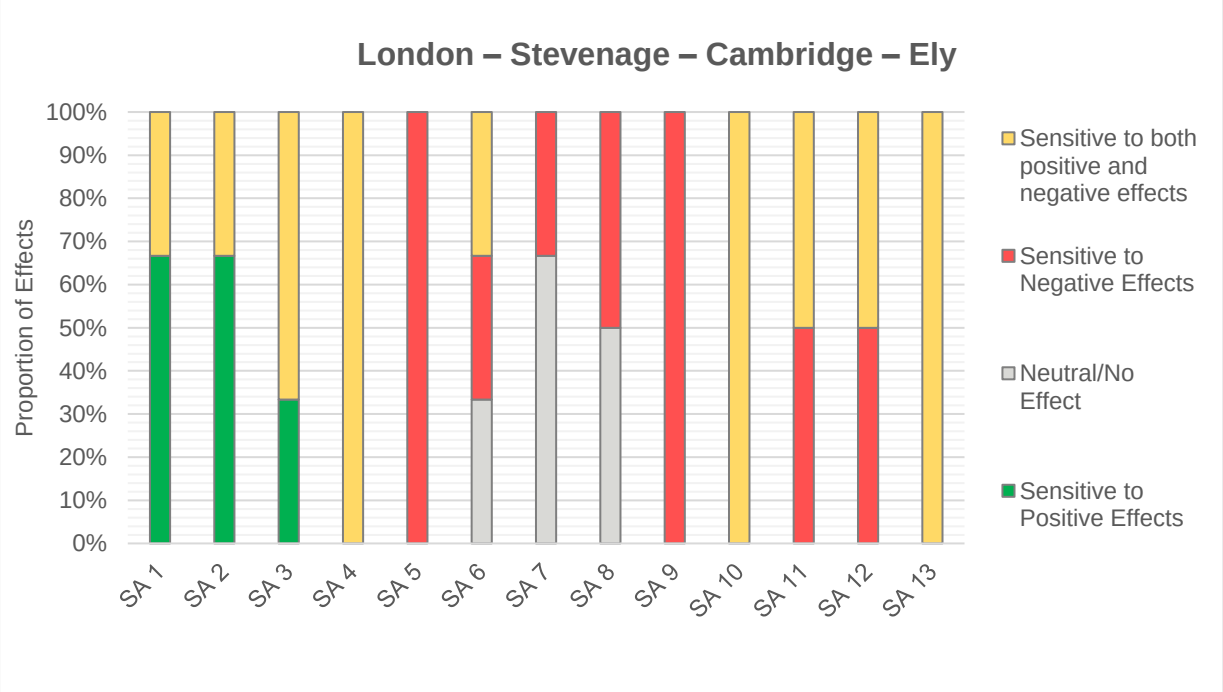
2.9.6. Key sustainability features of the M11 – Luton corridor include:

- There are mixed levels of crime, health and overall deprivation, with higher levels of deprivation identified in Luton and Stevenage;
- There are 9 planned housing sites and 12 planned employment sites;
- The levels of physical activity in Luton and Stevenage are significantly worse than the national average;
- The percentage of people living in the corridor classed as overweight or obese is either similar to or significantly better than the national average;
- The number of people killed or seriously injured on the road in both Cambridgeshire and Central Bedfordshire is significantly worse than the national average, whilst levels in Luton and Hertfordshire are significantly better than the national average;
- There have been a high number of accidents across the corridor, with a number of fatal and serious accidents occurring on the A505, B656, A10 and M11;
- There are twelve SSSI sites located within the corridor and an additional seven SSSI sites within the 2km boundary;
- There are no NNRs located within the corridor, however, the Knocking Hoe NNR is located within the 2km buffer;
- There are approximately 3.1 million tonnes of carbon stored within the 2km buffer (200,000 t within vegetation and 2.9 million t within 15cm topsoil);
- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 4.9 which is relatively medium compared to other corridors;
- There are 835 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 1,880 hectares;
- The Chilterns AONB intersects the corridor;
- The corridor has greenbelt land belong to Central Bedfordshire, North Hertfordshire, St Albans and South Cambridgeshire;
- There are over 40 scheduled monuments located within the corridor and over 20 located within the 2km corridor buffer;
- There are 7 registered parks and gardens within the corridor;
- There are 34 water source protection zones including 19 Zone 1s;
- There are three eutrophic rivers; the River Irvel, River Lea and the River Cam;
- There are three surface water, drinking water protection zones and eight groundwater protection zones for East Anglia, Hertfordshire and London;
- There are 4 AQMAs located within the corridor located in Luton and Hitchin;

- Stevenage, Luton and North Hertfordshire demonstrate low levels of emissions, whilst Central Bedfordshire has some of the highest emissions in the EEH region with over 2000kt;
- There are over 40 historic landfill sites located within the corridor;
- There are over 50 noise action planning areas located throughout the corridor. These are most densely populated around Luton, Hitchin, Letchworth, Royston and the A505; and
- There is one noise agglomeration located in Luton.

2.10 LONDON – STEVENAGE – CAMBRIDGE – ELY

Figure 2-9 - London – Stevenage – Cambridge – Ely



OVERVIEW

2.10.1. The overall sustainability performance of the London – Stevenage – Peterborough - Ely is varied, with the socio-economic indicators outperforming the environmental indicators. The corridor benefits from generally low levels of overall deprivation and high levels of economic activity, particularly in Stevenage, Cambridge, East Hertfordshire, South Cambridgeshire and Welwyn Hatfield where GVA values are particularly high.

2.10.2. CO2 emissions across the corridor are varied. Towards the northern parts of the corridor, for the authorities of East Cambridgeshire, the emissions are between 500-1000kt annually, South Cambridgeshire has annual CO2 levels between 1000-1500kt annually, whilst at the southern end, Broxbourne and Stevenage have levels below 500kt annually.

2.10.3. The population across the corridor is generally densely populated with large populations located in Cambridge, Ely, Royston, Ware and Stevenage, however, there are some less densely population areas located in South Cambridgeshire and East Hertfordshire. There are 16 planned housing sites located within the corridor, with the largest developments due to take place in South Cambridgeshire. In addition, there are 26 planned employment sites within the corridor and six within 2km corridor buffer.

2.10.4. Health deprivation across the corridor is varied, but generally low, however, there are pockets of deprivation in Cambridge where seven LSOAs are within the top 20% most deprived neighbourhoods nationally. The levels of physical activity across the corridor are generally better or similar to the national average, however, levels are worse in Fenland and Broxbourne. The percentage of people living in the corridor classed as overweight or obese is either similar or significantly better than the national average.

2.10.5. The water environment also has the potential to be sensitive to the negative effects of development, particularly with regards to flooding, water source protection zones and drinking water safeguard zones. Key flood zones are identified in Cambridge, across the Bedford Levels, Waltham Cross and Hoddesdon.

2.10.6. The agricultural land classification across the corridor is varied, mainly due to its size. There are urban areas surrounding Cambridge and more in the south of the corridor in Hertford and Waltham Cross. However, there are also areas across the corridor classified as Grade 1 (the best and most versatile land nationally). Sensitivity of this receptor would be highly dependent upon where development takes place and the type of developments that come forward. Given the high quality, the indicator is likely to be more sensitive to the negative effects associated with future development arising within the corridor.

2.10.7. There are a number of potential ecological, landscape and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor.

2.10.8. It should be noted that some parts of the corridor fall outside of the EEH boundary, where some data was not available.

KEY SUSTAINABILITY FEATURES

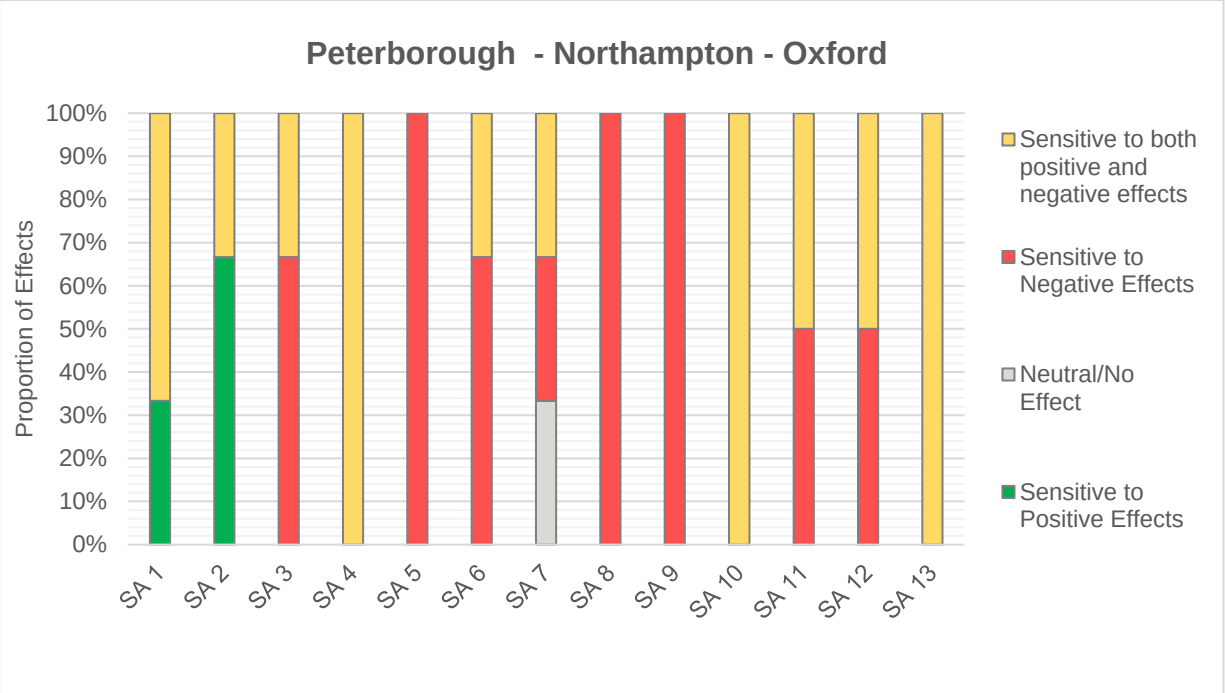
2.10.9. Key sustainability features of the London – Stevenage – Cambridge – Ely corridor include:

