Integrated Impact Assessment - Health Impact Assessment

Local Transport Plan 5

Inclusive Growth

Sustainable Development and Strategy

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Introduction

This document contains the Health Impact Assessment for the fifth Luton Local Transport Plan (LTP) for public consultation. LTP will help deliver sustainable transport, to help meet the 2040 vision for Luton, including decarbonising transport network, moving more trips to active modes to create healthier communities, improving air quality and connecting people with opportunities and services.

Public health and environmental concerns such as climate change, have increased in importance, with governmental policies also changing to reflect this. Simultaneously, economic decline and changing user habits have placed greater focus on redeveloping the economy and raising productivity levels, whilst also improving community services and facilities to accommodate post-COVID 19 changes.

As part of the development of an equitable and sustainable LTP, an Integrated Impact Assessment has been developed, of which this Health Impact Assessment is a component. The other assessments include an Environmental Impact Assessment and a Equalities Impact Assessment. Often, there are direct crossovers between equality and health.

Approach to the Health Impact Assessment

As part of the development of an equitable and sustainable Local Transport Plan, the preparation of an Integrated Impact Assessment (IIA), which this Health Impact Assessment (HIA) is part of, has been prepared to identify, evaluate, and mitigate sustainability, environmental, health and equalities concerns. Further information on equalities can be found in the Equalities Impact Assessment – a component part of the Integrated Impact assessment.

Health is influenced by several complex factors. Health Impact Assessment is a process to identify the likely health effects of proposals, policies, and projects and to implement measures to limit negative impacts and maximise the benefits of positive impacts. The purpose of this HIA is to act as a device to integrate health throughout the LTP planning process[1].

We have prepared this HIA in line with the Government's current published guidance **'Health Impact Assessment in spatial planning'**, given the Local Transport Plan is a spatial plan for transport. As part of this, we have drawn upon Public Health Outcomes Framework[2] indicators which are applicable to planning, by screening health and wellbeing metrics with the **Local Health Fingertips tool**. **Appendix A** contains a health-specific policy review, which we have conducted to ensure that the key themes of national, regional, and local policy are considered as part of this assessment.

We have ensured quality assurance as part of our HIA process, by objectively assessing spatial planning priorities in the context of health, using high-quality baseline evidence. These evidence-based findings will be used to provide recommendations, with the people of Luton in mind, to reduce health inequalities and protect community health. The findings from this HIA have been scrutinised and assessed by Public Health officers at the Council, and this document will be subject to feedback through public consultation.

This HIA has been undertaken of the draft LTP. The draft LTP will go out for public consultation, to gather feedback on the proposed policies and schemes. Following public consultation and finalisation of the LTP there may be additional considerations that are relevant to the health determinants which are the subject of this report, and as a result this HIA may need to be updated.

[1] Health Impact Assessment in spatial planning (Public Health England, 2020)

[2] Public Health Outcomes Framework (Public Health England, 2023)

The contents of the LTP and its constituent elements (particularly the objectives and outcomes) are broad, and it is at detailed scheme design and implementation where its full effects need to be considered and mitigated against. It is not possible to guarantee that the effect of the LTP will result in uniform positive impacts because a key consideration will be the way in which the LTP is delivered. This means that the HIA will need to be developed further when the LTP is delivered.

Vision

> *"By 2040, Luton will have a sustainable transport network enabling inclusive growth, providing access and improving health and wellbeing for all. Connections to and from the town will link residents, workers and employers to key economic hubs within the region, London and nationally."*

Objectives

There are seven main objectives underpinning the vision:

1. Create safer, active and healthier places that are liveable and improve quality of life for everyone
2. Tackle inequalities through accessible, affordable, and reliable transport choices that sustainably connect people with the key services and opportunities they need
3. Increase sustainable transport choices for all and reduce car dependency
4. Enable inclusive growth through enhanced sustainable connectivity and access to economic opportunities
5. Drive rapid decarbonisation in the movement of people and goods in line with local and central government targets, embracing innovation and technology
6. Embrace diversity across Luton through meaningful collaboration on transport plans, policies, and schemes
7. Support the financial viability of services through continued partnership working with other public sector bodies and the private sector, including neighbouring authorities, operators and employers [3]

Outcomes

For the purposes of the LTP, a set of outcomes have been identified resulting from each of the objectives.

Create safer, active and healthier places that are liveable and improve quality of life for everyone

- Reduced number of collisions or reduction in people killed or seriously injured (KSI)
- Increased levels of physical activity
- Improved access to green and blue spaces
- Improved air quality
- Reduced levels of noise pollution

Tackle inequalities through accessible, affordable, and reliable transport choices that sustainably connect people with the key services and opportunities they need

- Improved accessibility of the transport network
- Improved access to key services by sustainable modes
- Greater access to employment hubs and opportunities
- Reduced cost of travel by public transport (and other shared modes)

[3] Objectives 6 and 7 are focused on ways of working, and have therefor not been assessed in this impact assessment.

Increase sustainable transport choices for all and reduce car dependency

- Increased number of trips made using sustainable transport modes
- Improved customer experience of sustainable travel

Enable inclusive growth through enhanced sustainable connectivity and access to economic opportunities

- Reduced journey times by sustainable modes
- Improved journey time reliability
- Reduced delay from unplanned transport and weather-related events
- Increased labour market catchment for employers
- More new homes and other developments located near high-frequency public transport hubs

Drive rapid decarbonisation in the movement of people and goods in line with local and central government targets, embracing innovation and technology

- Increased number of electric vehicles and chargepoints (and zero emission refuelling)
- Reduction in greenhouse gas emissions from travel and transport infrastructure.

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Scoping and Methodology

This HIA has been undertaken to identify whether Luton's LTP could have a disproportionate impact on varying health determinants. This assessment considers potential positive and negative impacts, and where feasible, provides a detailed rationale to explain the degree to which each determinant is impacted.

Study area

The population scope of this HIA includes all residents within the Luton Borough Council boundary, which is outlined in Figure 1.

Figure 1: Geographical extent of HIA

Expressing how different health outcomes affect different sub-groups will help influence more targeted and meaningful transport interventions[4]. The main vulnerable groups within the population that have been identified are:

- Rural communities
- Coastal communities
- Women, girls and pregnant women
- Children and young people
- Older people
- Disabled people
- Unemployed or low-income groups

[4] Transport, health and wellbeing: An evidence review for the Department for Transport (NatCen Social Research, 2019)

Health determinants

Overwhelming evidence indicates the wider determinants of health, including socioeconomic factors, our physical environment, access, traffic, and health behaviours, have the most impact on our health. Table 1 shows the key determinants of health and wellbeing outcomes, as illustrated in Public Health England's Health Impact Assessment in spatial planning guide. The wider determinants reflect how transport is a complex contributing factor to several health-related outcomes.

Table 1: Wider determinants of health and wellbeing

HIA health considerations	Access	Traffic and Transport	Socio-economic	Land Use
Reduce health inequalities Improve mental health and wellbeing Improve diets and weight Improve musculoskeletal health Improve respiratory health Improve cardiovascular health Protect environmental health Provide access to health and care infrastructure	Local public key services and facilities Good quality affordable housing Healthy and affordable food Natural environment Green spaces and public realm Leisure, sport, recreation, play and physical activities within the environments	Accessibility Access to public transport Opportunities for active travel (cycling and walking) Links between communities Community severance Connections to jobs Connections to services, facilities and leisure	Employment, including skills development and training opportunities Local business activity Regeneration Tourism and leisure industries Community/social cohesions and access to social networks Community engagement	Sustainable and efficient land use in urban and/or rural settings Quality of Urban and natural environments, such as air and noise pollution Climate change impacts

Source: Public Health England

Transport and movement are likely to exhibit a combination of direct and indirect impacts on different health determinants. In order to undertake a focussed assessment, health has been analysed in the context of the eight key pathways associated with transport as presented in the Government's Transport and Health Resource[5].

While the wider determinants set out in Table 1 are inter-connected**,** those which are most pertinent to Luton are discussed under the pathways:

- Lifestyle
- Access, accessibility, and community severance
- Economic health
- Safety
- Crime
- Congestion and stress
- Air quality
- Noise

[5] Transport and Health Resource (Department for Transport and Department for Health, 2011)

Using the public health outcomes framework, key indicators have been identified on both a national and district level and can be mapped to each of the eight health pathways. **Appendix B** illustrates this data in more detail. Pathways lacking direct links to the public health outcomes, have been further supported by supplementary data in Chapter 3: Baseline Evidence:

(i). Lifestyle

- Life expectancy
- Obesity levels
- Health status
- Physical activity and wellbeing
- Prevalence of smoking

(ii). Access, accessibility and community severance

- Disability levels
- Access to health
- Deprivation levels

(iii). Economic health

- Employment and workforce breakdown
- Education levels

(iv). Safety (risk of trips, strain and collision)

- Road collisions and safety
- Road condition

(v). Crime

- Crime rate

(vi). Congestion and stress

- Mental health

(vii). Air quality

- Air quality and health
- Carbon emissions
- Open spaces

(viii). Noise

- Noise pollution

Impacts on equality

This HIA provides an assessment of the LTP's likely impact on health. Often, there are direct crossovers between health and equality. Further information on the implications of the LTP on equality is provided within the Equality Impact Assessment (EqIA).

A summary of scoping exercise is presented in Table 1.

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Baseline evidence

Data sources

For the purpose of this assessment, data and information has been gathered about protected characteristics for all Luton Census Output Areas alongside England as a whole and the East of England statistical region. The Census Output Areas that are included in Luton, as shown in Luton Borough Council's Local Insight website, provides a further up-to-date basis for the data explored in this section.

As set out in Scoping and Methodology, the following vulnerable groups within the population have been identified:

- Rural communities
- Coastal communities
- Women (with a focus on pregnant women) and girls
- Children and young people
- Older people
- Disabled people
- Unemployed or low-income groups

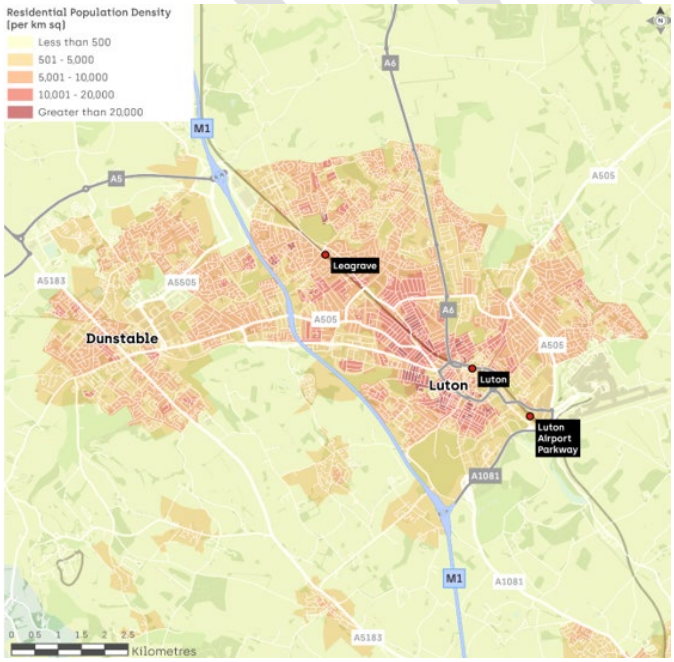
The following chapter will take into consideration the needs of these groups and highlight the role of transport can play in facilitating and supporting a more socially equitable and inclusive future in which health inequalities are minimised.

Demographics

Population size

Based on Luton Business Intelligence mid-year population estimate, the population in Luton is approximately 239,000. This was an increase of 2% on the previous year, with the overall population of Luton increasing 12% between the 2011 census and 2024 statistic. The town covers an area of 43 square kilometres, with the population density of the area presented in Figure 2. The most densely populated areas are the wards of Beech Hill and Bescot in the central area of Luton, and the overall area is the most densely populated outside of London.

Figure 2: Population Density Luton

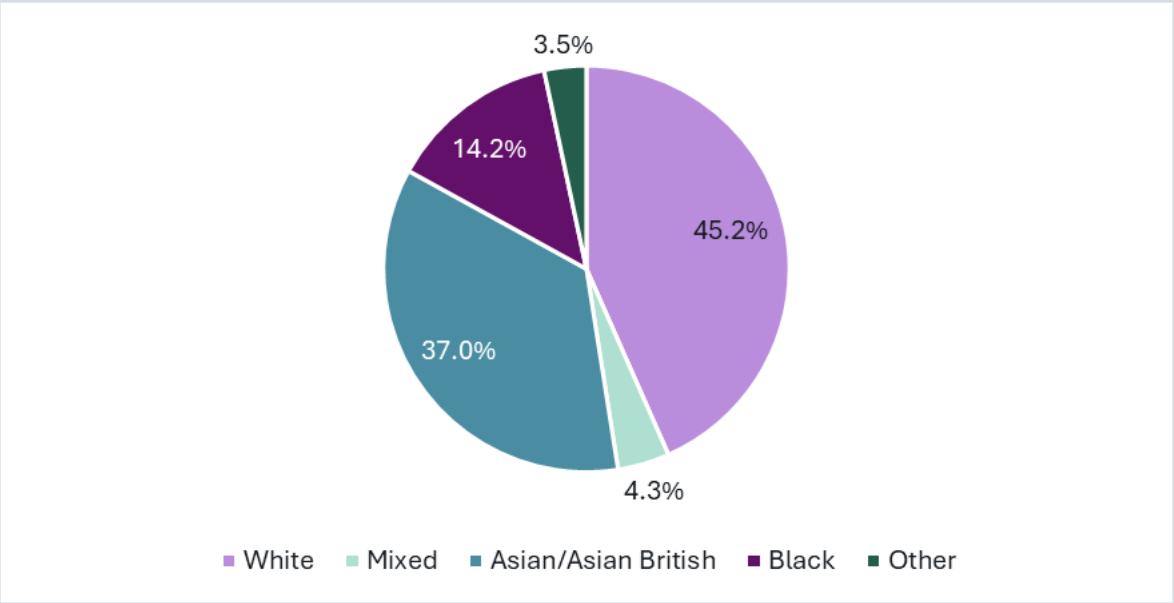


Source: Census 2021

Race and Ethnicity

People from ethnic minorities are a population-sub-group reported to be particularly at risk of transport poverty[6]. Transport poverty refers to households and individuals who struggle or are unable to make the journeys that they need. There are several definitions, but they tend to comprise low income, poor availability of public transport and needing a long time to access essential services.