- Overall deprivation across the corridor is low;
- There are 16 planned housing sites and 26 planned employment sites;
- The percentage of people living in the corridor classed as overweight or obese is either similar or significantly better than the national average;
- Crime deprivation across the corridor is varied, but generally low. However, there are pockets across the corridor where there is more deprivation, in Cambridge and Waltham Cross;
- The number of people killed or seriously injured on the road in both Cambridgeshire and Central Hertfordshire is significantly worse than the national average;
- There have been a high number of accidents across the corridor, with a number of fatal and serious accidents occurring on the A14, A1038, A10 and A1101;
- There are three SACs located within the corridor; Ouse Washes, Wicken Fen and Lee Valley and an additional two sites in the 2km buffer; Eversden and Wimpole Woods and Epping Forest;
- There are 2 SPAs located within the corridor; Ouse Washes and Lee Valley and three Ramsar sites; Ouse Washes, Fenland and Wormley-Hoddesdonpark Woods;
- There are 39 SSSIs located within the corridor and an additional 11 SSSIs within the 2km boundary;
- There are two NNR's within the corridor located at Broxbourne Woods and Wicken Fen;
- There are approximately 11.2 million tonnes of carbon stored within the 2km buffer (1.0 million t within vegetation and 10.2 t within 15cm topsoil);

- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 4.6 which is relatively low compared to other corridors;
- There are 1975 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 5,672 hectares;
- The corridor has greenbelt land belong to South Cambridgeshire, East Hertfordshire, Broxbourne and Welwyn Hatfield;
- There are over 50 scheduled monuments and 30 registered parks and gardens;
- The majority of the southern end of the corridor lies within areas designated as water source protection zones, including 34 Zone 1s;
- There are seven eutrophic rivers within the corridor (Soham Lode, River Cam, Old West & Ely Ouse, Little Ouse, River Lark and the River Lee);
- There is one surface drinking water protection zone which covers the southern section of the corridor (Hertfordshire and North London). In addition, there are 6 groundwater protection zones across the corridor;
- There are five AQMAs located within the corridor;
- Per capita emissions are varied across the corridor. South Cambridgeshire, East Cambridgeshire and Fenland all exceed the national averages; however, the authorities of Stevenage, Cambridge, North Hertfordshire, East Hertfordshire, Broxbourne and Welwyn Hatfield are well below the national and regional averages.
- There are areas of high quality (Grade 1) agricultural land;
- There are over 30 historic landfill sites;
- There are over 50 noise action planning areas located throughout the corridor. These are most densely populated around Cambridge, the A10, A14, A1309, A1307; and
- There are 2 noise agglomerations located in within the corridor; Cambridge Urban Area and Greater London Urban Area.

2.11 PETERBOROUGH - NORTHAMPTON – OXFORD

Figure 2-10 - Peterborough - Northampton - Oxford



OVERVIEW

2.11.1. The corridor is one of the largest, encompassing a diverse area with varying issues, leading to mixed sustainability performance. Of the 19 corridors, the Peterborough – Northampton – Oxford corridor has the highest number of negative sensitivities identified, with 19 in total.

2.11.2. There are 16 local authorities that make up the corridor of which the Vale of White Horse, South Oxfordshire, South Northamptonshire and West Oxfordshire are all amongst the top 10% of least deprived local authorities nationally. Conversely, higher levels of deprivation are seen Corby, Peterborough and Fenland, towards the north eastern section of the corridor.

2.11.3. Oxford, Peterborough, Northampton and Kettering all have high levels of economic activity. GVA in Milton Keynes is the highest across the corridor (£12.3billion), whilst levels are lower (albeit still high) in Oxford and Northampton (£6.7billion and £6.3billion respectively). Outside of these areas in the more rural local authorities, the GVA is lower.

2.11.4. The percentage of people living across the corridor who are classed as overweight or obese is varied. Oxfordshire has levels that are significantly better than the national average, whilst Northamptonshire, Milton Keynes and Peterborough, all have levels that are significantly worse. Similarly, levels of physical activity in Peterborough, Wellingborough and Fenland are significantly worse than the national average.

2.11.5. Per capita emissions within the corridor have potential to be sensitive to both positive and negative effects of future developments and would highly depend upon the proposals that are brought forward. Per capita emissions are varied across the corridor. With the exception of Wellingborough, Bedford, Aylesbury Vale and Oxford, regional and national per capital emissions are exceeded.

2.11.6. There are a number of potential ecological, landscape and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor. This includes Blenheim Palace World Heritage Site.

2.11.7. With the exception of the urban areas of Oxford, Peterborough, Northampton and Wellingborough, the majority of land within the corridor ranges between grades 2-3 (very good to good/moderate). There is one area around Noke, which has grade 1 agricultural land which is classed as excellent and represents some of the best and most versatile land nationally.

2.11.8. There are a number of areas within the corridor that have a medium to high risk of flooding. These are predominantly located around Oxford, Wellingborough, Northampton and Peterborough. These areas are described as high-risk areas to people, critical services and commercial and public assets from surface water flooding.

KEY SUSTAINABILITY FEATURES

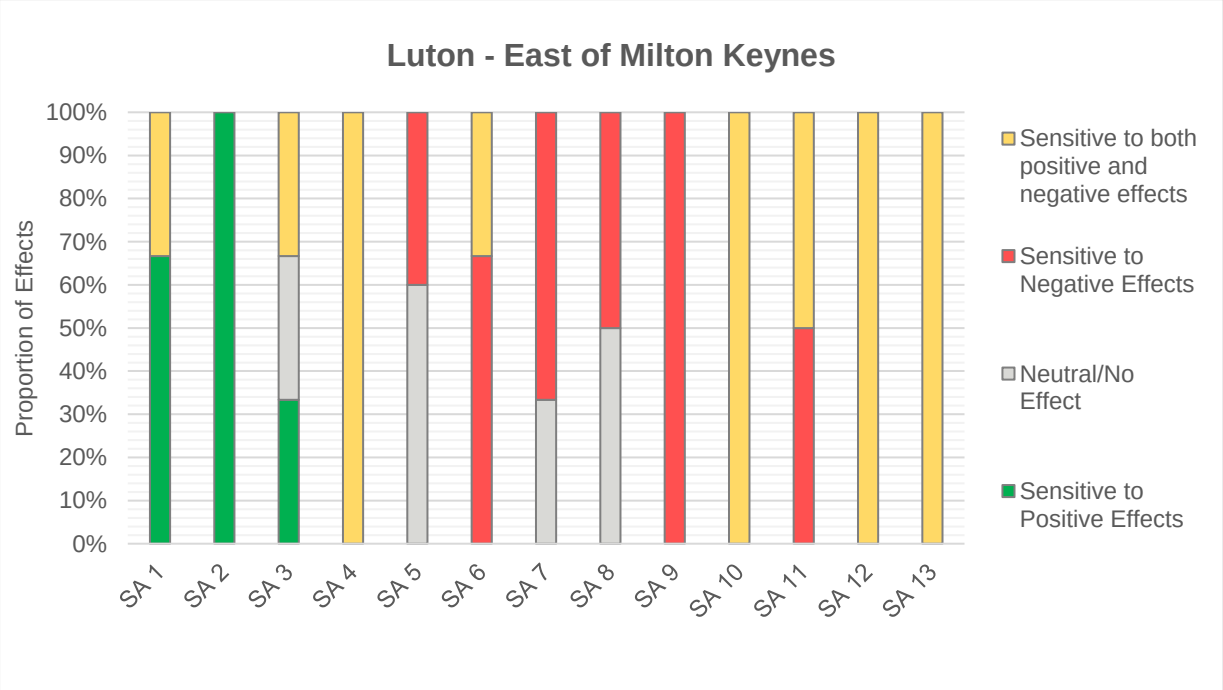
2.11.9. Key sustainability features of the Peterborough - Northampton - Oxford corridor include:

- Levels of derivation are varied, with higher pockets of overall, crime and health deprivation seen in Corby, Peterborough, Fenland, Wellingborough, Northampton and Oxford;
- There are 43 planned housing sites and 43 planned employment sites across the corridor, the largest of which are in Bicester, Northampton, Towcester, Wellingborough, Corby and Peterborough;
- Northamptonshire, Milton Keynes and Peterborough, all have higher levels of people classed as overweight or obese when compared with the national average;
- Levels of physical activity in Peterborough, Wellingborough and Fenland are significantly worse than the national average;
- The number of people killed or seriously injured on the roads within the corridor is significantly better than the national average in Buckinghamshire, Northampton, Oxfordshire, Bedford and Milton Keynes. The number of people killed or seriously injured on the roads are significantly worse than the national average in Cambridgeshire and Peterborough;
- There have been a high number of fatal and serious accidents occurring on the A605, A43, A6, M1, A5 and the A40;
- There are five SACs located within the corridor; Cothill Fen, Orton Pit, Nene Washes, Barnack Hills & Holes and Oxford Meadows;
- There are two SPAs and Ramsar sites located within the corridor; Upper Nene Valley Gravel Pits and Nene Washes;
- There are over 40 SSSIs located within the corridor and over 20 SSSIs within the 2km boundary;
- There are six NNRs located within the corridor, and a further two sites within the 2km buffer;
- There are approximately 20.9 million tonnes of carbon stored within the 2km buffer (1.9 million t within vegetation and 19.1 million t within 15cm topsoil);
- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 4.8 which is relatively medium compared to other corridors;
- There are 3,433 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 8,374 hectares;
- The Thames Path lies intersects the corridor to the east of Oxford;
- The southern part of the corridor intersects greenbelt land belonging to Oxford, Cherwell, South Oxfordshire, West Oxfordshire and the Vale of White Horse local authorities;
- The edge Blenheim Palace World Heritage Site lies within the corridor;

- There are over 50 scheduled monuments located within the corridor and over 30 located within the 2km buffer;
- There are 40 registered parks and gardens within the corridor and additional 18 within the 2km buffer;
- There is one registered battlefield located within the corridor (Battle of Northampton 1460);
- There are three eutrophic lakes (Pitsford Reservoir, Foxcote Reservoir and Farmoor Reservoir) and five eutrophic rivers (River Great Ouse, River Nene, Middle Level, Langford Brook and the River Thames);
- The majority of the corridor lies within surface drinking water protection zones;
- There are a number of flood zones located along the length of the corridor, the most significant of which are located around Peterborough, Northampton and Oxford;
- There are 12 AQMAs located within the corridor the largest of which encompasses the whole of the City of Oxford;
- The corridor is generally comprised of high-quality agricultural land;
- There are over 50 historic landfill sites;
- There are numerous noise action planning areas located throughout the corridor. These are most densely populated around Oxford, Peterborough, Northampton and along the M40, A605, A14, A6, A40 and the A34; and
- There are four noise agglomerations across the corridor; Oxford, Milton Keynes, Northampton and Peterborough.