Figure 3: Ethnicity in Luton



Ethnicity	Percentage
White	45.2%
Mixed	4.3%
Asian/Asian British	37.0%
Black	14.2%
Other	3.5%

Source: Census 2021

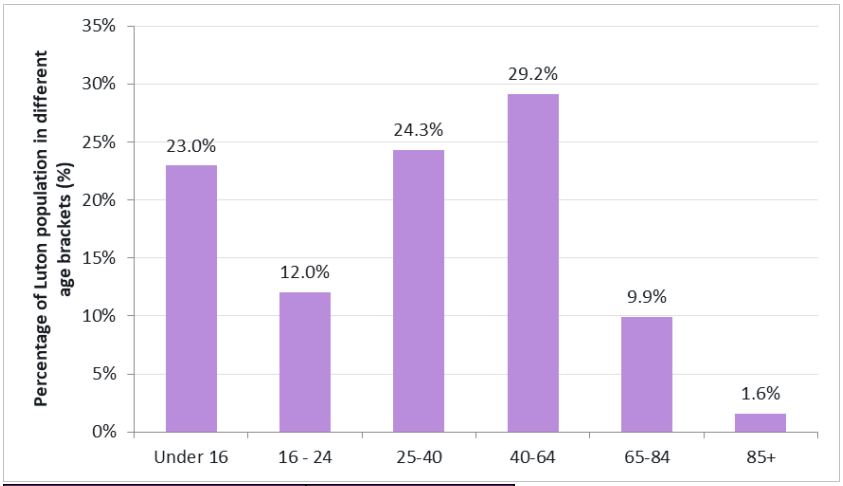
As shown in Figure 3, less than half of people in Luton (45.2%) were of white origin according to the 2021 census with more than a third of the population coming from an Asian background. Luton is increasingly acknowledged to be a super diverse area, and this trend is expected to continue. For example, 64.6% of live births in the town between 2016 and 2022 born to non-UK born mothers[7] and the census recording over 100 different languages and dialects being spoken in Luton.

Age is an interconnected factor with health determinants. As a result of LTP5, those most vulnerable are likely to be disproportionately impacted. Hence, appropriate analysis of age distribution and demographics in Luton is essential to understanding the health impacts on different groups.

[6] Transport and inequality: An evidence review for the Department for Transport (NatCen Social Research, 2019)

[7] https://www.luton.gov.uk/Community_and_living/Lists/LutonDocuments/PDF/observatory/jsna-this-is-Luton.pdf

Figure 4: Age distribution in Luton

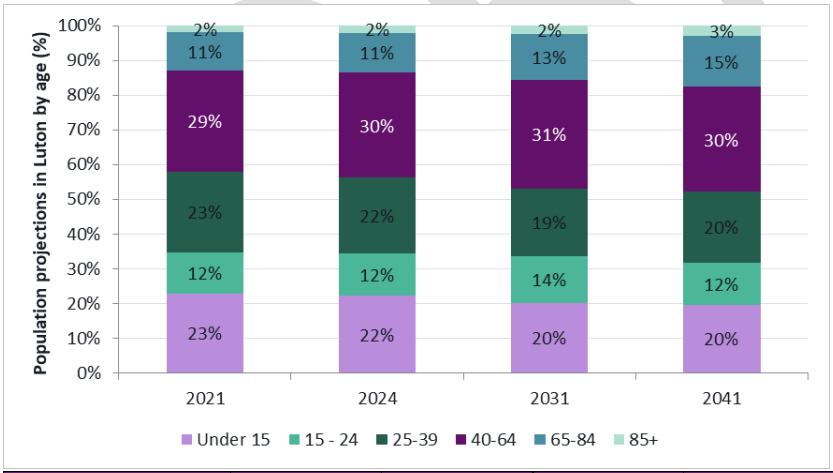


Age	Percentage
Under 15	22.0%
16-24	13.0%
25-40	24.3%
40-64	29.2%
65-84	9.9%
85+	1.6%

Census 2021

Individuals between the age of 40 and 64 account for approximately 29.2% of the population of Luton, while over 65s account for approximately 11%, both disproportionately lower than the England average. A growth in the number of older groups is expected, with those aged over 40 expected to grow from 42% of the population to 48% of the population from 2021 to 2041.

Figure 5: Population change by age group in Luton



Age	2021	2024	2031	2041
Under 16	23%	22%	20%	20%
16-24	12%	12%	14%	12%
25-40	23%	23%	19%	20%
40-64	29%	32%	31%	30%
65-84	11%	9%	13%	15%
85+	2%	2%	2%	3%

Source: ONS population projections for local authorities

As people age, they become more prone to developing complex health conditions such as dementia and type 2 diabetes. Conditions such as this can have a significant impact on people's ability to move around and can increase the risk of falls. This in turn can lead to people living more reclusive lifestyles.

The LTP5 should also ensure that new development is inclusive and accessible to all users, with careful consideration given to the design of public space. Seating, as well as shade and shelter from the elements should be incorporated into these designs so that older people have places to sit, rest and socialise.

Improving access to public transport should also be an important part of LTP5. This will provide older people with better opportunities to access key services and reduce social isolation.

Life expectancy

Life expectancy refers to the number of years an individual is forecasted to live at birth. Table 2 shows that life expectancy in Luton is lower for both Male and Female residents than the national average. Men living in the most deprived areas of Luton can expect to live on average nine years less than those from the most affluent parts of the town, the life expectancy gap for women is slightly lower at five years.[8]

Table 2: Life expectancy in Luton compared to England 2020-2022

	Male	Female
Luton	77	81.3
England	78.9	82.8

Source: Fingertips, Public Health England

Health determinant 1: Lifestyle

Obesity

Obesity and overweight are significantly more prevalent in Luton compared to similar areas, with 43% and 28% of Year 6 children affected, respectively. Adult obesity prevalence in Luton stands at 23%, which is comparable to similar areas (22%) but lower than in Central Bedfordshire, Milton Keynes, and the national average of 29% for England, as shown in Figure 6.

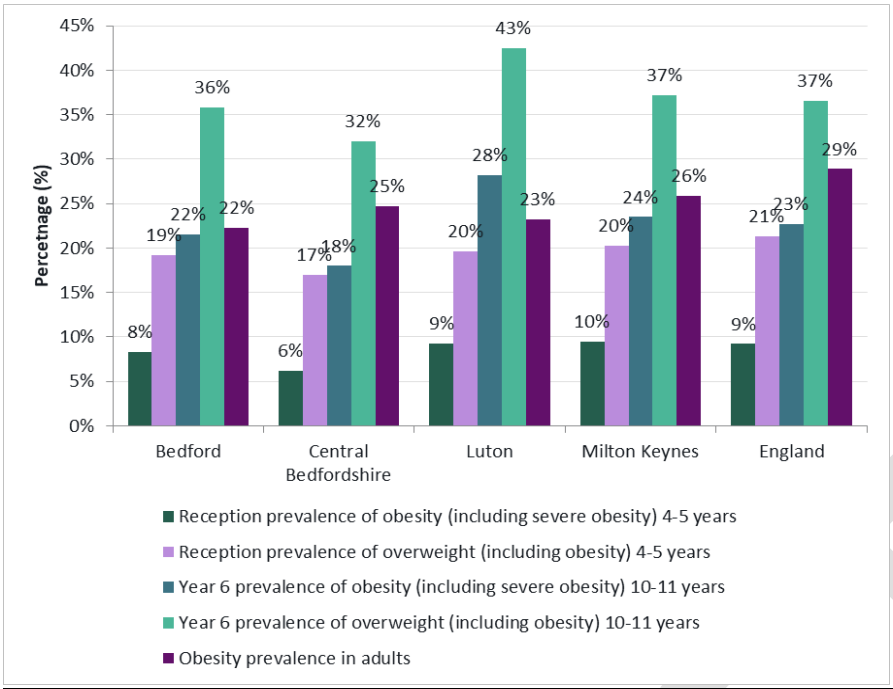
Obesity can impact an individuals' mobility, meaning people are more reliant on private car use or public transport to reach goods and services including reaching GPs or hospitals for medical check-ups. This therefore results in more vehicles on the county's roads, leading to increased emissions. Providing an accessible alternative to private vehicles will aid gradual modal shift to active travel or sustainable transport modes. Modal shift to active travel could have significant positive impacts on children and young people's health through encouraging activity in travel to school (reducing the number of car journeys at drop off and pick up times).

The Government's Transport and Health Resource states that, on average, each journey by public transport requires 6-10 minutes of walking[9]. Whilst the health benefits of journeys solely consisting of active travel are more apparent, the use of public transport can also contribute to achieving recommended levels of physical activity by facilitating small yet routine physical activity.

[8] https://www.luton.gov.uk/Community_and_living/Lists/LutonDocuments/PDF/observatory/jsna-this-is-Luton.pdf

[9] Transport and Health Resource (Department for Transport and Department for Health, 2011)

Figure 6: Obesity prevalence in Luton and comparative areas



Area	Reception prevalence of obesity (including severe obesity) 4-5 years	Reception prevalence of overweight (including obesity) 4-5 years	Year 6 prevalence of obesity (including severe obesity) 10-11 years	Year 6 prevalence of overweight (including obesity) 10-11 years	Obesity prevalence in adults
Bedford	8%	19%	22%	36%	22%
Central Bedfordshire	6%	17%	18%	32%	25%
Luton	9%	20%	28%	43%	23%
Milton Keynes	10%	20%	24%	37%	26%
England	9%	21%	23%	37%	29%

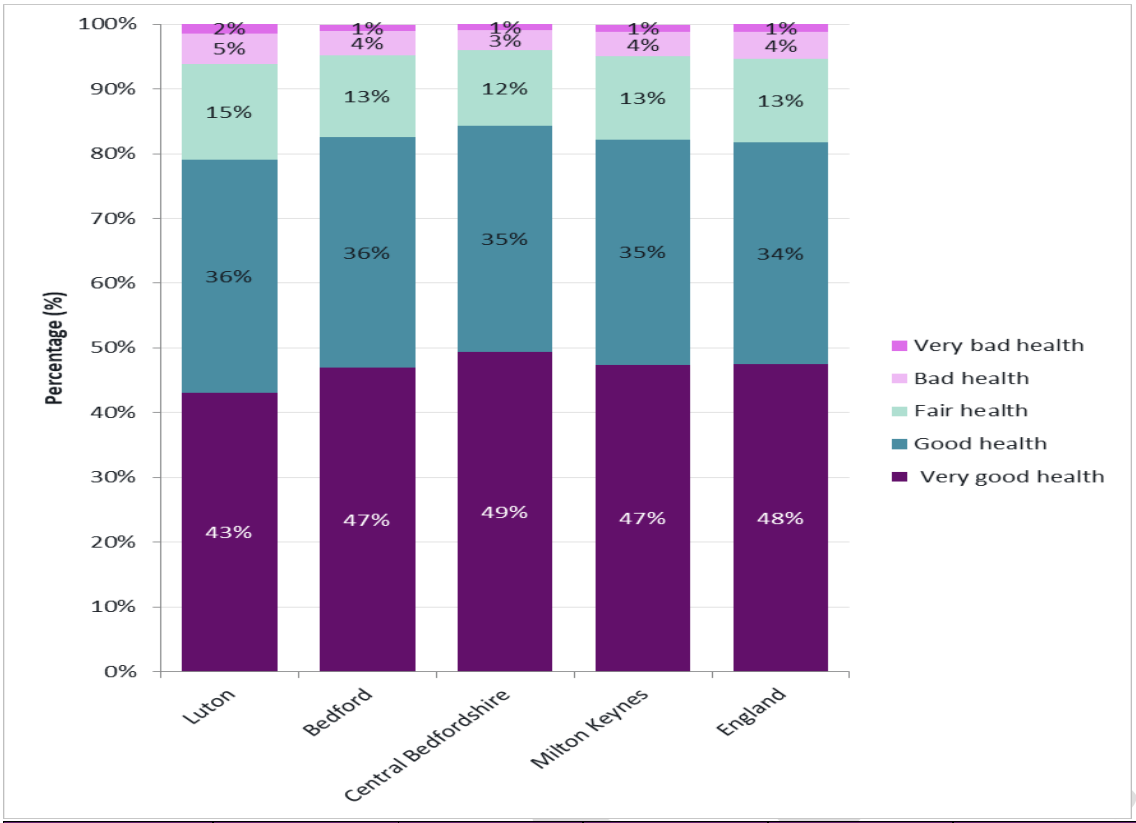
Source: Source: Fingertips, Public Health England

Health status

Health status in Luton is significantly lower than in comparable areas, with less than 80% of residents reporting good or very good health—lower than all comparable areas. Luton also has a higher proportion of people in bad or very bad health (5%) compared to the national average (4%), with double the prevalence of very bad health (2% compared to 1%), as shown in Figure 7.

Long-term poor health status may result in social isolation and as a consequence increase loneliness and poor mental health. This highlights the necessity of transport connectivity which gives people freedom to travel and facilitates friends and family visiting those who are less able to travel themselves.

Figure 7: Health status in Luton and comparative areas



Area	Very good health	Good health	Fair health	Bad health	Very bad health
Luton	43%	36%	15%	5%	2%
Bedford	47%	36%	13%	4%	1%
Central Bedfordshire	49%	35%	12%	3%	1%
Milton Keynes	47%	35%	13%	4%	1%
England	48%	34%	13%	4%	1%

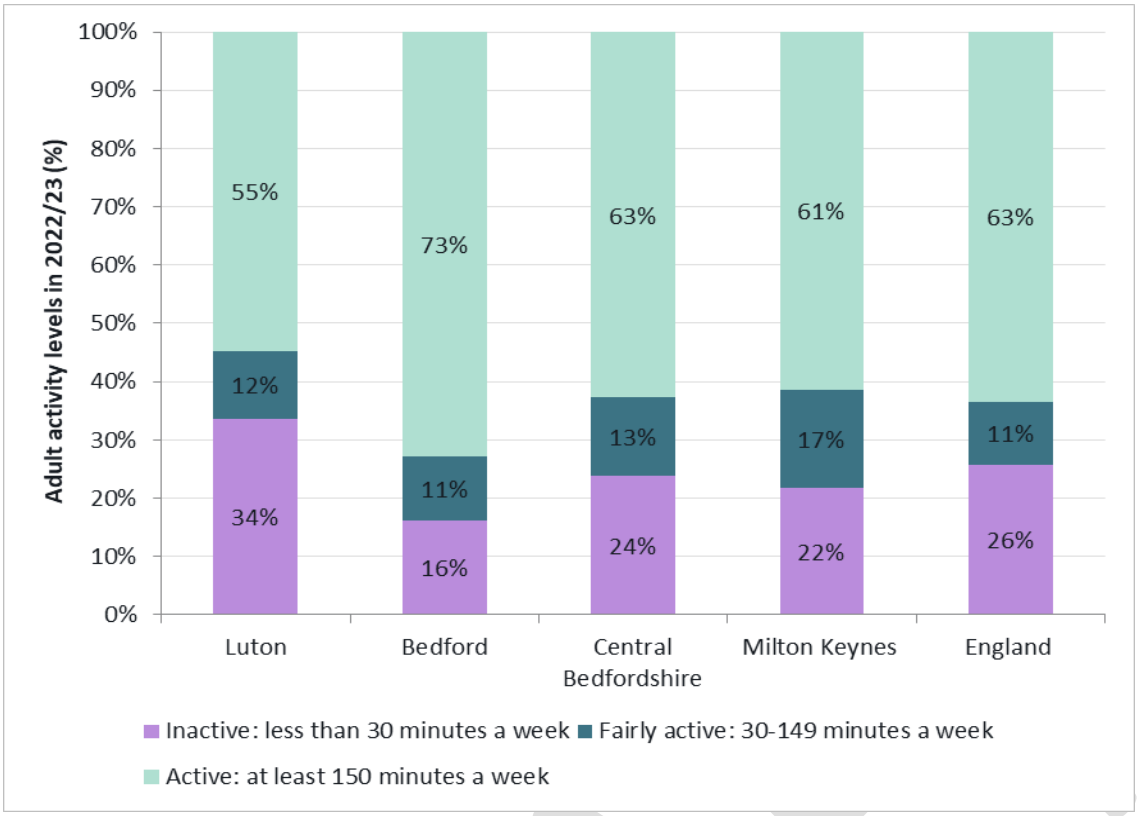
Source: Source: Fingertips, Public Health England

Physical activity and wellbeing

Although the components of mental health are complex, it is a vital part of wellbeing. Mental health can impact physical proactivity, thus a lack of transport connectivity can lead to seclusion and reduced physical activity. The LTP5 should therefore consider initiatives which encourage people to achieve the recommendation for levels of physical activity. Further, the noise impacts resulting from transport construction and interchange can negatively affect mental health.

As shown in Figure 8 compared to England, Luton has higher levels of physical inactivity (34% compared to 26%) and lower levels of physical activity (55% compared to 63%). Notably, the levels of physical inactivity are significantly higher than comparative surrounding areas.

Figure 8: Activity levels in Luton and comparative areas



Area	Inactive: less than 30 minutes a week	Fairly active: 30-149 minutes a week	Active: at least 150 minutes a week
Luton	34%	12%	55%
Bedford	16%	11%	73%
Central Bedfordshire	24%	13%	63%
Milton Keynes	22%	17%	61%
England	26%	11%	63%

Source: Sport England

Prevalence of smoking

Whilst smoking rates nationally and in Luton have declined over time, Luton is in the top 20% of Local Authorities for smoking prevalence in adults.[10] Luton has a higher smoking rate and subsequently a higher burden of disease and mortality. as a result of smoking. than England as a whole. According to Luton's Tobacco Strategy,[11] smoking accounts for 1501 hospital admissions in Luton each year, and 574 deaths between 2017 and 2019. Smoking also has a significant relationship with, and impact on, poverty levels, with 15,000 people in Luton living below the poverty line due to smoking.[12]

[10] OHID Smoking prevalence in adults 18+, 2021

[11] Luton Borough Council Tobacco Strategy, 2023-2028

[12] ASH Economic and health inequalities dashboard, 2021

Health determinant 2: Access, accessibility, and community severance

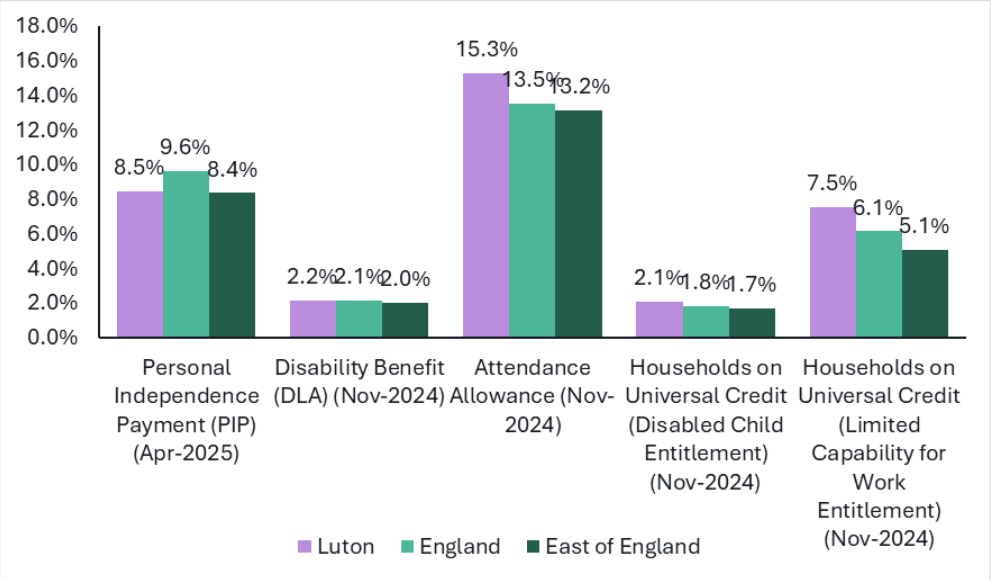
Disability

Health impairments can also include disabilities. Disability refers to people who have physical, sensory, intellectual, or mental health impairment(s). Transport can disproportionately impact individual physical health, which may result in some groups in the population finding it difficult to use certain modes of transport or being excluded from using them entirely. The LTP needs to consider the needs of different users and take steps to accommodate these needs as much as possible in order to provide an inclusive transport network.

Disability benefit statistics set out in Figure 9 show that relatively more people are in receipt of disability benefits in Luton compared with England and the East of England, with the exception of the Personal Independence Payment (PIP). For example, 15.3% of those potentially eligible receive Attendance Allowance in Luton, higher than both the national average (13.5%) and the East of England average (13.2%). As shown in Figure 5 the population of Luton is expected to age in the coming decades (albeit to a lesser extent than the national average), which is likely to bring about an increase in the proportion of people with age-related disabilities in particular.

Likewise, the number of Blue Badges issued to disabled people in Luton is expected to increase as a result of the county's ageing population. This is an important consideration as more on-street parking may have to be dedicated to Blue Badge holders to allow them to park close to the facilities and services they need.

Figure 9: Proportion of potentially eligible residents in receipt of disability benefits in Luton, England and the East of England



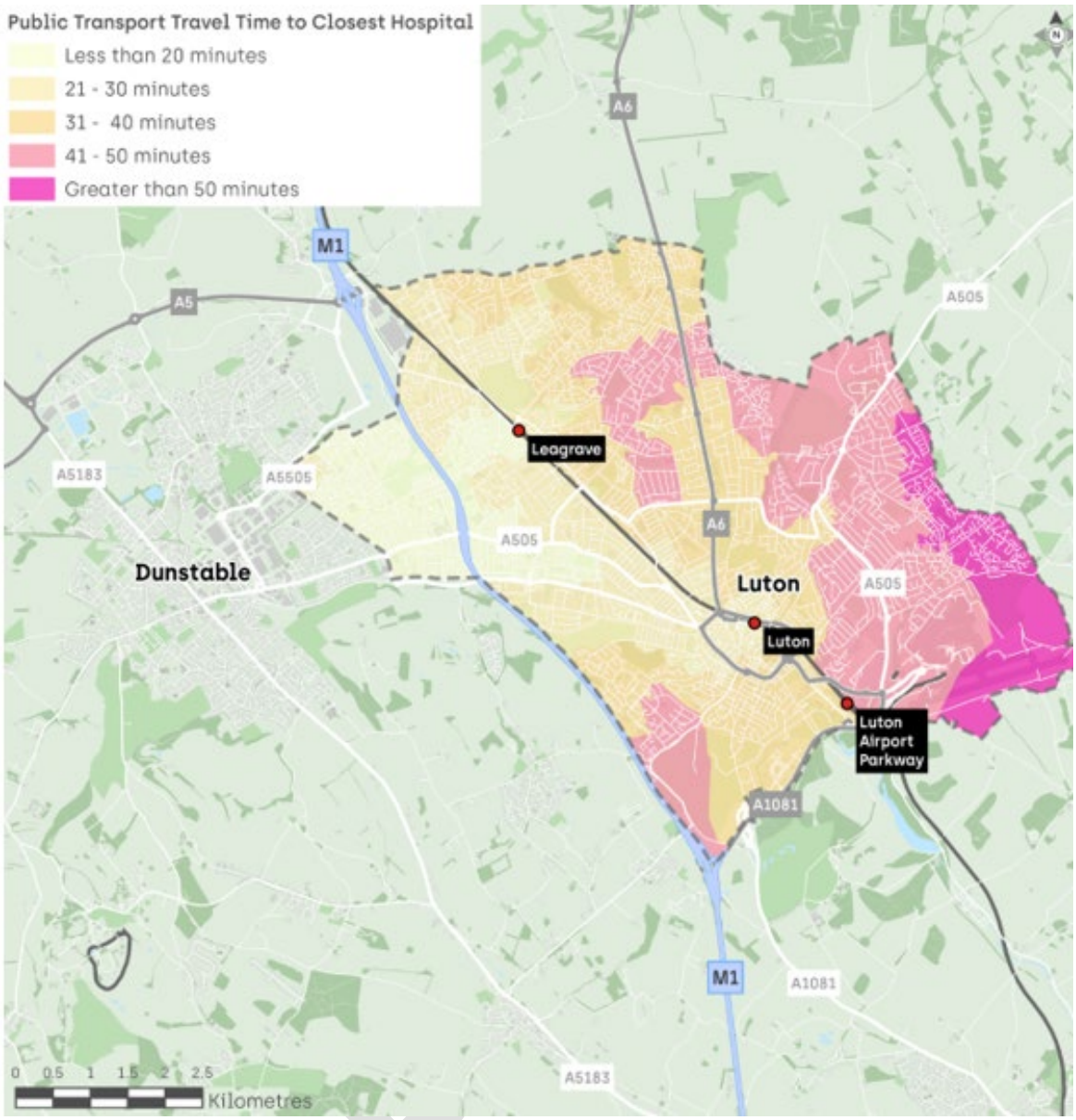
Indicator	Luton	England	East of England
Personal Independence Payment (PIP) (Apr-2025)	8.5%	9.6%	8.4%
Disability Benefit (DLA) (Nov-2024)	2.2%	2.1%	2.0%
Attendance Allowance (Nov-2024)	15.3%	13.5%	13.2%
Households on Universal Credit (Disabled Child Entitlement) (Nov-2024)	2.1%	1.8%	1.7%
Households on Universal Credit (Limited Capability for Work Entitlement) (Nov-2024)	7.5%	6.1%	5.1%

Source: Luton Borough Council Local Insight, based on Department for Work and Pensions data, 2025

Access to health

Figure 10 shows that access to hospitals in Luton by public transport takes far longer east and north of the town centre; typically, 41-50 minutes. This includes a pocket of low accessibility west of the A6 near Leagrave/Lewsey, where Luton and Dunstable University Hospital is located, indicating possible under provision of public transport in this area.

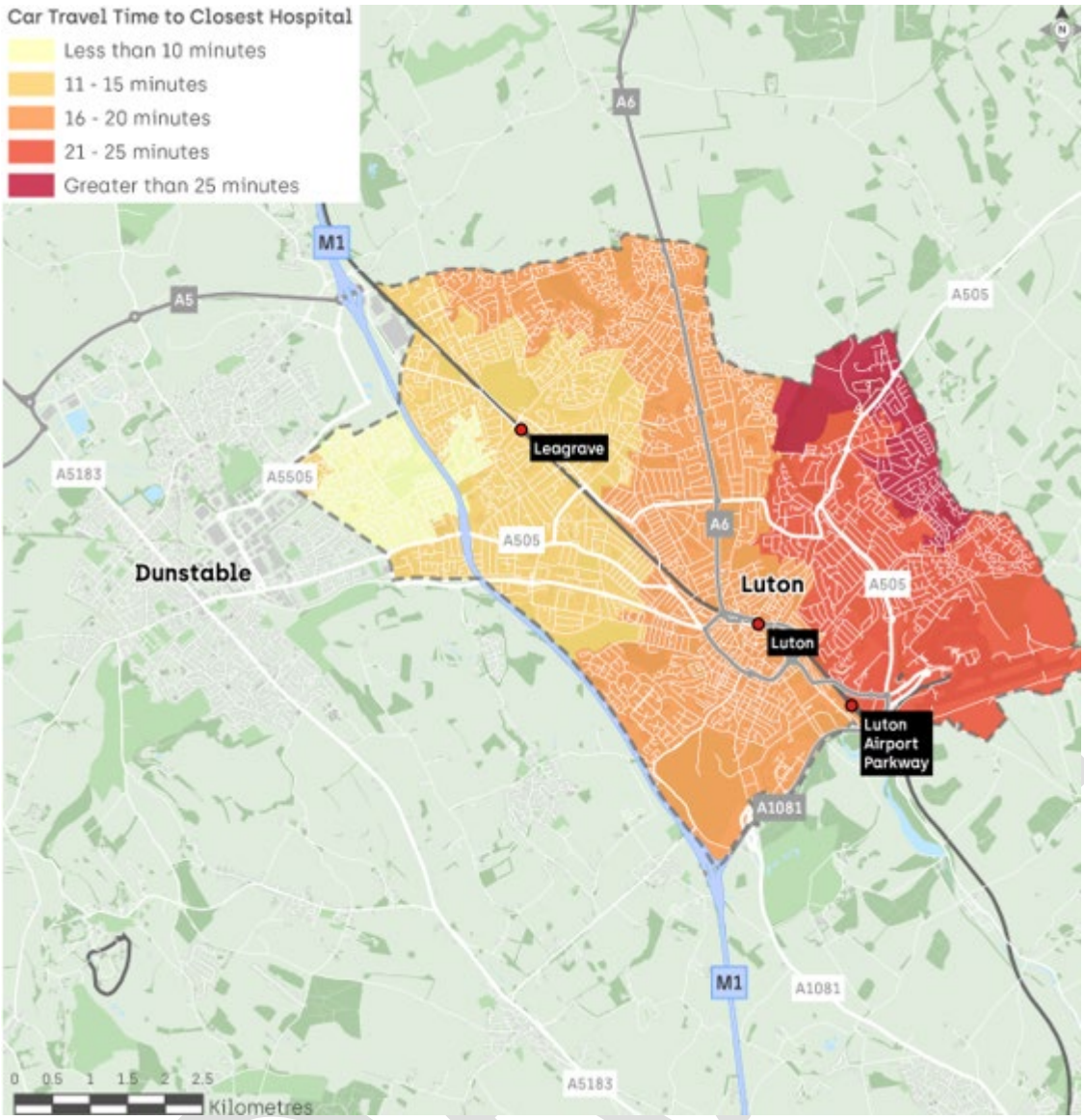
Figure 10: Access to hospitals in Luton by public transport, 2021



Source: DfT journey time statistics, 2021

Figure 11 shows a similar general pattern for access to hospitals in Luton by car. Journey times are however generally much lower, around 21-25 minutes in the farthest areas which is around half the time taken by public transport from the same locations. This shows the attractiveness of car travel in Luton relative to public transport.