2.12 LUTON - EAST OF MILTON KEYNES

Figure 2-11 - Luton - East of Milton Keynes



OVERVIEW

2.12.1. The Luton – East of Milton Keynes Corridor has some of the lowest number of negative sensitivities of the 19 corridors, with 11 in total. The corridor has performed well with regards to socio-

economics. There are low levels of deprivation across the corridor and the communities residing within the corridor are deemed to be more resilient to change and susceptible to the positive effects associated with future development.

2.12.2. Populations around Luton and Leagrave are denser, whilst areas across the middle section of the corridor (in central Bedfordshire) are more sparsely populated. As identified at scoping, rural communities often face issues with connectivity and isolation, when compared to the region's towns and cities. There is potential for development to benefit both the rural and urban populations within the corridor, however, proposals coming forward would need to ensure that it supports both urban and rural communities, in order to avoid disproportionate effects.

2.12.3. Per capita emissions are varied. In Luton per capita emissions are below the regional and national averages (3.24t) compared with a regional average of 5.3t and a national average of 5.1t. Per capita emissions are slightly higher in North Hertfordshire (5.2t) and Central Bedfordshire (5.82t). CO2 emissions across Central Bedfordshire are in excess of 2000kt annually, whilst levels in Luton and North Hertfordshire are between 500-1000kt annually.

2.12.4. The Great Ouse surface water drinking water protection zone runs across the majority of the corridor, along with five groundwater drinking water protection zones. within the corridor. Safeguard zones are used for areas around abstractions where water quality is poor. Future development may result in the need for increased abstractions, which could put additional stress on these zones. These safeguarded zones are therefore likely to be more sensitive to the negative effects arising from future development within the corridor.

2.12.5. There are a number of areas within the corridor that have a medium to high risk of flooding. These are predominantly located around Luton and Toddington. These areas are described as high-risk areas to people, critical services and commercial and public assets from surface water flooding.

2.12.6. This is one of very few corridors that does not have any European designated sites within its boundary, however there are still a number of potential ecological, landscape and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor.

KEY SUSTAINABILITY FEATURES

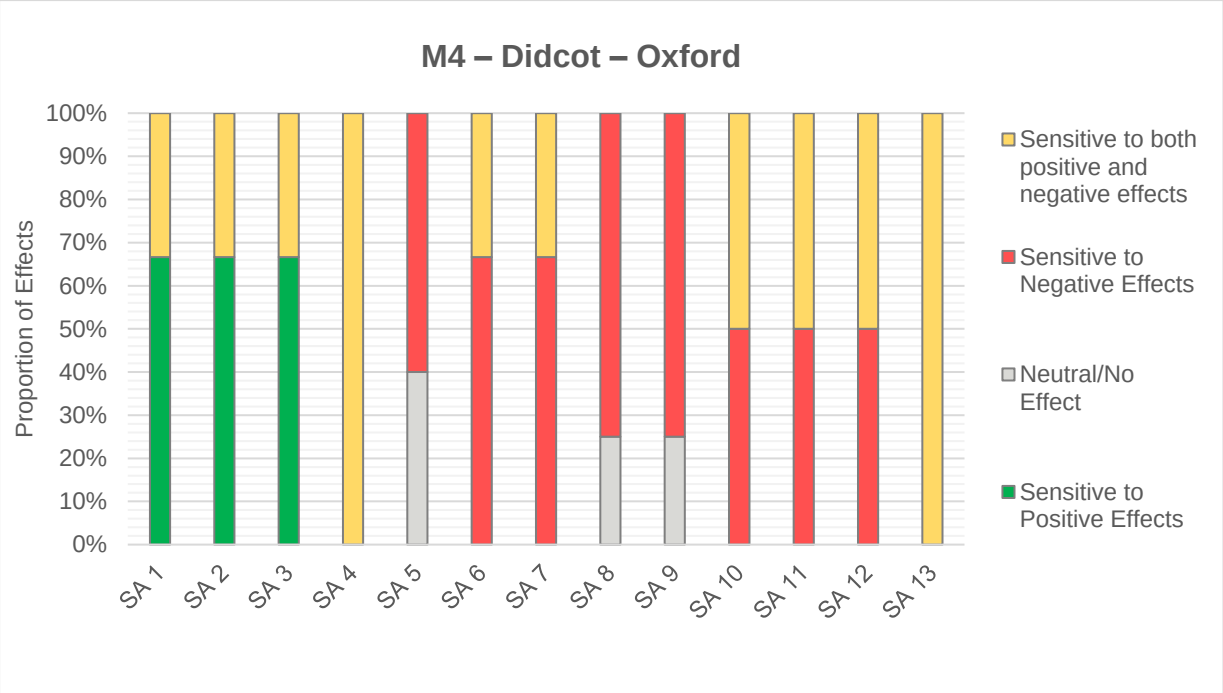
Key sustainability features of the Luton-East of Milton Keynes corridor include:

- GVA across the corridor is generally high, with values in Luton and Central Bedfordshire district at £5.2 billion and £5.6 billion respectively;
- There are six planned housing sites located within the corridor, the largest development due to take place in Chalk Hill with plans for the delivery of over 17,000 new homes between 2021-2046;
- There are eight planned employment sites across the corridor, the largest of which are located towards the south eastern section of the corridor in Luton;
- The percentage of people living across the corridor who are classed as overweight or obese is similar when compared to the national average;
- Levels of physical activity in Central Bedfordshire are similar to the national average, whilst levels in Luton are significantly worse than the national average;
- There have been a number of fatal and serious accidents occurring on the A5065, M1 and Luton Road;

- The number of people killed or seriously injured on the roads within the corridor is significantly better than the national average in Luton (35.7). but significantly worse than the national average in Central Bedfordshire;
- There are 11 SSSIs located within the corridor and an additional 5 SSSIs within the 2km boundary;
- There are 2 NNRs located within the corridor (Barton Hills and King's Wood and Rushmere);
- There are approximately 1.9 million tonnes of carbon stored within the 2km buffer (300,000 t within vegetation and 1.7 million t within 15cm topsoil);
- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 5.1 which is relatively medium compared to other corridors;
- There are 517 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 1,698 hectares;
- Parts of the corridor intersect the Chilterns AONB;
- The corridor intersects greenbelt land in Central Bedfordshire and North Hertfordshire;
- There are 16 scheduled monuments and 5 registered parks and gardens;
- There is one eutrophic river (River Great Ouse) within the corridor;
- The Great Ouse surface water drinking water protection zone runs across the majority of the corridor, along with five groundwater drinking water protection zones;
- There are a number of flood zones located along the length of the corridor, the most significant of which are located in Leagrave (south of Luton) and Toddington;
- There are four AQMAs located within the corridor;
- There are over 25 historic landfill sites;
- There are over 30 noise action planning areas located throughout the corridor. These are most densely populated around Luton and Toddington on the M1, A5120 and A6; and
- There is one noise agglomeration within the corridor (Luton/ Dunstable).

2.13 M4 – DIDCOT – OXFORD

Figure 2-12 - M4 – Didcot – Oxford



OVERVIEW

2.13.1. The overall sustainability performance of the corridor is varied, with the socio-economic and human health indicators outperforming the environmental indicators. There are a number of potential ecological, landscape and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor. This includes Blenheim Palace World Heritage Site.

2.13.2. With the exception of the urban areas of Oxford, Abingdon and Didcot, the majority of the land in-between surrounding the urban areas ranges between grade 2-3 agricultural land (very good to good/moderate). Just north of Oxford (in Noke) and just south of Oxford (in Kennington), there are areas of grade 1 agricultural land, which is classed as excellent and some of the best and most versatile land nationally.

2.13.3. There are a number of areas within the corridor that have a medium to high risk of flooding. These are predominantly located around Oxford, Kidlington, Didcot and Abingdon. These areas are described as high-risk areas to people, critical services and commercial and public assets from surface water flooding. There are several flood zones located along the length of the corridor, the most significant of which are located in Oxford, which is at risk of flooding from the River Thames, River Cherwell and the Oxford Canal.

2.13.4. Deprivation across the corridor is relatively low, with the local authorities of Vale of White Horse, South Oxfordshire and West Oxfordshire amongst the top 10% of least deprived local authorities nationally. Higher levels of deprivation are seen in Oxford and Cherwell; however, these local authorities are amongst the top 40% of least deprived local authorities nationally.

2.13.5. The population across the corridor varies. Populations around Abingdon and Oxford are denser whilst areas in West and South Oxfordshire are more sparsely populated. As identified at scoping, rural communities often face issues with connectivity and isolation, when compared to the region's towns and cities. There is potential for development to benefit both the rural and urban populations within the corridor, however, proposals coming forward would need to ensure that it supports both urban and rural communities, in order to avoid disproportionate effects.

2.13.6. The number of people who are classed as either overweight or obese across the corridor is significantly better than the national average. This is indicative of the high levels of physical activity. The levels of physical activity across the five local authorities making up the corridor is generally better than the national average. In Vale of White Horse District, South Oxfordshire, Oxford, Cherwell and West Oxfordshire levels are significantly better than the national average.

2.13.7. It should be noted that some parts of the corridor fall outside of the EEH boundary, where some data was not available.