Figure 11: Access to hospitals in Luton by car



Source: DfT journey time statistics, 2021

In terms of access to GPs, which are more numerous and dispersed than hospitals, the average travel time by walking and public transport in Luton was 10 minutes in 2019, lower than both the national average (13 minutes) and the East of England average (15 minutes)[13].

Deprivation

The Index of Multiple Deprivation (IMD) is a measure of relative deprivation for small areas (Lower Super Output Areas (LSOAs)) and combines several factors including employment, education, crime, income, barriers to housing and services, living environment and health. These factors are combined and weighted to give an overall score and ranking for each LSOA in England. These rankings demonstrate relative deprivation, as opposed to level of affluence.

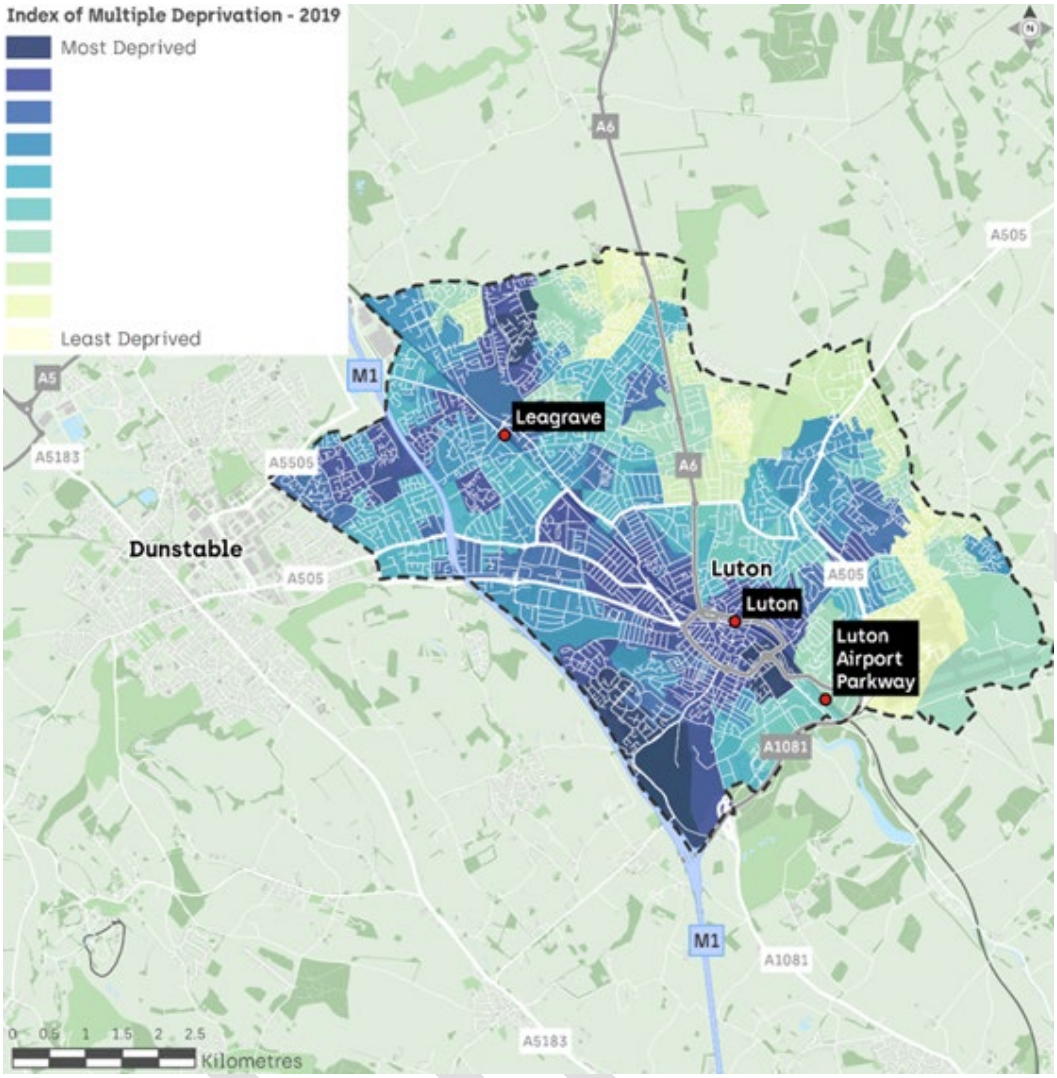
Deprivation across England is dispersed, within 61% of local authority districts containing at least one of the country's most deprived neighbourhoods[14]. Luton experiences the second highest levels of deprivation of all the counties in the England's Economic Heartland (EEH) region. Out of 317 local authorities, Luton ranks at 70 for LSOAs in England in terms of combined deprivation.

[13] Luton Borough Council Local Insight, based on DfT data, 2019

[14] The English Indices of Deprivation 2019 (Ministry of Housing, Communities and Local Government, 2019)

Distribution of deprivation is mapped in Figure 12. The most deprived neighbourhoods in Luton are concentrated in its central, southern and western parts, in particular the town centre, Bury Park, Farley Hill, Lewsey, and Marsh Farm, all of which are in the top 20% (and top 10%) most deprived areas in England.

Figure 12: Deprivation across Luton in 2019



Source: English Indices of Deprivation 2019, Ministry of Housing, Communities & Local Government

Health determinant 3: Economic health

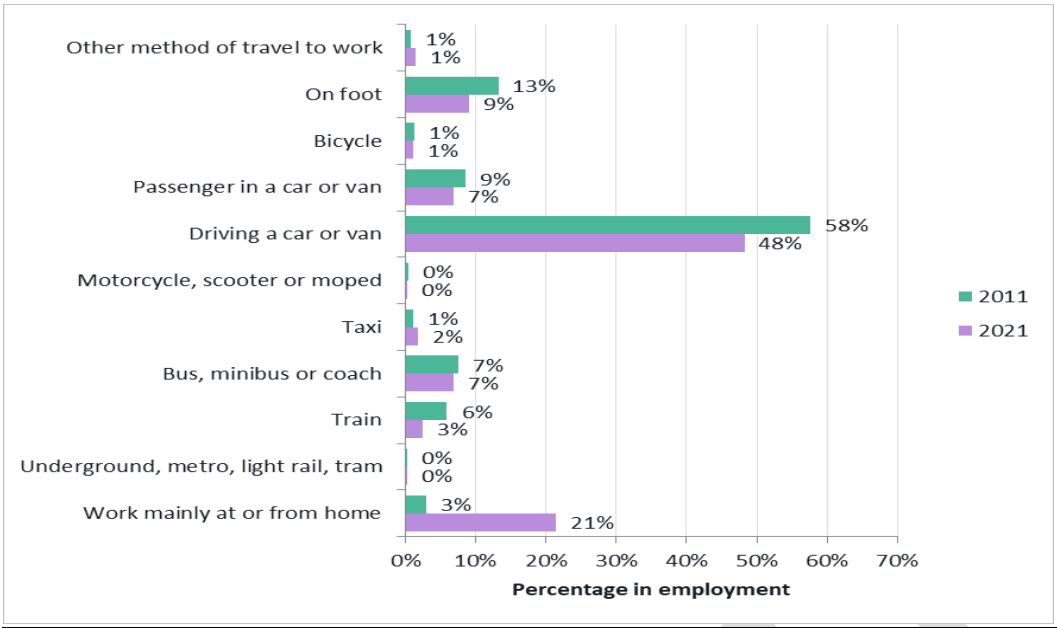
Employment and Workforce Breakdown

As evident in Figure 13, of the approximately 109,600 people in employment in Luton[15], the majority either drive a car or van to work (58% in 2011 and 55% in 2021) or mainly work at or from home (3% in 2011 and 21% in 2021), travel to work on foot or cycle in both 2011 (13%) and 2021 (10%). Data is taken from the two most recent Census; it should be emphasised that Census 2021 data was heavily influenced by the then-ongoing Covid-19 pandemic and associated travel limitations.

Travel to work data highlights there is scope to improve the level of physical activity in Luton. Bicycle trips have a particularly low mode share of 1% in both Census years. Improvements to the public transport network, whether this be expanding connectivity, increasing service frequencies or related to fares and ticketing, may encourage workers who currently drive to work in a car or van to use a public transport alternative.

[15] Business Register and Employment Survey (BRES), 2022

Figure 13: Method of travel to work for in Luton in 2011 and 2021



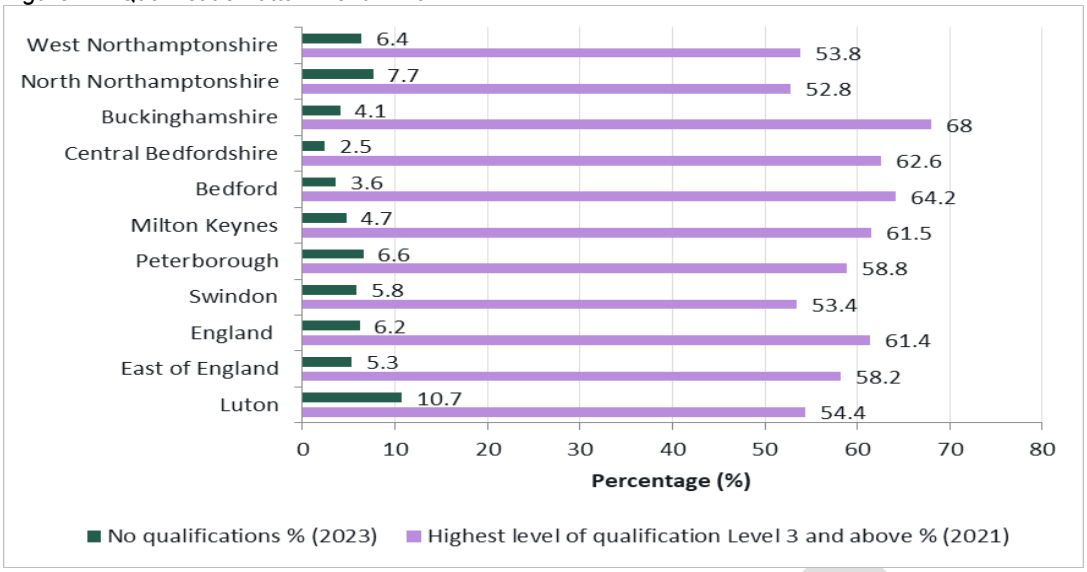
Driving a car or van	Work from home	On foot	Passenger in a car	Bus or coach	Train	Cycle	Other	Taxi	Motorcycle or moped
2011									
51,435	2,657	11,840	7,615	6,682	5,295	1,175	715	1,056	438
58%	3%	13%	9%	7%	6%	1%	1%	1%	0%
2021									
47,640	21,202	8,957	6,716	6,715	2,506	1,108	1,463	1,818	265
48%	21%	9%	7%	7%	3%	1%	1%	2%	0%

Source: Census 2011, Census 2021

Education

Transport plays a significant role in accessing educational institutions, facilities and opportunities. A well-educated, skilled workforce encourages growth of a local economy. Restrictions in accessing education can directly affect economic prosperity but also indirectly impact health outcomes. Figure 14 shows that Luton has the highest proportion of individuals aged 16-64 with no qualifications in the EEH area (10.7%). Luton also has one of the lowest levels of people with highest level of qualification Level 3 and above (54.4%), though West Northamptonshire, North Northamptonshire and Swindon are all slightly lower. The England average is a marked improvement on Luton in both instances, at 6.2% with no qualifications and 61.4% with highest level of qualification Level 3 and above.

Figure 14: Qualification attainment in 2021



Area	No qualifications (2023)	Highest level of qualification Level 3 and above (2021)
Luton	10.7%	54.4%
East of England	5.3%	58.2%
England	6.2%	61.4%
Swindon	5.8%	53.4%
Peterborough	6.6%	58.8%
Milton Keynes	4.7%	61.5%
Bedford	3.6%	64.2%
Central Bedfordshire	2.5%	62.6%
Buckinghamshire	4.1%	68%
North Northamptonshire	7.7%	52.8%
West Northamptonshire	6.4%	53.8%

Source: Office for National Statistics

There is evidence that this disparity emerges at the earliest stages of education, as Luton significantly underperforms the East of England average in communication, learning, literacy, and maths skills by the age of 5. This underperformance, with a magnitude of 5–7% across these key skills, is shown in Figure 15.

This is indicative of issues in early development, which may be health related.

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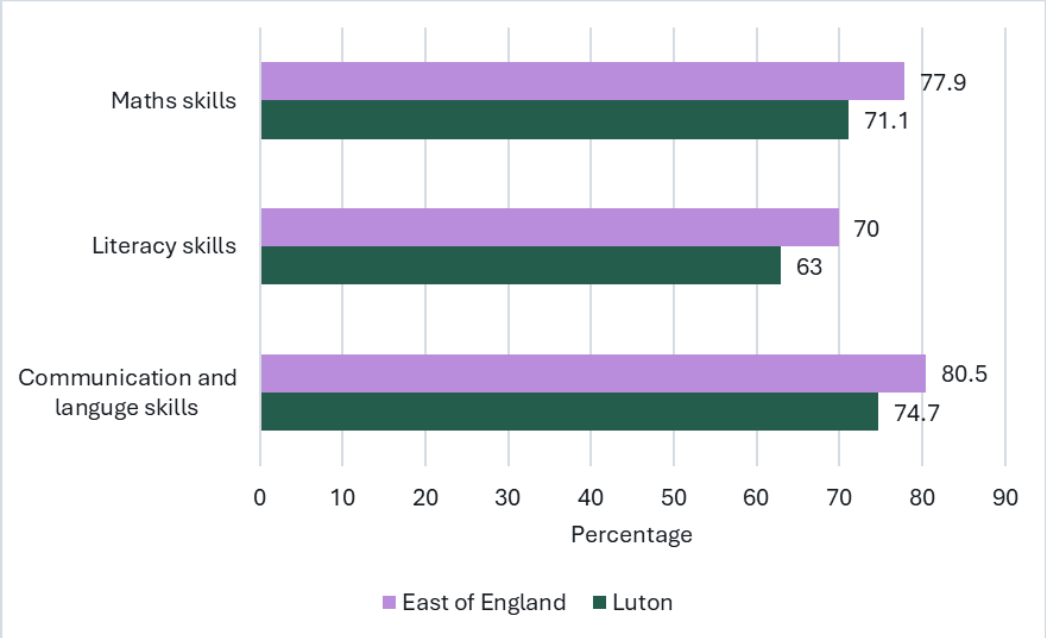
Figure 15:'Expected level' of key skills by end of early years foundation stage (5 year olds)



Area	Maths skills	Literacy skills	Communication and language skills
Luton	71.1%	63%	74.7%
East of England	77.9%	70%	80.5%

Source: Office for National Statistics Local indicators, 2022-23

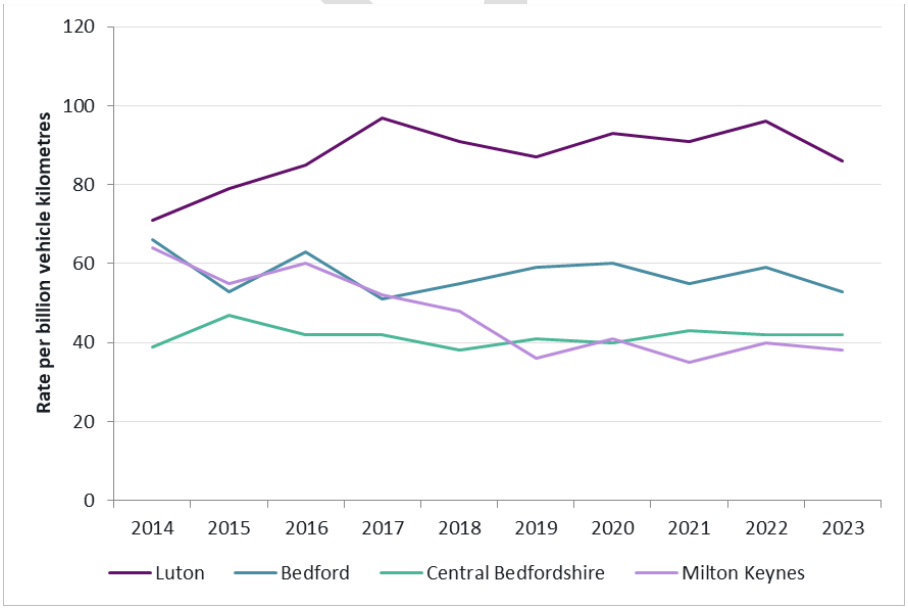
Health determinant 4: Safety

Road collisions and safety

Road traffic collisions typically involve vehicles and other road users, often resulting in injury. In the context of health, collisions are an immediate risk to the safety of individuals.

Figure 16 shows that Luton has a relatively higher rate of killed or seriously injured (KSI) road casualties than neighbouring local authorities, at around 90 KSI casualties per billion motor vehicle kilometres per year over the past decade. Bedford, Central Bedfordshire, and Milton Keynes all averaged in the 40-60 range over the same period. These rates remained steady throughout the Covid-19 pandemic, suggesting they may have structural and/or specific causes rather than being determined by general volumes of traffic.

Figure 16: Rate of killed or seriously injured (KSI) road casualties per billion motor vehicle kilometres, 2014 to 2023



Area	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Luton	71	79	85	97	91	87	93	91	96	86
Bedford	66	53	63	51	55	59	60	55	59	53
Central Bedfordshire	39	47	42	42	38	41	40	43	42	42
Milton Keynes	64	55	60	52	48	36	41	35	40	38

Source: Department for Transport (DfT) RAS0403

Figure 17 shows how road collisions involving casualties of all severities are distributed across Luton. This highlights particular road safety hotspots along the A505 in Luton town centre as well as the approach to the M1 junction in the west.

Implementation of measures such as reduced speed limits where appropriate, provision of new and improved pedestrian crossing points, and restrictions to through motor traffic is important to improving road safety. Providing high quality walking and cycling networks, protected from motor traffic, will also create safe and convenient options for people to move around Luton by active travel.

Figure 17: Map of road collisions in Luton by severity

Source: DfT STATS19

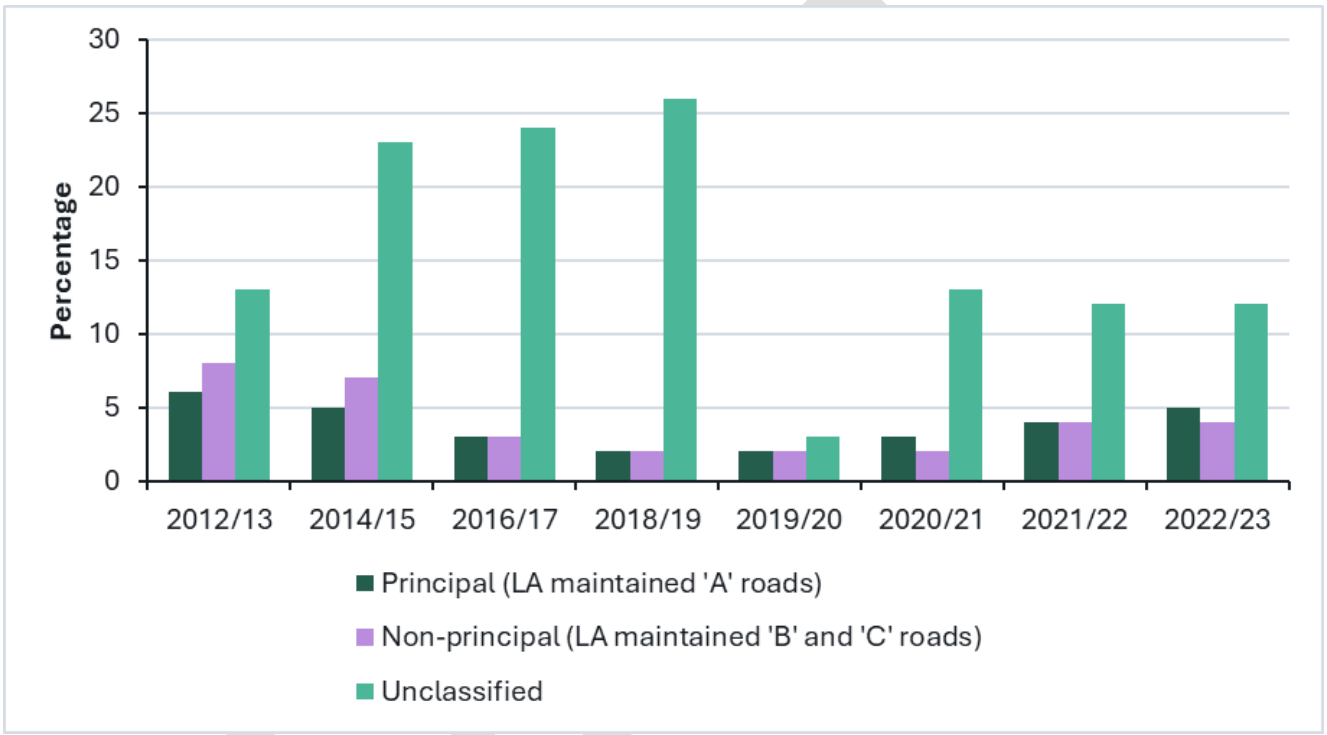
Road condition

The quality of road surfaces can influence the extent to which accidents occur, but also the extent to which individuals choose to engage in physical activity[16]. Road maintenance of the Strategic Road Network (SRN) in Luton is managed by National Highways[17].

Figure 18 shows the percentage of roads where maintenance should be considered has decreased, suggesting that road maintenance programmes are working, albeit at intervals rather than with consistent intensity. However, variation by road type indicates that more work should be conducted to improve the condition of local roads, as unclassified roads are the least maintained as of 2022-23.

As described in Figure 8, 34% of Luton's population are inactive, indicating scope for improvement in the quality and condition of the public realm and urban environment, such as cycle paths, to encourage an increase in levels of physical activity.

Figure 18: Percentage of Roads where maintenance should be considered



Road type	2012/13	2014/15	2016/17	2018/19	2019/20	2020/21	2021/22	2022/23
Principal	6%	5%	3%	2%	2%	3%	4%	5%
Non-principal	8%	7%	3%	2%	2%	2%	4%	4%
Unclassified	13%	23%	24%	26%	3%	13%	12%	12%

Source: Department for Transport

[16] Transport and Health Resource (Department for Transport and Department for Health, 2011)

[17] National Highways

Health determinant 5: Crime

Crime rate

Luton's total crime rate has decreased from 121.2 per 1,000 people between September 2018 and August 2019 to 101.0 per 1,000 people between March 2024 and February 2025. It is now roughly in line with the East of England and England total crime rate averages as shown in Figure 19.

Figure 19: Total crime rate per 1,000 people (12-month totals)

Date	Luton	England	East of England
Sep-2018 to Aug-2019	121.2	107.8	97.9
Dec-2018 to Nov-2019	118.4	105.5	96.8
Mar-2019 to Feb-2020	116.3	103.8	96
Jun-2019 to May-2020	112.1	101.8	93.6
Sep-2019 to Aug-2020	109.7	101.4	94.4
Dec-2019 to Nov-2020	108.1	101.7	94.9
Mar-2020 to Feb-2021	95.3	92.1	84.9
Jun-2020 to May-2021	95.1	91	85.9
Sep-2020 to Aug-2021	88.5	96.1	88.3
Dec-2020 to Nov-2021	88.3	94	87.6
Mar-2021 to Feb-2022	87.1	92.7	87.3
Jun-2021 to May-2022	87.1	93.5	87.2
Sep-2021 to Aug-2022	102.8	95.8	91
Dec-2021 to Nov-2022	102.1	97.6	90.4
Mar-2022 to Feb-2023	100.2	97.9	88.9
Jun-2022 to May-2023	119.4	119.2	106.9
Sep-2022 to Aug-2023	115.9	130.5	112.3
Dec-2022 to Nov-2023	120.7	131.5	113.5
Mar-2023 to Feb-2024	136.5	138.5	122.3
Jun-2023 to May-2024	126.6	118.4	106.5
Sep-2023 to Aug-2024	110.7	97.4	89
Dec-2023 to Nov-2024	101.5	90.6	81.2
Mar-2024 to Feb-2025	101	91.1	80.7

Source: Luton Borough Council Local Insight

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As presented in Table 3, the crime rate is slightly higher in Luton than the national and regional averages for certain key offences, which may be a contributing factor in threatening individual perception of safety. Vehicle crime offences are much higher in Luton (9.1 per 1,000 people) compared to the national average of 5.2 and the East of England average of 4.9. Anti-social behaviour offences are also higher in Luton (15.2 per 1,000 people) compared to the national average of 14.3 and the East of England average of 11.5.

Table 3: Crime rate per 1,000 people by key offences, Mar-2024 to Feb-2025

Indicator	Luton	England	East of England
Anti-Social Behaviour	15.2	14.3	11.5
Bicycle Theft	0.7	0.9	0.9
Burglary	8.7	9	7.2
Criminal Damage	6.7	6.6	6.4
Drug Crime	3.8	2.8	2.2
Possession of Weapons	1.4	0.8	0.8
Public Order	7.3	6.4	5.4
Robbery	1.2	1.1	0.7
Shoplifting	8.7	7.6	7
Theft From Person	1.4	2.1	0.7
Vehicle Crime	9.1	5.2	4.9
Violent Crime & Sexual Offences	33.5	31.2	29.5

Source: Luton Borough Council Local Insight

This could be improved through measures such as improved street lighting and wayfinding to provide people with busier and more attractive routes through urban areas.

Health determinant 6: Congestion and stress

Since 2011, the population of Luton has grown. With this anticipated growth comes an increased demand for transport.

Mental health

Personal Independence Payment (PIP) claimants citing mental health conditions make up 2.86% of residents in Luton, which is lower than the proportion in England (3.62%) and similar to the East of England (3.15%)[18]. The Small Area Mental Health Index (SAMHI), which is a composite annual measure of population mental health combining data from multiple sources, indicates a lower score of -0.08 for Luton than for England (0.67) or the East of England (0.44) where are higher score represents higher levels of need, though this is a more experimental measure[19].

It is estimated there were approximately 25,582 people in Luton with a common mental health disorder (CMD) as of 2020, rising to 27,000 by 2035. This is 19% of the population, making Luton higher than the national average (17%)[20]. However, it is important to emphasise that diagnoses show up differently in primary care and national data and that CMD are still likely to be underreported.

[18] Luton Borough Council Local Insight, based on Department for Work and Pensions (DWP) data, Jan-2025

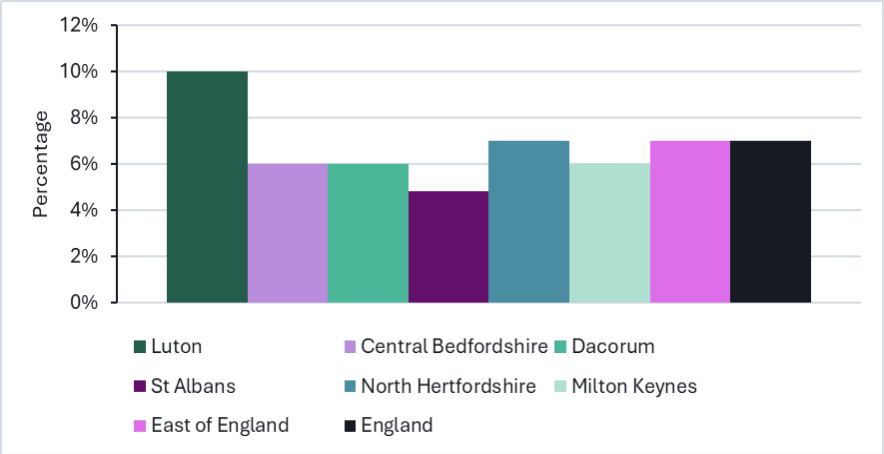
[19] Luton Borough Council Local Insight, based on data aggregated by the Place-Based Longitudinal Data Resource (PLDR), 2022

[20] Luton's collaborative all age mental health strategy, December 202

Additionally, the percentage of adults who feel lonely often or always is higher in Luton at 10% compared to the England average (7%), as evident in Figure 20.

There is an opportunity for transport to mitigate detrimental effects on mental health. High levels of congestion and/or severance may induce stress, leading to increased isolation and vulnerability for certain groups. By improving connectivity, reducing journey times and reducing harmful transport emissions, the stress of travel is also minimised which improves quality of life. Provision of affordable transport, such as introducing concessionary travel passes, may reduce the social exclusion experienced by older people and those who face mobility difficulties. Moreover, a lack of affordable and inclusive travel options may exacerbate generational divides in social connectivity, as transport facilitates social interaction and networking among all age groups[21].