KEY SUSTIANABILITY FEATURES

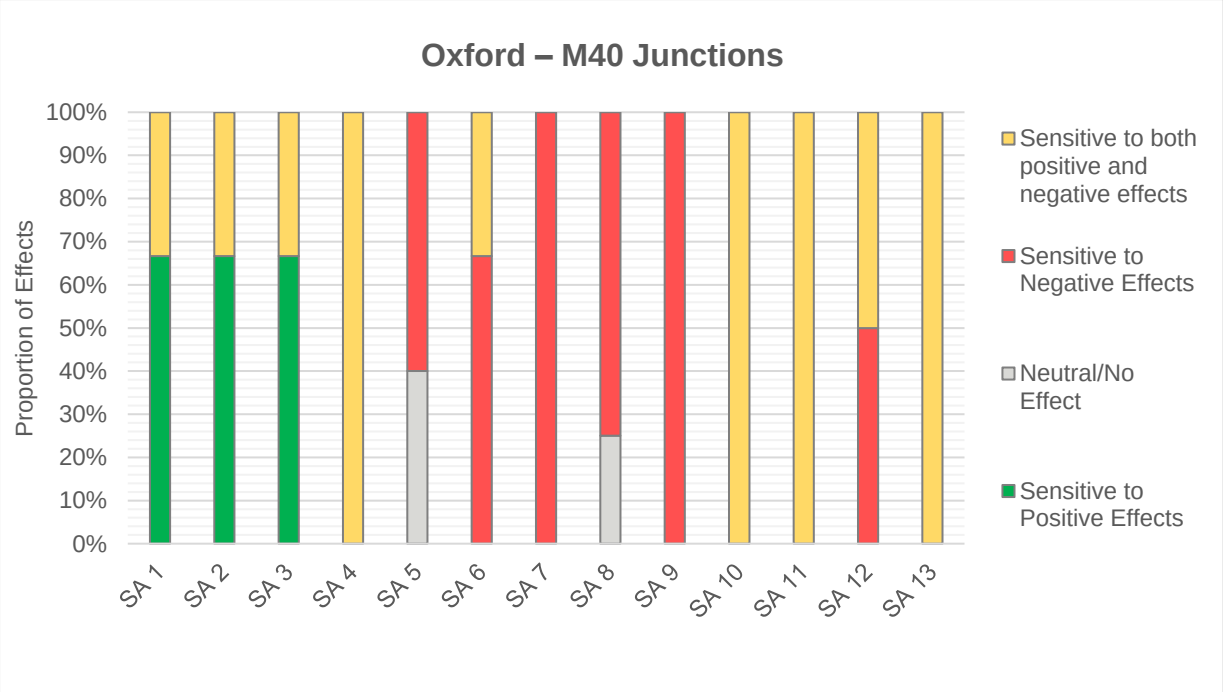
2.13.8. Key sustainability features of the M4 – Didcot – Oxford Corridor include:

- Low levels of overall, health and crime deprivation;
- There are 14 planned housing sites and 11 planned employment sites;
- GVA in Oxford is high (£6.7billion), however, outside of Oxford in the more rural local authorities, the GVA is lower;
- Levels of physical activity are high whilst levels of obesity are low;
- There have been a high number of fatal and serious accidents occurring on the A40, A34, A420 and A4260;
- There are 3 SACs located within the corridor; Oxford Meadows, Cothill Fen and Little Wittenham;
- Cothill NNR falls within the corridor boundary;
- There are approximately 5.6 million tonnes of carbon stored within the 2km buffer (600,000 t within vegetation and 5.0 million t within 15cm topsoil);
- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 5.5 which is relatively high compared to other corridors;
- There are 1,197 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 2,497 hectares;
- The southern section of the corridor intersects the North Wessex Downs AONB;
- The Thames Path and the Ridgeway National Trails both fall within the corridor boundary;
- The majority of the corridor surrounding and to the north of Abingdon lies within greenbelt land belonging to Oxford, Cherwell, South Oxfordshire, West Oxfordshire and the Vale of White Horse local authorities;
- Blenheim Palace World Heritage Site falls within the corridor;
- There are over 50 scheduled monuments and 15 registered parks and gardens;
- There is one eutrophic lake (Farmoor Reservoir) and two eutrophic rivers (River Thames and Langford Brook) within the corridor;
- There are two surface water drinking water protection zones; Upper Thames (Leach to Evenlode) and Lower Thames (Cookham Egham Teddington);
- There are 4 AQMAs located within the corridor;

- CO2 emissions vary across the corridor. Cherwell is in excess of 1000kt annually, whilst the Vale of White Horse, Oxford, South Oxfordshire and West Oxfordshire are all between 500-1000kt annually;
- The majority of the land in-between the urban areas ranges between grade 2-3 agricultural land. Just north of Oxford (in Noke) and just south of Oxford (in Kennington), there are areas classed as grade 1;
- There are over 30 historic landfill sites;
- There are 61 noise action planning areas located throughout the corridor. These are most densely populated around Oxford, Abingdon and along the A40, and A34; and
- There is one noise agglomeration located within Oxford.

2.14 OXFORD – M40 JUNCTIONS

Figure 2-13 - Oxford – M40 Junctions



OVERVIEW

2.14.1. The assessment of this corridor has identified a clear divide in performance between the socio-economic indicators and historical and environmental ones. Deprivation across the M40/A34 corridor is relatively low, with the local authorities of Vale of White Horse, Wycombe and South Oxfordshire amongst the top 10% of least deprived local authorities nationally. Higher levels of deprivation are seen in Oxford (Oxford is amongst the top 40% of least deprived local authorities nationally).

2.14.2. GVA across the area is high; Oxford has a GVA of £6.7billion and Wycombe has a GVA of £5.7billion. Outside of these areas in the more rural local authorities, the GVA is lower, albeit still high. Vale of White Horse has a GVA of £3.9billion and South Oxfordshire has a GVA of £3.9billion.

2.14.3. The number of people who are classed as either overweight or obese across the corridor is significantly better than the national average. This is indicative of the high levels of physical activity. The levels of physical activity across the four local authorities making up the corridor is generally

better than the national average. In the Vale of White Horse District, South Oxfordshire and Oxford levels are significantly better than the national average, whilst levels are similar in Wycombe.

2.14.4. The majority of the corridor lies within a surface water drinking water protection zone; Lower Thames (Cookham Egham Teddington). Safeguard zones are used for areas around abstractions where water quality is poor. Future development may result in the need for increased abstractions, which could put additional stress on these zones. Safeguarded zones are therefore likely to be more sensitive to the negative effects arising from future development within the corridor.

2.14.5. There are a number of areas within the corridor that have a medium to high risk of flooding. These are predominantly located around Abingdon and Didcot. These areas are described as high-risk areas to people, critical services and commercial and public assets from surface water flooding. These areas have potential to be sensitive to negative effects arising from future developments within the corridor.

2.14.6. With the exception of the urban areas of surrounding Abingdon and Didcot, the majority of the land across the corridor ranges between grade 2-3 agricultural land (very good to good/moderate), however, in Kennington, south of Oxford, there is an area classed as grade 1, which is classed as excellent and represents some of England's best and most versatile land.

2.14.7. There are a number of potential ecological, landscape and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor.

KEY SUSTIANABILITY FEATURES

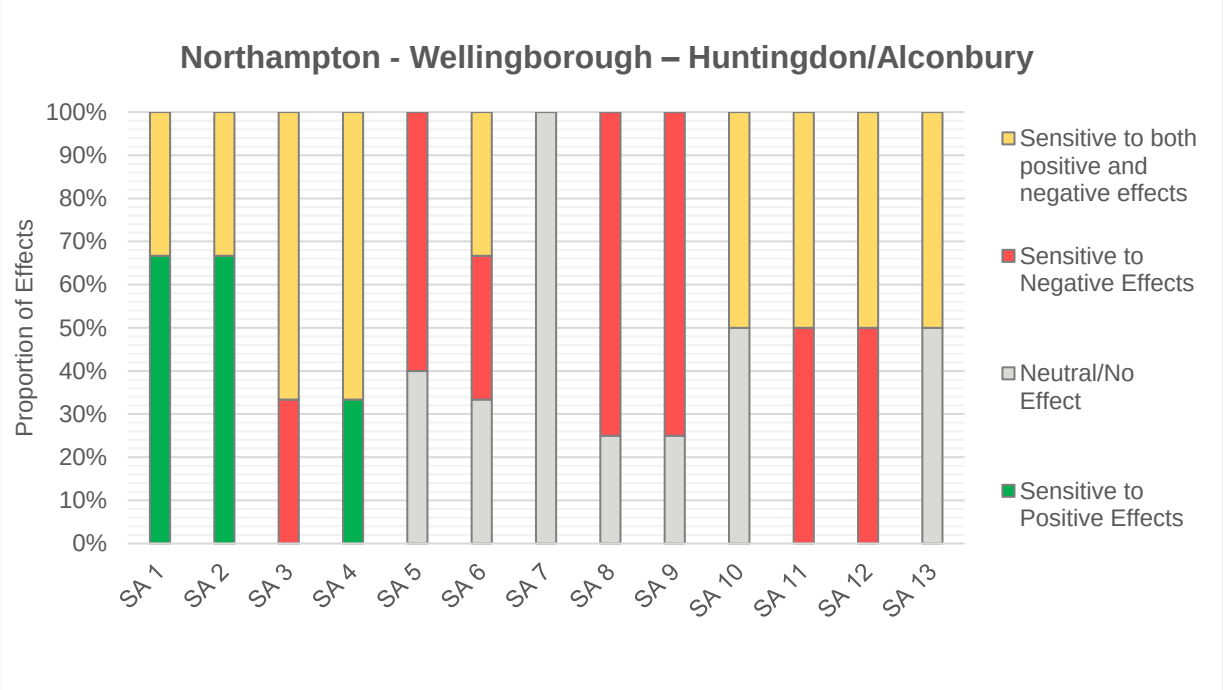
2.14.8. Key sustainability features of the Oxford – M40 Junctions Corridor include:

- General levels of overall, health and crime deprivation are low, however, pockets of health and crime deprivation exist in Oxford;
- There are 13 planned housing sites and 9 planned employment sites;
- Levels of physical activity are high whilst levels of obesity are low;
- The number of people killed or seriously injured on the roads within the corridor is significantly better than the national average in Buckinghamshire and similar in Oxford;
- There are a number of fatal and serious accidents occurring on the A40, A34, and the A415;
- There are four SACs located within the corridor; Cothill Fen, Little Wittenham, Aston Rowant and Chilterns Beechwoods;
- There are two NNRs located within the corridor; Aston Rowant and Cothill;
- There are approximately 5.6 million tonnes of carbon stored within the 2km buffer (700,000 t within vegetation and 4.9 million t within 15cm topsoil);
- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 5.5 which is relatively high compared to other corridors;
- There are 972 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 2,104 hectares;
- The southern section of the corridor lies within the North Wessex Downs AONB whilst the south eastern section lies within the Chilterns AONB;
- The Thames Path and the Ridgeway National Trails intersects the corridor boundary;
- The north western section of the corridor intersects greenbelt land belonging to Oxford and West Oxfordshire local authorities;

- There are, 9 registered parks and gardens, over 20 scheduled monuments and one registered battlefield located within the corridor (Battle of Chalgrove 1643);
- There are five ground source protection zones categorised as Zone 1 source protection zones;
- There is one eutrophic river within the corridor (River Thames);
- There majority of the corridor lies within a surface water drinking water protection zone; Lower Thames (Cookham Egham Teddington);
- There are a number of flood zones located along the length of the corridor, the most significant of which are located in Abingdon (River Thames);
- There are 6 AQMAs;
- In all the local authorities within the corridor, CO2 emissions are 500-1000kt annually;
- The corridor is comprised of high-quality agricultural land including areas of grade 1 quality;
- There are over 30 historic landfill sites;
- There are numerous noise action planning areas located throughout the corridor. These are most densely populated around Abingdon and along the A40, A34 and A4064; and
- There is one noise agglomeration located within Oxford.

2.15 NORTHAMPTON - WELLINGBOROUGH –- HUNTINGDON/ALCONBURY

Figure 2-14 - Northampton - Wellingborough – Huntingdon/Alconbury



OVERVIEW

2.15.1. The sustainability performance of this corridor is varied. This is one of very few corridors where no significant potential effects were identified in relation to the landscape indicators. However, there are a number of potential ecological and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor.

2.15.2. The whole corridor lies within the River Nene and Upper River Avon, River Leam and Draycote Reservoir surface water drinking water safeguard zones. Safeguard zones are used for areas around abstractions where water quality is poor. Future development may result in the need for increased abstractions, which could put addition stress on these zones. These safeguarded zones are therefore likely to be more sensitive to the negative effects arising from future development within the corridor.

2.15.3. There are a number of areas within the corridor that have a medium to high risk of flooding. These include areas surrounding the River Nene (Woodford and Denford), as well as areas around the River Ise (Arthingworth). These areas are described as high-risk areas to people, critical services and commercial and public assets from surface water flooding. These areas have potential to be sensitive to negative effects arising from future developments within the corridor.

2.15.4. Overall levels of deprivation across the corridor are generally low, with Daventry and East Northamptonshire being in the top 20% of least deprived local authorities nationally. Where deprivation is low, the communities are deemed to be more resilient to change and susceptible to the positive effects associated with future development within the corridor.

2.15.5. The performance of human health indicators is varied. The percentage of people living in Northampton who are classed as overweight or obese is worse than the national average (68% compared to 62% nationally), However, the levels of physical activity across the three local authority areas (Daventry, Kettering and East Northamptonshire) within the corridor are similar to the national average.

2.15.6. CO2 emissions across the corridor are relatively consistent, and across the majority of the area, levels are between 500-1000kt annually. There is the exception of a small area in the eastern section of the corridor, west of Thrapston, where levels are less than 500kt.

KEY SUSTIANABILITY FEATURES

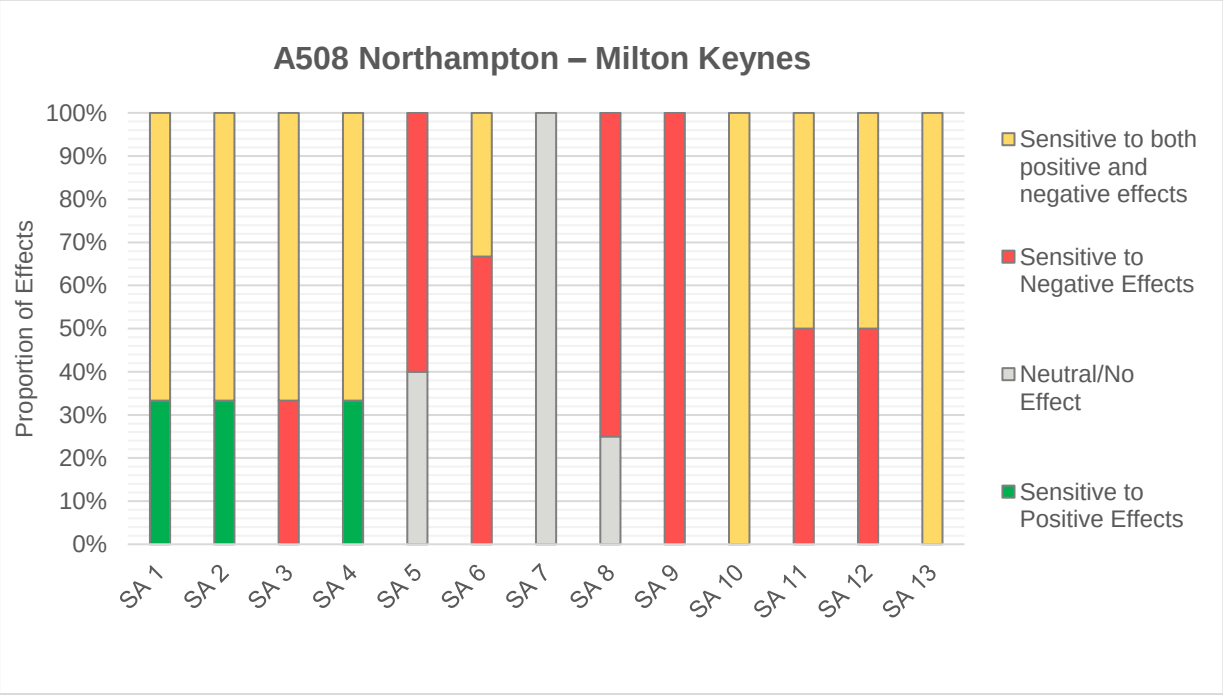
2.15.7. Key sustainability features of the Northampton - Wellingborough – Huntingdon/Alconbury Corridor include:

- Overall deprivation is low, whilst health and crime deprivation are varied;
- Populations around urban areas such as Kettering and Broughton are denser, whilst more rural areas surrounding Earton Seagrave are more sparsely populated;
- Kettering has high levels of economic activity;
- GVA across the corridor is relatively low;
- There are four planned employment sites and three planned housing sites;
- The levels of physical activity across the three local authority areas within the corridor are similar to the national average;
- The percentage of people living in Northampton who are classed as overweight or obese is worse than the national average;
- The number of people killed or seriously injured on the roads within the corridor is significantly better than the national average;
- There have been a number of fatal and serious accidents occurring on the A14, A6900, and the A6116;
- The Upper Nene Valley Gravel Pits SPA and Ramsar is located within the corridor;
- There are seven SSSIs located within the corridor and an additional four located with the 2km buffer;

- There are approximately 2.1 million tonnes of carbon stored within the 2km buffer (200,000 t within vegetation and 1.9 million t within 15cm topsoil);
- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 4.6 which is relatively low compared to other corridors;
- There are 284 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 468 hectares;
- There are twelve scheduled monuments and six registered parks and gardens;
- There is one registered battlefield located within the corridor (Battle of Naseby 1645 in Naseby);
- There is one eutrophic river (River Nene) within the corridor;
- The whole corridor lies within the River Nene and Upper River Avon, River Leam and Draycote Reservoir surface water Drinking Safeguard Zones;
- There are a number of flood zones located along the length of the corridor, the most significant of which are located around Kettering;
- With the exception of the urban areas of Kettering, the majority of the land within the corridor is classified as grade 2-3 agricultural land (very good to good/moderate);
- There are over 20 historic landfill sites; and
- There are 20 noise action planning areas, predominantly located around Kettering.

2.16 A508 NORTHAMPTON – MILTON KEYNES

Figure 2-15 - A508 Northampton – Milton Keynes



OVERVIEW

2.16.1. The assessment of this corridor identified a mixed sustainability performance. Of the 19 corridors assessed, it has one of the lowest number of positive sensitivities, with just three. Like the Northampton - Wellingborough –- Huntingdon/Alconbury ” corridor, no significant potential effects were identified in relation to the landscape indicators. However, there are a number of potential

ecological and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor.

2.16.2. There are a number of areas within the corridor that have a medium to high risk of flooding. These include areas surrounding the River Nene (Woodford and Denford), as well as areas around the River Ise (Arthingworth). These areas are described as high-risk areas to people, critical services and commercial and public assets from surface water flooding. These areas have potential to be sensitive to negative effects arising from future developments within the corridor.

2.16.3. The whole corridor lies within the River Nene surface water drinking safeguard zone. Safeguard zones are used for areas around abstractions where water quality is poor. Future development may result in the need for increased abstractions, which could put addition stress on these zones. These safeguarded zones are therefore likely to be more sensitive to the negative effects arising from future development within the corridor.

2.16.4. The population across the corridor varies. Populations around Northampton and to the west of Kettering are denser, whilst areas surrounding Northampton and in the far north of the corridor north of Guilsborough are more sparsely populated. This is represented in the GVA values. GVA in Northampton is high (£6.3billion). Outside of Northampton, the more rural areas have a lower GVA.