Figure 20: Proportion of adults who report feeling lonely often or always



Area	Proportion of adults who report feeling lonely often or always
Luton	10%
Central Bedfordshire	6%
Dacorum	6%
St Albans	5%
North Hertfordshire	7%
Milton Keynes	6%
East of England	7%
England	7%

Source: Office for National Statistics Community Life Survey 2023/24

Health determinant 7: Air quality

Air quality and health

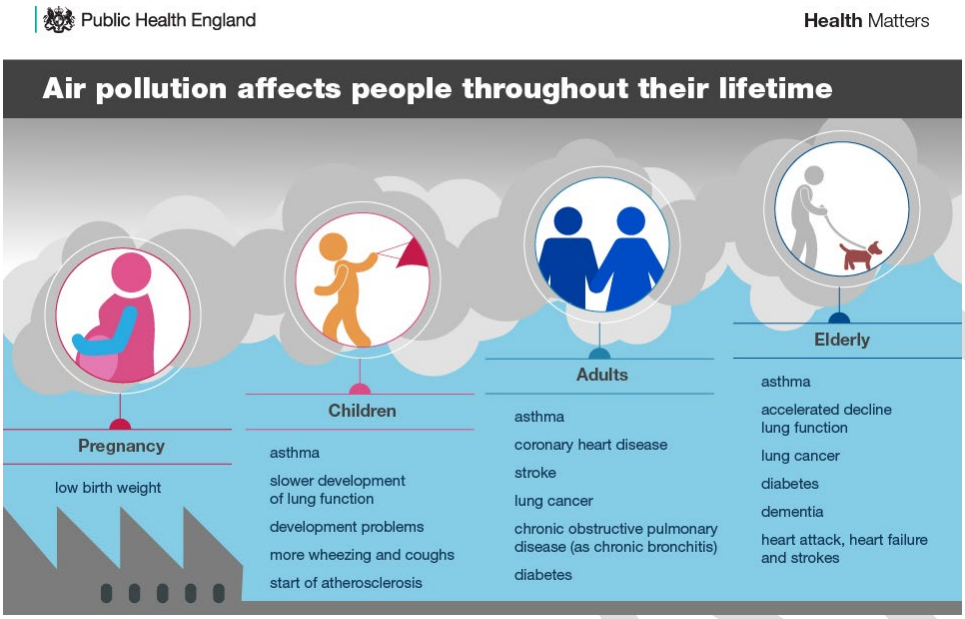
The movements of most forms of highway-based transport have resultant impacts on air quality, and is based on several factors, including the fuel type, weight and age/condition of the vehicle. A large range of pollutants result from highways-based transport and are produced through both the combustion/burning of fuels, but also the general wear and tear to the vehicle, such as from tyres and braking systems. Pollutants enter the respiratory system and cause widespread health impacts across the majority of the body's major functions.

[21] Transport and inequality: An evidence review for the Department for Transport (NatCen Social Research, 2019)

It is worth noting that Luton Airport also has a significant impact on air quality levels through contributing to road traffic and through aviation operations, and that these impacts should be considered as part of Luton's approach to managing air quality through transport.

The impact of poor air quality disproportionately impacts individuals both as they age, from children to older people, and also those with underlying health conditions, or if they are pregnant, with Figure 21 illustrating how these impacts are felt.

Figure 21: Impact of air pollution on people throughout their lifetimes[22]



- Pregnancy
  - Low birth weight
- Children
  - Asthma
  - Slower development of lung function
  - Development problems
  - More wheezing and coughs
  - Start of atherosclerosis
- Adults
  - Asthma
  - Coronary heart disease
  - Stroke
  - Lung cancer
  - Chronic obstructive pulmonary disease (as chronic bronchitis)
  - Diabetes
- Older adults
  - Asthma
  - Accelerated decline of lung function
  - Lung cancer
  - Diabetes
  - Dementia
  - Heart attack, heart failure and strokes

[22] Health Matters: air pollution (Public Health England)

There is a growing body of evidence that links maternal exposure to air pollution and adverse pregnancy outcomes. Air pollution particles have been shown to reach the foetal side of the placenta[23] and there is consistent evidence that exposure to air pollution such as particulate matter and ozone (O3) during pregnancy increases the risk of low birth weight and preterm birth.[24]

Generally, air quality in Luton is good, however there are town centre and Strategic Road Network (SRN) locations where there are acute issues. In turn, this may adversely impact individuals who are sensitive to poor air quality.

Air Quality Management Areas (AQMAs) are areas where local air quality is unlikely to meet national air quality standards. Consequently, the council must monitor local air quality to understand the actions that can be taken to improve its condition. Luton has 3 AQMAs; either side of Junction 11 in the vicinity of the M1, another slightly further north either side of the M1, and one in the town centre encompassing the A505 from Dunstable Road through to Stuart Street and Chapel Viaduct. All 3 are for nitrogen dioxide pollutants. The town centre AQMA was declared in 2016, whereas the M1 AQMAs were both declared around 20 years ago[25].

The LTP has a role in reducing health inequalities which may disproportionately impact vulnerable communities, such as those in the most deprived 10 % neighbourhoods in the country, pregnant women, or those with pre-existing health conditions. Improving public transport links to health care facilities, employment centres and education facilities across the county so that people can attend medical appointments, workplaces, and education without being reliant on access to a car. This will likely have a positive impact on air quality, with fewer cars on the roads. For further information on how the LTP addresses equality, please refer to the EqIA and wider IIA.

Carbon emissions

Approximately 51% of carbon emissions from road transport in Luton come from goods vehicles. 45% come from private car, with the remaining coming from passenger service vehicles (i.e. buses and coaches) as shown in Figure 22.

Carbon footprint per person in Luton is 7,605kg of carbon dioxide equivalent per year, slightly lower than the national average (8,133kg) and substantially lower than the East of England average (8,736kg). This is based on an aggregate of energy, transport and goods and services consumption[26]. However, the UK has set a legally binding target to reduce carbon emissions to or near zero by 2050.

Appropriate transport decarbonisation measures should therefore be in place to counter the worsening effects of climate change in line with the Government's Decarbonising Transport - A Better, Greener Britain strategy[27].

[23] Ambient black carbon particles reach the fetal side of human placenta. (Nat Commun, 2019)

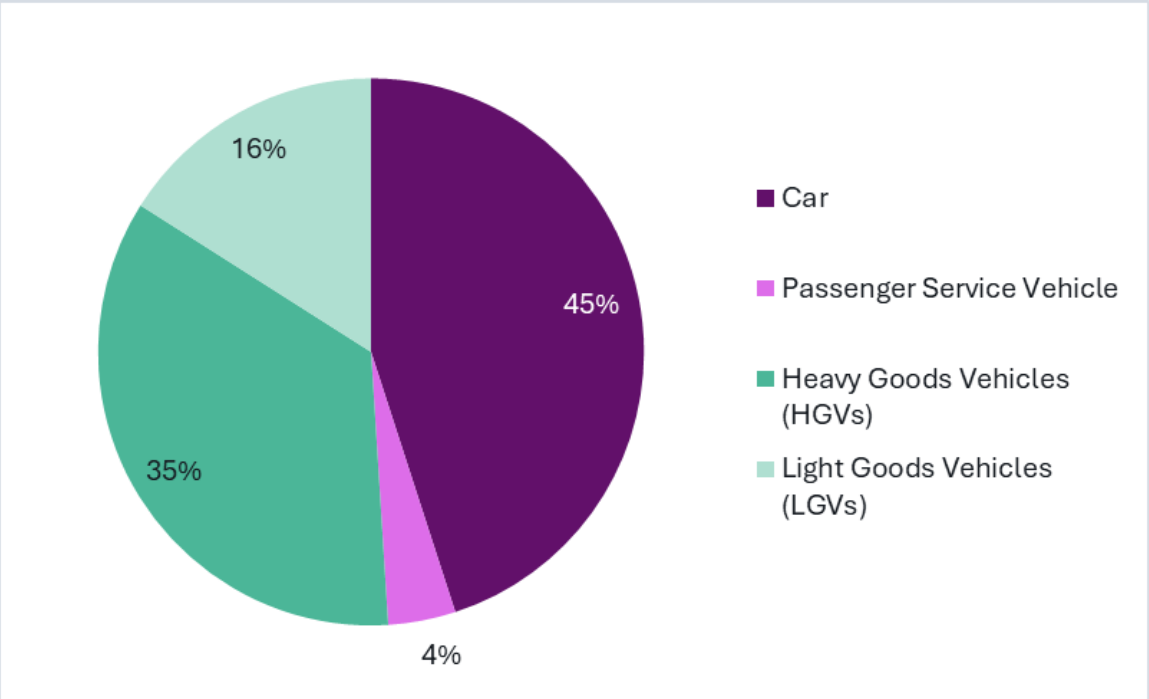
[24] Association of Air Pollution and Heat Exposure with Preterm Birth, Low Birth Weight, and Stillbirth in the US: A Systematic Review (JAMA Netw Open, 2020) and Effects of air pollution on all cause neonatal and post-neonatal mortality: population-based study (Sci Total Environ, 2021)

[25] List of Local Authorities with AQMAs

[26] Luton Borough Council Local Insight, based on data aggregated by the Place-based Carbon

[27] Decarbonising Transport – A Better, Greener Britain (Department for Transport, 2021)

Figure 22: Proportion of carbon emissions in Luton by vehicle type



Vehicle	Proportion
Car	45%
Passenger Service Vehicle	4%
Heavy Good Vehicle (HGVs)	35%
Light Goods Vehicle (LGVs)	16%

Source: Figure 8 in Carbon Assessment Playbook - Decarbonisation Baseline Report for Luton

Open spaces

There are areas of green and blue spaces within Luton despite its urban profile, with key sites including Wardown Park, Stockwood Park and Lothair Recreation Ground. A key theme of Luton's Sport and Physical Activity Strategic Delivery Plan is to improve access to green spaces and safe walking and cycling routes, as part its goal in 'Creating active environments.[28] However, only 19.41% of households in Luton are in walking distance of their nearest green space, lower than both the national average (23.04%) and the East of England average (21.52%)[29].

There is scope for improved transport provision, extending cross-borough to key designated areas in order to maximise use of these spaces. Further, promoting open spaces will benefit disadvantaged community groups who are likely to suffer from seclusion or poor air quality by encouraging active travel as a means to enhance both physical and mental health.

Health determinant 8: Noise

Exposure to noise can cause disturbance and annoyance to individuals in proximity. While auditory impacts are the most common drawback of extreme noise levels, children and older age groups especially may be vulnerable to cognitive dysfunction and/or serious mental health implications.

[28] Luton Borough Council Sport and Physical Activity Strategic Delivery Plan for Luton, 2024

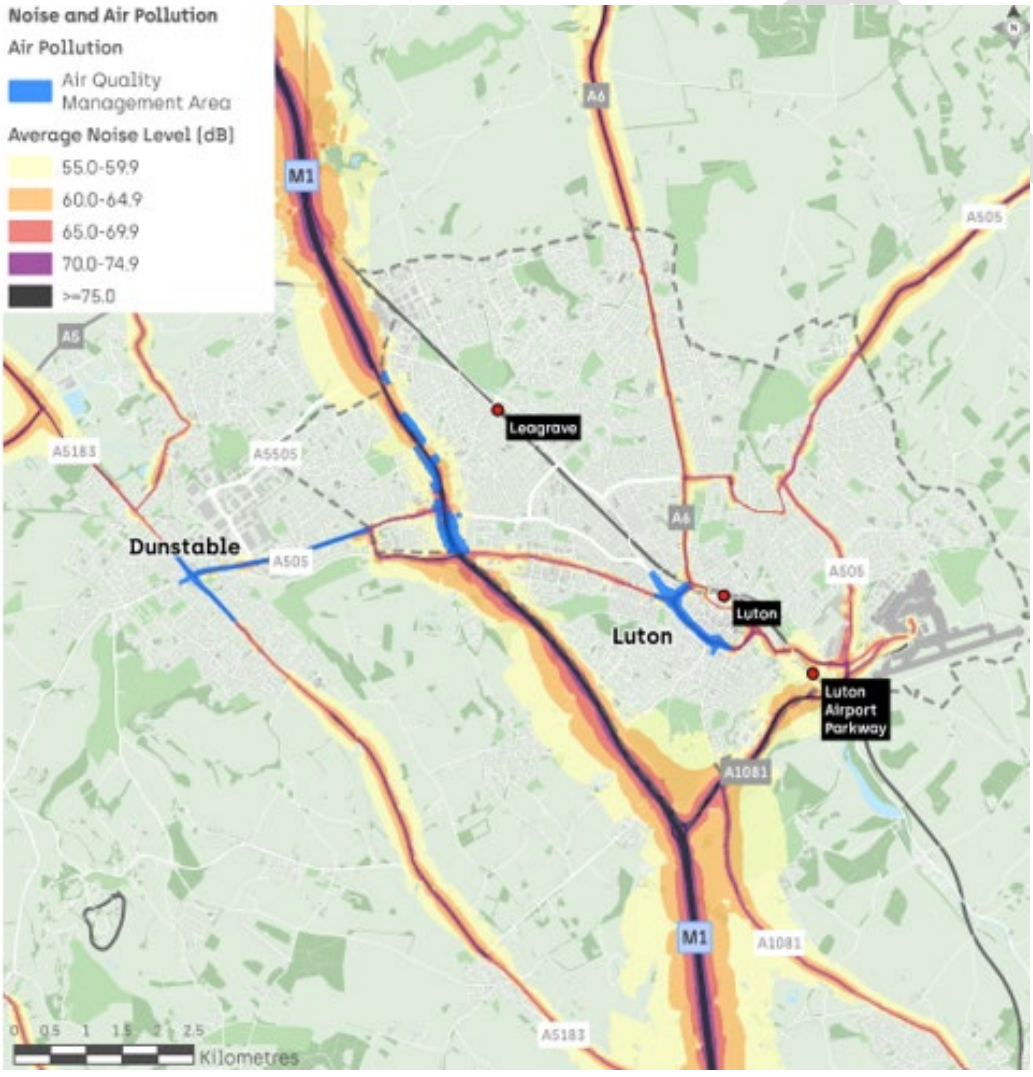
[29] Luton Borough Council Local Insight, based on Department for Environment, Food and Rural Affairs (Defra) data, 2024

Noise pollution

In some areas in Luton, noise pollution is an issue around major highway. Figure 23 shows where the highest 24-hour annual average noise levels occur in Luton. There is a particular need to consider the noise from vehicles driving along the M1 in the west of the town. Although much of the affected areas are sparsely populated, there are pockets of population density and key services (including Luton and Dunstable University Hospital and several schools in Leagrave) within range of elevated noise levels emanating from the M1.

The long-term impacts of noise can be more widespread and extensive than causing hearing loss. The Government's Transport and Health Resource outlines emotional functionality, stress, communication, and sleep disturbance as indirectly affected by health. Transport construction, operation and systems in Luton must consider the negative implications of poor noise management, as it is estimated that the annual social cost of urban road noise in England is £7 to £10 billion.[30]

Figure 23: 24-hour annual average noise levels



Source: England Noise and Air Quality Viewer, Department for Environment, Food & Rural Affairs

[30] Noise pollution: economic analysis (Department for Environment, Food & Rural Affairs, 2013)

Impact Assessment

The analysis of health impacts has focussed on the health determinants likely to be influenced by mobility and transport and as a result, the LTP. The eight pathways mentioned in Scoping and Methodology include:

- Health determinant 1: Lifestyle
- Health determinant 2: Access, accessibility, and community severance
- Health determinant 3: Economic health
- Health determinant 4: Safety
- Health determinant 5: Crime
- Health determinant 6: Congestion and stress
- Health determinant 7: Air quality
- Health determinant 8: Noise

These have consequentially been applied to the LTP's objectives (and related outcomes) which include the following:

- Objective 1: Create safer, active and healthier places that are liveable and improve quality of life for everyone
- Objective 2: Tackle inequalities through accessible, affordable, and reliable transport choices that connect people with the key services and opportunities they need sustainably
- Objective 3: Increase sustainable transport choices for all and reduce car dependency
- Objective 4: Enable inclusive growth through enhanced sustainable connectivity and access to economic opportunities
- Objective 5: Drive rapid decarbonisation in the movement of people and goods in line with local and central government targets, embracing innovation and technology
- Objective 6: Embrace diversity across Luton through meaningful collaboration on transport plans, policies, and schemes
- Objective 7: Support the financial viability of services through continued partnership working with other public sector bodies and the private sector, including neighbouring authorities, operators and employers

Objectives 6 and 7 are focused on ways of working, and have therefore not been assessed in this impact assessment.

The LTP's policies have also been assessed individually and are grouped based on the chapters they relate to in the LTP.

This assessment has also been considerate of the interaction between the LTP's Objectives and Luton's Population Wellbeing Strategy 2023-2028 (Wellbeing Strategy).[31] The strategy outlines 3 key priorities of the 2040 vision which interact directly with health and wellbeing strategy and a series of target outcomes related to these priority areas. These priorities are:

- Priority 1: Improving population wellbeing and tackling health inequalities to enable everyone to have a good quality of life and reach their full potential
- Priority 2: Becoming a child friendly town, where our children grow up happy, healthy and secure, with a voice that matters and the opportunities they need to thrive
- Priority 3: Supporting a strong and empowered community, built on fairness, local pride and a powerful voice for all our residents

[31] Luton's Population Wellbeing Strategy: 2023 -28

The symbols presented in Table 4 have been utilised to present the likely direct impact on each health determinant. This assessment is presented overleaf in **Error! Reference source not found.** and

Table 4: Health effect symbols

Symbol	Health effect
++	Significant beneficial
+	Slight beneficial
0	No effect
-	Slight Negative
--	Significant negative
?	Uncertain effect
+-/++--	Mixed effects

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LTP objectives

Table 5: Assessment of the health effects resulting from the objectives of Luton's LTP

LTP Strategic Objective and Outcomes	Lifestyle	Access, accessibility & community severance	Economic health	Safety	Crime	Congestion and stress	Air quality	Noise	Rationale	Mitigation measures/ recommendations
Objective 1: Create safer, active and healthier places that are liveable and improve quality of life for everyone Reduced numbers of casualties and people killed or seriously injured Increased levels of physical activity Increased access to green and blue spaces Improved air quality Reduced levels of noise pollution	++	+	+	+	0	+	++	+	By improving safety and accessibility of all transport journeys, this will improve confidence levels of Luton's residents, workers and visitors. Reducing the levels of killed or seriously injured in Luton will improve safety and increase confidence, particularly for active modes. The current clusters of serious or fatal incidents in Luton are located on the A505 Dunstable Road in Challney and the A505 Stuart Road in Central Luton. Increased level of physical activity can have significant health impacts and will reduce inactivity levels in Luton, which are higher than in comparative areas (34% active for less than 30 minutes per week). This can have a significant impact on younger people and children and help tackle levels of those who are overweight or obese. Improving accessibility to green and blue space is likely to have benefits to physical and mental health and well-being. This is particularly true for areas without access to green spaces now, in more densely populated and urban areas of Luton, which are more likely to have higher levels of deprivation. Improving levels of localised air quality can have significant health benefits for those most vulnerable to respiratory impacts (younger and older people). So too will reduced noise and air pollution improve the attractiveness of the urban realm and encourage more people to lead active and healthy lifestyles.	Objective 1 aligns well with Luton's Wellbeing Strategy, improving safety outcomes for children and young people, with fewer road safety incidents for a series of vulnerable groups. This supports Priority 1 of the strategy, 'improving population wellbeing and tackling health inequalities to enable everyone to have a good quality of life and reach their full potential'. It also can align well with Priority 2, of becoming a child friendly town. To maximise the potential positive impacts on children's health, focus on encouraging healthy and active lifestyles through active travel should be maximised (as outlined in Policy 4: Education, training and promotion). By promoting active travel habits in children health benefits can be realised and established for the future, to increase resilience within the population for the long term.

LTP Strategic Objective and Outcomes	Lifestyle	Access, accessibility & community severance	Economic health	Safety	Crime	Congestion and stress	Air quality	Noise	Rationale	Mitigation measures/ recommendations
Objective 2: Tackle inequalities through accessible, affordable, and reliable transport choices that connect people with the key services and opportunities they need sustainably Increased accessibility of the transport network Increased access to key services by sustainable modes Increased access to employment hubs and opportunities Reduced cost of travel by public transport (and other shared modes)	++	++	+ +	0	0	+	+	+	Improving accessibility to the transport network will include designated links to reach key services, leading to increased opportunities. This can have significant positive economic impacts and help increase the number of people in employment and levels of qualification and income. This can have significant positive impacts on areas of high deprivation in Luton, such as Farley, Northwell, and Central Luton. Reducing the cost of travel by public transport can have a significant positive benefit in accessibility of the network to low income and vulnerable groups, in order for them to be able to access the services and opportunities they need. This can reduce the levels of transport related social exclusion and more broadly, social isolation within vulnerable groups in Luton.	Providing sustainable, affordable transport has a significant opportunity to improve access to key services and opportunities for less advantaged groups. The benefits of this could be maximised through specific and targeted trial schemes that look to reduce or remove cost barriers to travel for vulnerable and low-income groups. Objective 2 aligns well with Luton's Wellbeing Strategy, improving accessibility to the transport network. This supports Priority 1 of the strategy, 'improving population wellbeing and tackling health inequalities' and Priority 3 'supporting a strong and empowered community' through improving equity in access to transport and opportunities.

LTP Strategic Objective and Outcomes	Lifestyle	Access, accessibility & community severance	Economic health	Safety	Crime	Congestion and stress	Air quality	Noise	Rationale	Mitigation measures/ recommendations
Objective 3: Increase sustainable transport choices for all and reduce car dependency Increased trips by sustainable modes Increased mode share for sustainable modes Improved customer experience of sustainable travel	++	++	+	++	+	+	++	+	By increasing the proportion of those walking, wheeling, and cycling this provides excellent opportunities to improve activity levels, particularly reducing the number of those who exercise less than 30-minutes per week. This could have significant positive impacts, particularly on young children in Luton, who in year 6 have a significantly higher prevalence of obesity and overweight than in comparative areas. Increasing the proportion of bus/rail journeys in Luton will also increase opportunities to exercise, as in the majority of cases these journeys will involve a walk to access the bus stop/railway station. Increasing public transport usage has the potential to reduce inactivity levels in Luton, which are higher than in comparative areas (34% active for less than 30 minutes per week). Increasing opportunities for regular exercise will also benefit those with long-term health conditions and other disabilities, who are shown to disproportionately benefit through light exercise. Improved customer experience is likely to lead to increased confidence in using sustainable modes, through improved safety and reduced stress levels. This will support modal shift, particularly in more vulnerable groups and will maximise the benefits of improved infrastructure.	Objective 3 aligns strongly with Luton's Wellbeing Strategy Priority 1: improving population wellbeing and tackling health inequalities. It aligns with Priority 2: becoming a child-friendly town. To maximise the potential positive impacts on children's health, the focus on encouraging healthy and active lifestyles through active travel should be strengthened (Policy 4: Education, Training and Promotion). Increasing public journeys by disadvantaged and vulnerable communities requires improving accessibility of services and affordability. An opportunity to improve health impacts resulting from this outcome would be to introduce cheaper or free public transport tickets to those groups. Additionally, ensuring vulnerable, disadvantaged and older generations are not limited or 'left behind' when integrating the latest technology to support future transport journeys and improve customer experience. An opportunity to assimilate people to the latest technology could involve targeted awareness sessions as well as on-site assistance to prevent digital exclusion.

LTP Strategic Objective and Outcomes	Lifestyle	Access, accessibility & community severance	Economic health	Safety	Crime	Congestion and stress	Air quality	Noise	Rationale	Mitigation measures/ recommendations
Objective 4: Enable inclusive growth through enhanced sustainable connectivity and access to economic opportunities Reduced journey times by sustainable modes Improved journey time reliability Reduced delay from unplanned transport and weather / climate-related events Increased labour market catchment for employers Increase in new homes and commercial development with access to high frequency public transport hubs	++	++	+ +	0	?	+	+	+	Improving journey times by sustainable modes and increased labour market catchment, will include designated links to reach key employment hubs and educational institutions, to reduce the number of people travelling by private car/van and encouraging the shift to more sustainable modes. Increase in new homes with access to high frequency public transport will likely increase the number of employment opportunities available, as well raise income levels. The built environment will be impacted by planned housing schemes, however transport linking new developments is likely to be more technologically advanced, resilient, and deliberate in establishing connections to key focal points. In turn, this can contribute towards a more skilled workforce with a greater proportion of individuals able to access and afford education and training, thus closing the gap between those in who have qualifications and those who don't (10.7% of those in Luton). This will benefit areas with the highest levels of deprivation in Luton. Improving journey time reliability will result in improved punctuality of employees and consistent deliveries, increasing productivity within businesses. Building a transport network which is adaptable ensures that the built environment has capacity to handle any adverse change without lasting impacts. Recovering from emergency and events quickly, will likely support the efficiency of the transport network, enable rapid interchange and reduce negative impacts of congestion resulting from delays, consequently improving the quality of the environment.	Improving access to opportunities, including the labour market, not only requires improving the physical accessibility, but also the financial accessibility. An opportunity to further improve likely health impacts resulting from this outcome would be to introduce cheaper/free public transport tickets to disadvantaged/vulnerable individuals to ensure they can realise the benefits of improved networks. Objective 4 aligns strongly with the Wellbeing Strategy, and particularly strongly in allowing access to opportunities as part of becoming a child friendly town (Priority 2) and increased resilience in the transport network supporting a strong and empowered community (Priority 3).

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LTP Strategic Objective and Outcomes	Lifestyle	Access, accessibility & community severance	Economic health	Safety	Crime	Congestion and stress	Air quality	Noise	Rationale	Mitigation measures/ recommendations
Objective 5: Drive rapid decarbonisation in the movement of people and goods in line with local and central government targets, embracing innovation and technology Increased roll out of electric vehicle charge points (and zero emission refuelling) Reduction in greenhouse gas emissions from travel Reduction in greenhouse gas emissions from transport infrastructure	+	+	++	+	0	0	+	+	Reducing carbon emissions will include alternative methods of travel including the shift to electric vehicle usage and zero emission refuelling. With transport being a major contributor to UK greenhouse gas emissions, decarbonising the network will restore high environmental quality in terms of low pollution levels. Both the built and natural environment are expected to benefit from a reduction in vehicle emissions, as well as an investment in the infrastructure which can help facilitate zero-emission journeys. The increased in number of community-oriented shared transport schemes can improve accessibility of the transport network for disadvantaged or vulnerable groups, who may require door-to-door access to certain services or have lower levels of access to public transport.	An opportunity to further improve likely health impacts resulting from this objective would be to introduce cheaper/free public transport services to those from a disadvantaged background. Additionally, supporting the uptake of electric vehicles (including affordability) and zero-emission journeys through provision of grants to low-income households could accelerate a modal shift. Reductions in emissions from transport will not solely be achieved through switching to alternative fuels, therefore this objective must align with those seeking to achieve modal shift and greater modal share for alternative modes. Objective 5 aligns well with Luton's Wellbeing Strategy, particularly Priority 3 'supporting a strong and empowered community' through improved access to alternative fuels and long term benefits of reduced greenhouse gas emissions.

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Table 6: Assessment of the health effects resulting from the policies in Luton's LTP5 (Policies under Chapter 3: Healthy and quality of life)

LTP Strategic Objective and Outcomes	Lifestyle	Access, accessibility & community severance	Economic health	Safety	Crime	Congestion and stress	Air quality	Noise	Rationale	Mitigation measures/ recommendations
Policy 1: Active travel and public realm design principles	++	++	+	++	+	+	++	+	The policy encourages improved design of public realm and streets, ensuring they are accessible. Healthy Streets approach can help improve the public realm can encourage modal shift through increased safety for active travel, reducing emissions and attracts use of public spaces, including discouraging crime and encourages social interaction. Promoting active travel and improved public realm can also help reduce levels of congestion and stress.	Consideration of design measures in relation to health and accessibility which could include toilets, seating toilets, water points, sources of shade and cooling (preferably green/blue infrastructure), lighting and security, and accessibility measures.
Policy 2: Active travel infrastructure	++	+	+	++	?	+	+	+	The policy encourages modal shift through improved active travel infrastructure. There are potentially significant benefits in relation to connectivity, reducing air pollution, exercise and social well-being. As well as significant economic and health benefits from better access to employment, services and healthcare. Increased levels of active travel can also help reduce levels of congestion and stress.	Active travel schemes that involve noise impacts during construction should include location-specific mitigation measures to ensure no single area is disproportionately affected. Ensure that streets/public spaces are designed with additional levels of stakeholder engagement to identify specific constraints and mitigatory solutions, interventions designed to improve walking and cycling do not adversely affect others (e.g. the impact of shared spaces on blind and partially sighted individuals) and can be used by everyone (e.g. walking and cycling infrastructure designed to also include people who use wheelchairs, mobility scooters, frames & walking sticks).