2.16.5. CO2 emissions across the corridor are relatively consistent, and levels are between 500-1000kt annually across the majority of the corridor. There is the exception of a small area in the northern section of the corridor, north of Overstone, where levels are less than 500kt. Conversely, per capita emissions are varied. Wellingborough and Northampton both exhibit per capita emissions below the regional and national averages, whilst Daventry, South Northamptonshire and Kettering all exceed the regional and national averages.

2.16.6. The levels of physical activity across the three local authority areas within the corridor are similar to the national average, however, the percentage of people living in the Northampton who are classed as overweight or obese is significantly worse than the national average (68% compared to 62% nationally).

KEY SUSTIANABILITY FEATURES

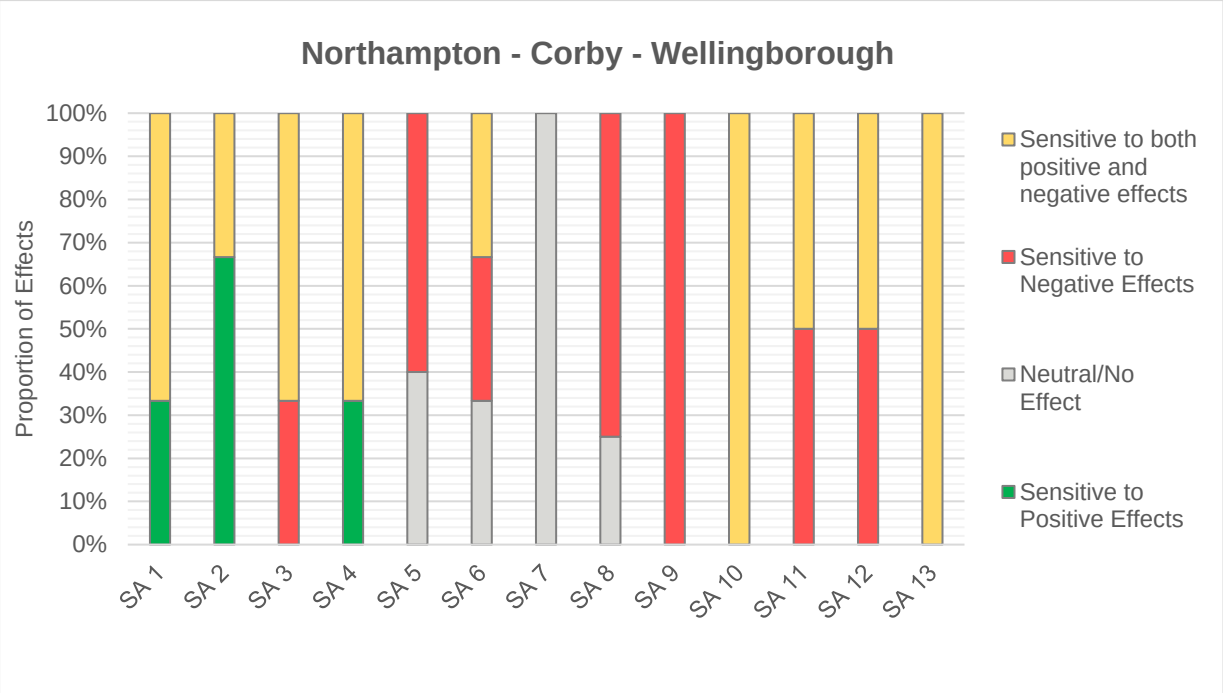
2.16.7. Key sustainability features of the A508 Northampton – Milton Keynes Corridor include:

- Deprivation across the corridor is generally low, with Daventry and East Northamptonshire being in the top 20% of least deprived local authorities nationally;
- Both crime and health deprivation are also low, but have pockets of deprivation in Kettering;
- Kettering has high levels of economic activity;
- Compared to other areas within the EEH region GVA is relatively low;
- There are four planned employment sites and three planned housing sites located within the corridor;
- The levels of physical activity across the three local authority areas within the corridor are similar to the national average;
- The percentage of people living in Northampton who are classed as overweight or obese is worse than the national average;
- The number of people killed or seriously injured on the roads within the corridor is significantly better than the national average;
- The Upper Nene Valley Gravel Pits SPA and Ramsar is located within the corridor;

- There are 4 SSSIs located within the corridor;
- There are approximately 2.6 million tonnes of carbon stored within the 2km buffer (200,000 t within vegetation and 2.4 million t within 15cm topsoil);
- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 4.8 which is relatively medium compared to other corridors;
- There are 564 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 1,489 hectares;
- There are 19 scheduled monuments and 7 registered parks and gardens;
- There are 2 registered battlefields located within the corridor (Battle of Northampton 1460 in Northampton and Battle of Naseby 1645 in Naseby);
- There are 2 areas within the corridor which are categorised as Zone 1 source protection zones;
- There is 1 eutrophic lake (Pitsford Reservoir) and 1 eutrophic river (River Nene) within the corridor;
- The whole corridor lies within the River Nene surface water drinking safeguard zone;
- There are a number of flood zones located along the length of the corridor, the most significant of which are located around Northampton;
- There are seven AQMAs located within the corridor;
- With the exception of the urban areas of Northampton, the majority of the land within the corridor is classified as grade 2-3 agricultural land (very good to good/moderate);
- There are over 20 historic landfill sites;
- There are over 30 noise action planning areas which are predominantly located around Northampton; and
- There is one noise agglomeration within the corridor, located in Northampton.

2.17 NORTHAMPTON - CORBY – WELLINGBOROUGH

Figure 2-16 - Northampton - Corby - Wellingborough



OVERVIEW

2.17.1. The sustainability performance of this corridor is varied, with a clear divide between socio-economic indicators and health and environmental indicators. Deprivation across the corridor is varied. The local authority of East Northamptonshire is amongst the top 10% least deprived local authorities nationally, however, higher levels of deprivation are seen in Corby and Northampton, which are in the top 30% most deprived local authorities.

2.17.2. The levels of physical activity across the three local authority areas within the corridor are similar to the national average, however, the percentage of people living in Northampton who are classed as overweight or obese is significantly worse than the national average (68% compared to 62% nationally).

2.17.3. The levels of physical activity across the six local authorities making up the corridor is varied. The local authorities of Corby and Wellingborough have worse levels of physically active adults compared with the national average and the local authorities of East Northamptonshire, Daventry District and South Northamptonshire are better than the national average. Northampton District and Kettering District have similar levels, when compared to the national average.

2.17.4. The population across the corridor is varied. The population is generally denser around Northampton, Wellingborough and Corby, whilst areas on the outskirts of Northampton and Kettering are more sparsely populated. This urban rural divide is reflected in the GVA values, whereby GVA in Northampton district is high (£6.3 billion), but outside of this area in the more rural local authorities, the GVA is lower.

2.17.5. The water environment has the potential to be sensitive to the negative effects of development, particularly with regards to flooding, water source protection zones and drinking water safeguard zones. High risks of flooding are identified in the Northampton, Kettering and Wellingborough.

2.17.6. Per capita emissions primarily exceed the national average with Wellingborough, Kettering, Daventry and East Northamptonshire all exceeding the regional and national averages. However, Northampton exhibits per capita emissions below the regional and national averages.

2.17.7. Like the previous two corridors, no significant potential effects were identified in relation to the landscape indicators. However, there are a number of potential ecological and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor.

KEY SUSTIANABILITY FEATURES

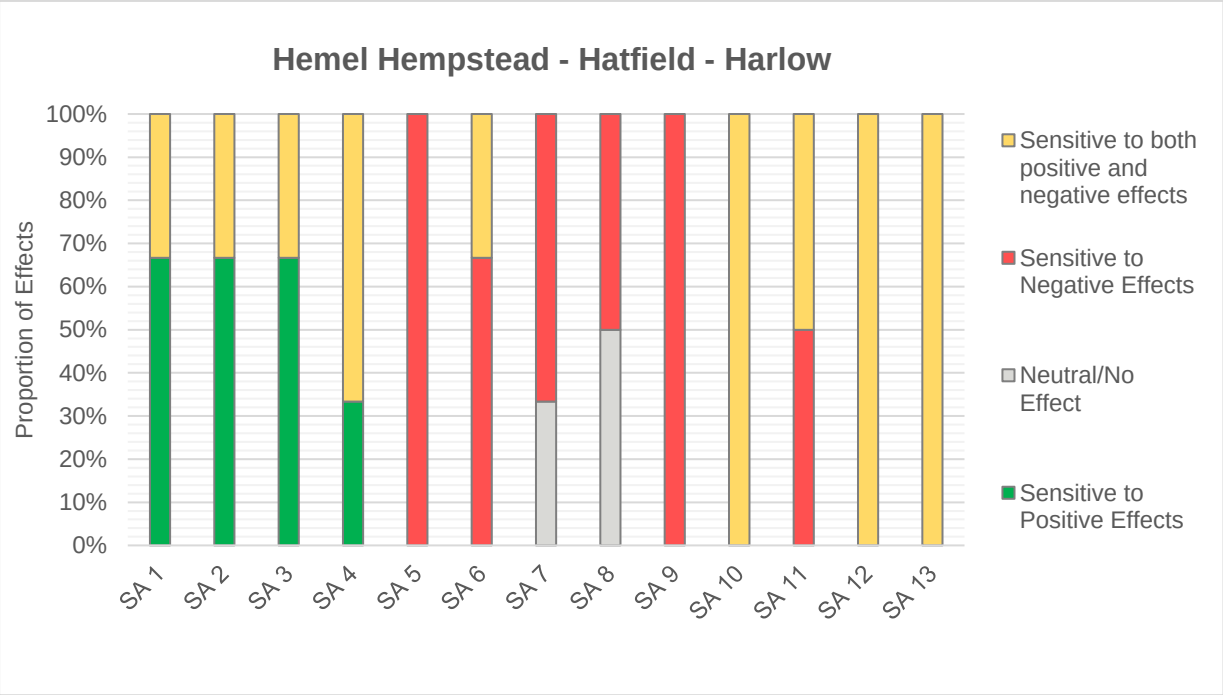
2.17.8. Key sustainability features of the Northampton - Corby – Wellingborough corridor include:

- The corridor has varied levels of overall, health and crime deprivation;
- There are 14 planned housing sites and 13 planned employment sites;
- Northampton has high levels of economic activity;
- GVA in Northampton is high (£6.3billion), but outside of this area in the more rural local authorities, the GVA is lower;
- The levels of physical activity across the 6 local authorities making up the corridor is varied;
- The percentage of people living in the Northampton County who are classed as overweight or obese is worse than the national average;
- The number of people killed or seriously injured on the roads within the corridor is significantly better than the national average;
- A number of serious or fatal accidents occur on the A427, A6014, A4300, A6, A510, A509, A45 and A5076;
- The Upper Nene Valley Gravel Pits SPA and Ramsar is located within the corridor;
- There are 9 SSSIs located within the corridor and an additional 8 SSSIs within the 2km boundary;
- There are approximately 3.2 million tonnes of carbon stored within the 2km buffer (400,000 t within vegetation and 2.8 million t within 15cm topsoil);
- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 4.6 which is relatively low compared to other corridors;
- There are 922 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 2,689 hectares;
- There are 19 scheduled monuments and 6 registered parks and gardens;
- There is one registered battlefield located within the corridor (Battle of Northampton 1460, in Northampton);
- There is one eutrophic river (River Nene) which runs along the south eastern boundary of the corridor;
- The whole corridor lies within a drinking safeguard zone (surface water);
- There are 7 AQMAs;
- The majority of the land across the corridor is classified as grade 2-3 agricultural land (very good to good/moderate);
- There are over 50 historic landfill sites;
- There are over 60 noise action planning areas located throughout the corridor. These are most densely populated around Corby, Kettering, Wellingborough and Northampton; and

- There is one noise agglomeration within the corridor, located in Northampton.

2.18 HEMEL HEMPSTEAD - HATFIELD - HARLOW

Figure 2-17 - Hemel Hempstead - Hatfield - Harlow



OVERVIEW

2.18.1. Of the 19 corridors, the assessment of the Hemel Hempstead - Hatfield - Harlow corridor resulted in the highest number of positive sensitivities, with seven in total. These positive sensitivities were identified with regards to population, economy and health indicators. Like all other corridors, there is a divide in performance between the socio-economic indicators and historical and environmental ones.

2.18.2. Deprivation across the corridor is relatively low. East Hertfordshire and St Albans are in the top 10% least deprived LSOAs nationally. However, Broxbourne is in the top 30% most deprived. Given that deprivation is low across the majority of the corridor, the communities are deemed to be more resilient to change and susceptible to the positive effects associated with future development within the corridor.

2.18.3. Economic activity is high across the corridor particularly in St Albans and Hemel Hempstead. GVA across the corridor is similar between the local authorities; East Hertfordshire (£3.8billion), Welwyn Hatfield (£4.2billion), St Albans (£4.2billion), Dacorum (£4.1billion) and Hertsmere (£3.4billion). The GVA is lowest in Broxbourne (£2.2billion).

2.18.4. Levels of physical activity are high, with East Hertfordshire, Welwyn Hatfield, St. Albans and Broxbourne all with levels significantly higher than the national average. This is reflected amongst the number of people who are classed as overweight or obese in the corridor, which is significantly lower than the national average.

2.18.5. There are a number of areas designated as water source protection zones across the corridor. Of note, there are 23 zone 1 protection zones located across the corridor, which are the most sensitive to contamination. Most of the rest of the corridor is categorised as zone 2 and zone 3, which will still need protection. Future development within these protected areas has potential to result in degradation in ground water quality, therefore a negative sensitivity has been recorded.

2.18.6. There are a number of potential ecological, landscape and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor.

KEY SUSTIANABILITY FEATURES

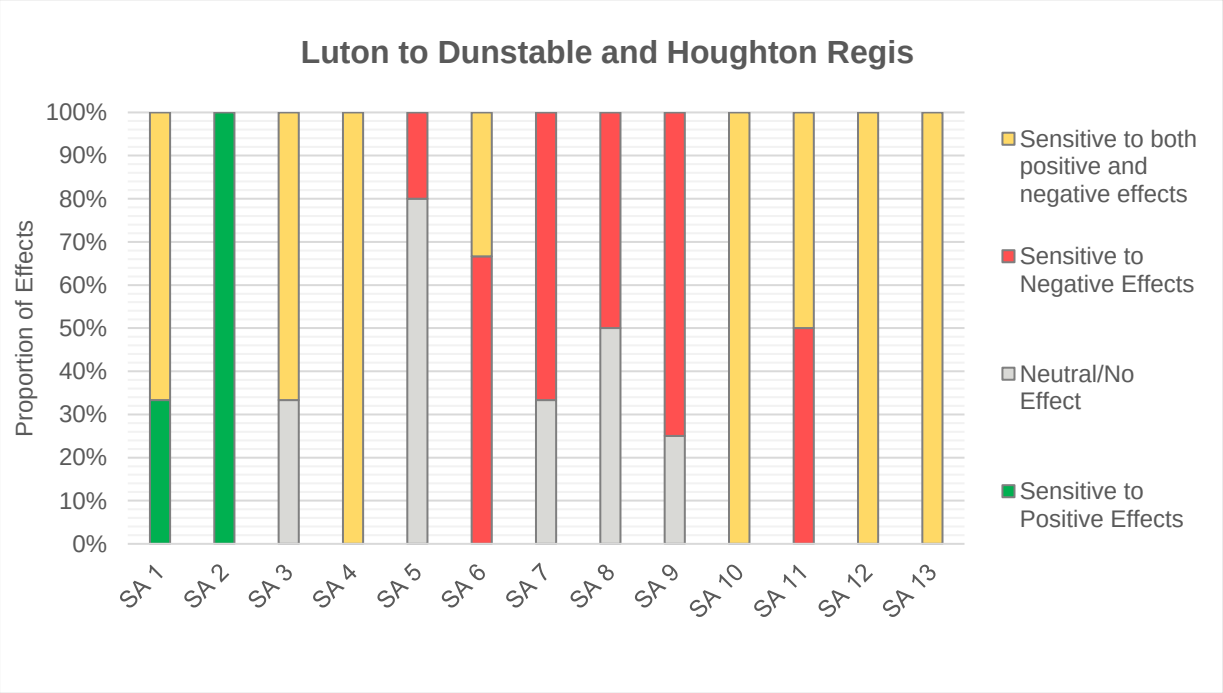
2.18.7. Key sustainability features of the Hemel Hempstead -Hatfield - Harlow Corridor include:

- Low levels of overall deprivation but varied levels of crime and health deprivation;
- There are 11 planned housing sites and 4 planned employment sites;
- St Albans and Hemel Hempstead both have high levels of economic activity;
- There are high levels of physical activity and low levels of obesity;
- The number of people killed or seriously injured on the roads within the corridor is significantly better than the national average;
- There have been a high number of accidents across the corridor, with a number of fatal and serious accidents occurring on the A414, A1001, and M25;
- There are no SACs located within the corridor, however, there is one SAC located within the 2km buffer (Wormley-Hoddesdonpark Woods);
- The Lee Valley SPA and Ramsar is located within the corridor;
- There are seven SSSI sites located within the corridor, with an additional site located within the 2km buffer;
- There are no NNRs located within the corridor, however Broxbourne Woods NNR is located within the 2km buffer;
- There are approximately 3.0 million tonnes of carbon stored within the 2km buffer (500,000 t within vegetation and 2.6 million t within 15cm topsoil);
- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 5.4 which is relatively medium compared to other corridors;
- There are 1,212 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 3,314 hectares;
- The Chilterns AONB intersects the corridor towards the north of Hemel Hempstead;
- The corridor intersects greenbelt land in Dacorum, St Albans, Hertsmere, Broxbourne, East Hertfordshire and Welwyn Hatfield;
- There are 35 scheduled monuments located within the corridor and an additional 16 located within the 2km buffer;
- There are 13 registered parks and gardens within the corridor and an additional 5 within the 2km buffer;
- There is one eutrophic river (Lea Navigation and River Lee) within the corridor;
- There are 5 drinking water protection zones (groundwater) and a further 2 drinking water protection zones (surface water) within the corridor;
- There are a number of flood zones located along the length of the corridor, the most significant of which are located in Hemel Hempstead (River Gade) and surrounding Ware, Hertford, Hoddesdon and Roydon (River Lee);

- There are 8 AQMAs located within the corridor;
- CO2 emissions across the majority of the corridor are between 500-1000kt annually, with the exception of Broxbourne, where emissions are less than 500kt annually;
- There are over 20 historic landfill sites;
- There are over 50 noise action planning areas located throughout the corridor. These are most densely populated around St Albans, Hemel Hempstead and Hertford along the A414, A4251 and A10; and
- There are 2 noise agglomerations within the corridor located in St Albans/Hatfield and part of the Greater London Area.

2.19 LUTON TO DUNSTABLE AND HOUGHTON REGIS

Figure 2-18 - Luton to Dunstable and Houghton Regis



OVERVIEW

2.19.1. Of the 19 corridors, the Luton to Dunstable and Houghton Regis corridor generated the least amount of negative sensitivities with a total of nine. The corridor also generated the joint highest amount of neutral/no effects, also with nine. The corridor is one of the only corridors to have no European designated sites within its boundary, however, there are a number of potential ecological, landscape and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor.

2.19.2. There are two surface drinking water protection zones which run across the centre of the corridor Great Ouse and Lower Thames (Cookham Egham Teddington) and three groundwater drinking water protection zones within the corridor. Safeguard zones are used for areas around abstractions where water quality is poor. Future development may result in the need for increased abstractions, which could put additional stress on these zones. These safeguarded zones are therefore likely to be more sensitive to the negative effects arising from future development within the corridor.

2.19.3. Per capita emissions are varied. Central Bedfordshire exhibits per capita emissions above the regional and national averages (5.82t, compared with 5.3t regionally and 5.1t nationally), whilst Luton and Hertfordshire both exhibit per capital emissions below the regional and national average (3.24t and 4.38t respectively). Per capita emissions within the corridor have the potential to be sensitive to both positive and negative effects of future developments and would highly depend upon the proposals that are brought forward. An increase in sustainable transport modes and encouragement of active travel could help to reduce per capita emissions, whilst roads schemes that make private transport more desirable, could result increase per capita emissions.

2.19.4. The population across the corridor varies. Populations around Luton and Dunstable are denser, whilst areas in Caddington and Lower Woodside are more sparsely populated. Luton and the east of Dunstable both have high levels of economic activity, which is reflected within their high GVA values. GVA in Luton and Central Bedfordshire is high (£5.2billion and £5.6 billion respectively). Outside of these areas in the more rural local authorities, the GVA is lower.

2.19.5. The water environment has the potential to be sensitive to the negative effects of development, particularly with regards to flooding, water source protection zones and drinking water safeguard zones. High risks of flooding are predominantly located around Luton.

KEY SUSTAINABILITY FEATURES

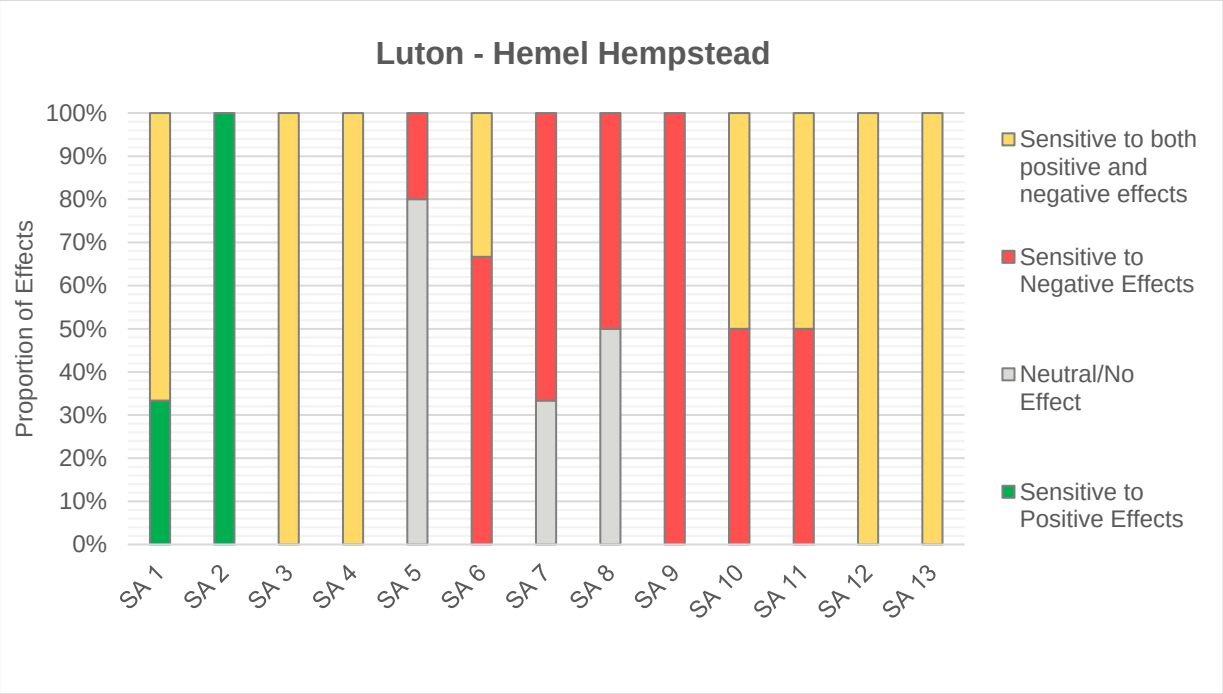
2.19.6. Key sustainability features of the Luton to Dunstable and Houghton Regis corridor include:

- Overall, Crime and health deprivation are all varied across the corridor, with pockets of deprivation generally located around Luton and Stockwood Park;
- There are two planned housing sites and three planned employment sites across the corridor;
- Levels of physical activity levels are worse than the national average in Luton, similar in Central Bedfordshire, and better in Dacorum;
- The percentage of people living in Luton, Central Bedfordshire and Dacorum who are classed as overweight or obese is similar to the national average;
- The number of people killed or seriously injured on the roads within the corridor is significantly worse when compared to the national average in Central Bedfordshire, but better than the national average in Hertfordshire and Luton;
- There have been a high number of accidents across the corridor, with a number of fatal and serious accidents occurring on the M1, A5065, A505 and A5483;
- There are four SSSIs located within the corridor and an additional two SSSIs within the 2km boundary;
- There are approximately 450,000 tonnes of carbon stored within the 2km buffer (50,000 t within vegetation and 400,000 t within 15cm topsoil);
- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 5.4 which is relatively medium compared to other corridors;
- There are 271 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 905 hectares;
- The southwestern section of the corridor intersects the Chilterns AONB;
- The majority of the corridor intersects greenbelt land belonging to Central Bedfordshire, with a small section in the south of the corridor which lies within the Hertfordshire greenbelt;
- There are five scheduled monuments and one registered park;
- There are 3 Zone 1 Protection Zones located across the corridor;

- There are two surface drinking water Protection Zones and three groundwater drinking water protection zones;
- There are a number of flood zones located along the length of the corridor, the most significant of which is located through Luton (River Lea or Lee);
- There are 3 AQMAs;
- There are over 20 historic landfill sites;
- CO2 emissions vary across the corridor. CO2 emissions in Central Bedfordshire were in excess of 2000kt annually, whilst the Luton and Hertfordshire levels are all between 500-1000kt annually;
- There are over 25 noise action planning areas located throughout the corridor. These are most densely populated around Luton and Dunstable on the A5065, A505 and the M1; and
- There is one noise agglomeration within the corridor located in the Luton/Dunstable urban area.

2.20 LUTON - HEMEL HEMPSTEAD

Figure 2-19 - Luton - Hemel Hempstead



OVERVIEW

2.20.1. The sustainability performance of the Luton to Hemel Hempstead corridor is varied, with a clear divide between socio-economic indicators and health and environmental indicators. Deprivation across the corridor is varied, with Luton being ranked amongst the top 20% of deprived local authorities nationally, whilst St Albans and Three Rivers are amongst the top 10% of least deprived local authorities nationally.

2.20.2. Economic activity is high across the corridor, particularly in Luton and Hemel Hempstead. Transport developments within this corridor are likely to compliment future economic activity, by providing residents with better access to jobs, services and facilities, supporting future economic growth. Areas of high economic activity are likely to be supported by transport development within these corridors and therefore likely to be sensitive to the positive effects of development.

2.20.3. Health is varied within the corridor. There are two LSOAs in Luton located amongst the top 10% of deprived neighbourhoods nationally with regards to health, however, outside of these areas, health deprivation is significantly lower.

2.20.4. The levels of physical activity across the corridor is varied. Central Bedfordshire, the Dacorum District and the Three Rivers District have similar levels to the national average. The Luton area has worse levels than the national average whilst the St Albans District has better levels than the national average. The percentage of people living across the corridor who are classed as overweight or obese is also varied. Levels in Hertfordshire are significantly better than the national average, similar in Central Bedfordshire and significantly worse in Luton.

2.20.5. The number of people killed or seriously injured on the roads within the corridor is significantly better than the national average (46.2 per 100,000 population) in Hertfordshire (37.1 per 100,000 population) and in Luton (35.7 per 100,000 population). However, the number of people killed or seriously injured on the roads in Central Bedfordshire is worse than the national average (49.5 per 100,000 population).

2.20.6. The water environment has the potential to be sensitive to the negative effects of development, particularly with regards to flooding, water source protection zones and drinking water safeguard zones. High risks of flooding are predominantly located around Luton, Redbourn and Hemel Hempstead.

2.20.7. The corridor is one of the only corridors to have no European designated sites within its boundary, however, there are a number of potential ecological, landscape and historical features (listed below) which have potential to be sensitive to the negative effects arising from future developments within the corridor.

KEY SUSTAINABILITY FEATURES

2.20.8. Key sustainability features of the Luton to Hemel Hempstead corridor include:

- Overall, crime and health deprivation are all varied across the corridor, with pockets of deprivation generally located around Luton;
- There are five planned housing sites and four planned employment sites;
- Luton and Hemel Hempstead both have high levels of economic activity;
- GVA is highest in Luton and Central Bedfordshire is high (£5.2billion and £5.6 billion respectively), however, values remain relatively high across the whole corridor;
- The level of physical activity across the corridor is varied;
- The percentage of people living across the corridor who are classed as overweight or obese is varied;
- There have been a high number of accidents across the corridor, with a number of fatal and serious accidents occurring on the M1, A414, A4251, Redborun Road, Old Walking Street and B4540;
- There is one SSSI located within the corridor (Roughdown Common) and an additional 2 SSSIs within the 2km boundary (Bricket Wood Common and moor Mill Quarry, West);
- There are approximately 1.2 million tonnes of carbon stored within the 2km buffer (200,000 t within vegetation and 1.0 million t within 15cm topsoil);
- The mean estimate of the number of nectar plant species for bees per 2×2m plot within the assessed corridor is 5.6 which is relatively high compared to other corridors;

- There are 534 accessible greenspace sites (partially) within the 2km buffer around the corridor with a total area of 1,738 hectares;
- The north-western section of the corridor intersects the Chilterns AONB;
- The corridor intersects greenbelt land in St Albans, Three Rivers, Dacorum, and Central Bedfordshire;
- There are 12 scheduled monuments and 4 registered parks and gardens;
- There are 7 zone 1 protection zones located across the corridor;
- There is one surface drinking water protection zone and two groundwater drinking water protection zones;
- There are a number of areas within the corridor that have a medium to high risk of flooding. These are predominantly located around Luton, Redbourn and Hemel Hempstead;
- CO2 emissions across the southern end of the corridor are between 500-1000kt annually, where at the northern end of the corridor (Central Bedfordshire) CO2 emissions are excess of 2000kt annually;
- There are over 35 historic landfill sites;
- There are over 20 noise action planning areas located throughout the corridor. These are most densely populated around the M25, Hempstead Road, A414, M1, Old Walting Street and around Luton; and
- There are three noise agglomerations within the corridor; Greater London Urban Area, Luton/ Dunstable and St Albans/ Hatfield.

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