LTP Strategic Objective and Outcomes	Lifestyle	Access, accessibility & community severance	Economic health	Safety	Crime	Congestion and stress	Air quality	Noise	Rationale	Mitigation measures/ recommendations
Policy 3: Access to parks, green spaces and the River Lea	++	+	?	0	+	?	+	+	The policy seeks to provide enhanced natural environment. Uptake of active travel is likely to be greater, with benefits to physical and mental health and well-being. Improving active travel access to the River Lea throughout the town can have significant benefits to residents. Particularly areas in the north of the town suffering from deprivation (i.e. Leagrave) where the river is located. This policy will also have positive impacts in terms of air quality and noise, allowing greater access to areas free from the impacts of private vehicle traffic on noise and localised air quality.	Trees and other vegetation reduce air pollution and noise and associated health effects, including respiratory disease, asthma, sleep deprivation, anxiety and annoyance. Use of green infrastructure to reduce urban heating and related health effects.
Policy 4: Education, training and promotion	+	+	0	+	0	0	?	0	The policy seeks to provide improved access to information and training, encouraging people to make more sustainable choices and building confidence in active travel. Improved confidence is likely to lead to some mode shift, particularly among young people and school travel. This is likely to benefit physical and mental wellbeing, in an area which suffers from significant levels of inactivity and obesity in school children.	
Policy 5: Transport safety and security	+	+	?	++	+	+	+	+	Support for improved road user behaviour and safety in transport planning. This reduces chance of injury and is more likely to encourage active travel modes, with associated benefits on healthy lifestyles, congestion, air quality, and noise. Higher proportions of killed or seriously injured casualties in road traffic collisions than comparative areas. Improvements to safety and security would have further benefits to those using active modes as vulnerable road users.	

Table 7: Assessment of the health effects resulting from the policies in Luton's LTP5 (Policies under Chapter 4: Accessibility and equality)

LTP Strategic Objective and Outcomes	Lifestyle	Access & accessibility ommunity	Economic health	Safety	Crime	Congestion and stress	Air quality	Noise	Rationale	Mitigation measures/ recommendations
Policy 6: Public transport infrastructure	+	++	+	+	0	+	+	0	Improved public transport infrastructure through delivery of the BSIP and busway development will lead to communities being better connected this will improve access to services, well-being and reducing isolation, benefiting mental health. There is potential for improved air quality, reduced congestion and related stress. The delivery of Butterfield Park & Ride facility is likely to improve connectivity, reduce congestion and stress, and potentially have an improvement on air quality by reducing the number of private vehicles on the road.	Public transport schemes which involve noise impacts during construction should be mitigated on a location-specific basis, to ensure that no single area is disproportionately affected. Incorporate cycle parking and storage at transport interchanges. Consider personal security as part of design at interchanges.
Policy 7: Public transport services and on-demand transport	++	++	+	+	0	+	+	0	Provision of on-demand transport supports access to services and access to a wider range of job opportunities. The policy supports better safety and security. Provision outside normal working hours (i.e. early morning and late night) supports access to a wider range of job opportunities and better connectivity. Improved provision in rural areas will help reduce social isolation and significantly improve access to services in these areas.	
Policy 8: Customer experience and fares	+	++	+	+	+	+	+	?	The policy supports accessibility improvements, better transport interchanges, and access to key services such as education, health and social care. It also aims to reduce transport poverty by making transport more affordable, with associated impacts on improved localised air quality (by improving access to public transport and reducing private vehicle traffic).	

LTP Strategic Objective and Outcomes	Lifestyle	Access & ommunity accessibility	Economic health	Safety	Crime	Congestion and stress	Air quality	Noise	Rationale	Mitigation measures/ recommendations
Policy 9: Integrated transport and reform	+	+	+	?	?	?	+	0	This policy supports improvements in the delivery of bus services, including improved management, passenger experience, and services. This can improve access to key services, improve air quality through adoption of zero-emission buses, and reduce levels of social isolation through a more comprehensive network.	Accelerated delivery of reform options will provide improved opportunity for benefit realisation across all policies related to buses, allowing further control over network, accessibility, and affordability.

Table 8: Assessment of the health effects resulting from the policies in Luton's LTP5 (Policies under Chapter 5: Sustainable connectivity, economy and development)

LTP Strategic Objective and Outcomes	Lifestyle	Access, accessibility & community severance	Economic health	Safety	Crime	Congestion and stress	Air quality	Noise	Rationale	Mitigation measures/ recommendations
Policy 10: Rail	+	++	+	0	0	+	+	+-	Communities are better connected with a focus on growth, tourism along the south coast and connectivity to surrounding areas. Public transport use can improve well-being through social interaction and encourage onward active travel. There are potential improvements to congestion, related stress and air quality. Movement of freight (by rail) is likely to have benefits to communities in reducing movement of freight by road. There are also likely to be economic benefits from better movements of goods. Other health benefits are likely to be limited.	Rail schemes (including rail freight) can involve noise impacts during construction and should be mitigated on a location-specific basis, to ensure that no single area is disproportionately affected. Consideration of station improvements; including mobility hubs and integration with, and access to, green spaces and parks (Active travel infrastructure).

LTP Strategic Objective and Outcomes	Lifestyle	Access, accessibility & community severance	Economic health	Safety	Crime	Congestion and stress	Air quality	Noise	Rationale	Mitigation measures/ recommendations
Policy 11: Inter-urban public transport	+	++	++	0	0	?	?	0	This policy has the potential to improve inter-urban connectivity to areas surrounding Luton. This will include improved connections to areas such as Leighton Buzzard, Milton Keynes, Welwyn Garden City, Hatfield, Hitchin, and Stevenage, as well as connection to Luton Airport. This will improve access to services, well-being and reducing isolation, benefiting mental health. It can also have a significant improvement on environmental health by better connecting people to jobs and opportunities.	
Policy 12: Strategic and major highways	?	+	++	+	0	++	+-	+-	The policy supports improvements on regional and national corridors, linking settlements with areas of growth. Highways improvements such as Vauxhall Way corridor improvements and A6 highway improvements may ease congestion and reducing noise impacts from road sources. There are mixed effects on health, with likely negative impacts on air quality through increased capacity for private vehicle traffic. Increased capacity for private vehicle traffic can lead to induced demand and exacerbate negative impacts on health. Induced demand may also reverse any positive impacts on air quality and noise (therefore a mixed impact is highlighted).	Incorporate of sustainable transport solutions within major highway improvements will go some way to mitigating negative impacts on air quality and noise. Consideration of should be made of how strategic demand management (Policy 13) can reduce congestion, improve air quality, and support sustainable travel.
Policy 13: Strategic demand management	++	+	?	+	0	+	++	+	This policy discourages car dependency and promotes associated improvements in air quality and noise reduction. Efforts to manage demand help reduce congestion and stress, promoting sustainable travel, and is likely to result in greater benefits to physical and mental health and overall well-being.	The integration of this policy with measures for improved access to active travel and public transport can support significantly improved outcomes for healthy lifestyles and sustainable travel choices.

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LTP Strategic Objective and Outcomes	Lifestyle	Access, accessibility & community severance	Economic health	Safety	Crime	Congestion and stress	Air quality	Noise	Rationale	Mitigation measures/ recommendations
Policy 14: Digital connectivity	+	++	++	0	?	+	+	+	This policy is likely to support improved accessibility to the transport network and therefore connectivity to essential services and opportunities. This supports improved access to transport information and promote use of public and active modes, with associated health benefits. Furthermore, the policy supports reduced levels of congestion, improved air quality and reduced noise impacts by encouraging reduced travel (through increased home working) and encouraging public transport through improved information. The policy has potential to improve affordability and ease of use through smart ticketing and better transport interchanges. This improves connectivity, access to services and employment and potential for interchange with active travel.	Ensuring vulnerable, disadvantaged and older generations are not limited or 'left behind' when integrating the latest technology to support future transport journeys is essential. A growth in the number of older groups is expected in Luton (and nationally) with those aged over 65 expected to grow from 13% to 18% between 2021 and 2041. An opportunity to assimilate people to the latest technology could involve targeted awareness sessions as well as on-site assistance to prevent digital exclusion.
Policy 15: Planning principles	+	+	+	+	?	+	+	+	By embedding sustainable transport within the planning process, developments will have potential significant benefits in accessibility to public and active transport networks. Integration of active travel and public transport, in addition to reducing car use through e.g. car-free areas, minimal parking can encourage active travel, exercise and greater social interaction within communities. There would be positive effects through better connecting communities with areas of economic growth.	Integration of active travel, and improvements to public realm within new developments should include elements of better lighting and surveillance to improve public perception and reduce fear of personal safety.

LTP Strategic Objective and Outcomes	Lifestyle	Access, accessibility & community severance	Economic health	Safety	Crime	Congestion and stress	Air quality	Noise	Rationale	Mitigation measures/ recommendations
Policy 16: Airport related development	+	++	+	0	0	+	++	?	This policy will support greater integration of public transport, active travel, and shared mobility to Luton Airport. Luton Airport acts as a key economic and growth hub for the area. Improved sustainable surface access will lead to communities being better connected and improve access to services, well-being and reducing isolation, benefiting mental health. There is potential for improved air quality, reduced congestion and related stress.	Airport related growth more broadly, is likely to lead to noise impacts and should be mitigated to ensure that areas surrounding the airport are not disproportionately affected.
Policy 17: Parking	+	+	+	+	?	0	++	0	This policy will support sustainable travel choices and management of demand for parking. By integrating parking policy with active travel infrastructure, there are potentially significant benefits in relation to connectivity, reducing air pollution, exercise and social well-being. Additionally, integrating with changing needs for electric charging infrastructure can promote electrification of vehicles, with associated benefits for air quality.	Ensuring there is adequate access for those who rely on door-to-door access to services and private vehicles as essential mobility aids, such as Blue Badge parking spaces and parent and child parking.
Policy 18: Freight and urban logistics	0	+	+	+	0	+	++	+	This policy will support reduced impact of road freight in Luton, through encouraging last-mile urban solutions, electrification of fleet, and improving routing. This will reduce the negative impacts on air quality of road freight, reduce noise pollution, and can lead to reduced congestion. Furthermore, this can lead to improved road safety.	Ensure alignment with planning policy, to ensure freight and servicing for new and existing developments, align with the sustainable freight plan for Luton.

Table 9: Assessment of the health effects resulting from the policies in Luton's LTP5 (Policies under Chapter 6: Decarbonisation, climate change, and the local environment)

LTP Strategic Objective and Outcomes	Lifestyle	Access, accessibility & community severance	Economic health	Safety	Crime	Congestion and stress	Air quality	Noise	Rationale	Mitigation measures/ recommendations
Policy 19: Low and zero emission bus and coach	+	+	0	+	0	+	+	+	Supporting the transition to low- and zero-emission buses and coaches is likely to enhance public transport infrastructure and the user experience, increasing confidence in these modes. It is also expected to reduce the environmental impact of these vehicles, improving local air quality and decreasing noise pollution.	Accelerating the transition towards low and zero emission vehicles can support the benefits to public transport infrastructure and experience sooner, encouraging greater confidence and improved perception of the network.
Policy 20: Rail electrification	+	+	+	+	0	0	+	0	Supporting the electrification of rail is likely to support the benefits to public transport infrastructure and experience, increasing confidence in these modes. It is also likely to reduce the impact of these vehicles on the environment, improving localised air quality and reducing noise pollution.	
Policy 21: Electric vehicle infrastructure	?	+	+	?	0	?	+	0	This policy supports the transition towards electric vehicles, with benefits for improved localised air quality. Additionally, there could be significant benefits to those who rely on private vehicles as an essential mobility aid to access door-to-door services. Electric vehicle infrastructure can have significant benefits to the freight and servicing industry, in improving their access to refuelling and reducing their impact on the environment and localised air quality. Conversely, there could be some increased demand for private vehicles which may negate the benefits to active and public modes supported by other objectives and policies.	Ensure alignment with broader strategy for sustainable freight movement, including sustainable urban logistic solutions and modal shift. Ensure that the delivery of EV infrastructure and uptake in EV usage does not come at the detriment of walking, cycling and public transport use.

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LTP Strategic Objective and Outcomes	Lifestyle	Access, accessibility & community severance	Economic health	Safety	Crime	Congestion and stress	Air quality	Noise	Rationale	Mitigation measures/ recommendations
Policy 22: Budgets, offsetting and monitoring	+	+	+	0	0	0	+	0	This policy is likely to support improvements to localised air quality and reduced carbon emissions through supporting the transition to alternative fuels. Additionally, it will support the long term climate resilience and economic health of the area, understanding the investment and funding needs for future low-carbon infrastructure.	
Policy 23: Protecting and enhancing the local environment	++	+	0	0	0	0	++	+	Reducing vehicle emissions could include the switch to alternative fuel and electric vehicles (noting affordability issues) but could also include a reduction in journey dwell times to minimise exhaust emissions and associated noise pollution. This provides an opportunity to enhance the built and natural environment by saving energy and preserving the quality of the area for future generations. Furthermore, conservation of habitats and vulnerable species will help support human and societal needs, as well as stabilise the ecosystem.	Creating connected and attractive community spaces will involve developing an aesthetically pleasing environment while tailoring the space to meet the diverse needs of its users. An opportunity to maximise the health benefits of the general public would be to conduct community engagement to better understand how spaces are currently used.
Policy 24: Asset management and resilience	0	+	+	+	0	+	0	0	Building a transport network which is adaptable ensures that the built environment has capacity to handle any adverse change without lasting impacts and ensures that the benefits from improvements to infrastructure can be fully realised. Recovering from emergency and events quickly, will likely support the efficiency of the transport network, enable rapid interchange and reduce negative impacts of congestion resulting from delays, consequently improving the quality of the environment and improving safety of the network.	

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Conclusion

This HIA has methodologically worked through consideration of health and wellbeing impacts, it has identified where there are potential issues, but also opportunities, and it will help shape the further development and revision of the LTP and HIA to maximise benefits to health and wellbeing across diverse local populations and geographic areas. The nature of the positive impacts described is as follows:

- **Enhanced public transport access**: Improving public transport services and ensuring people can use them confidently will bring numerous health benefits. Better connections to services and opportunities will enable participation in activities that benefit both physical and mental well-being. Additionally, encouraging people to use public transport instead of private cars will reduce emissions and improve air quality, positively impacting respiratory health. The walk to and from bus stops or train stations will also incorporate incidental physical activity into daily life, which is particularly beneficial for individuals with long-term health conditions and other impairments. This is especially important for residents in Luton, where there are high levels of inactivity and a high prevalence of overweight and obesity among young people.
- **Increased access to services and opportunities**: Enhancing access to services and opportunities helps people maintain independence, sustain social and support networks, combat isolation and loneliness, and improve access to healthier food choices. These benefits are particularly significant for growing children. Improving the accessibility of public transport is crucial for disabled individuals, especially at interchanges.
- **Support for improved active lifestyles**: New and improved infrastructure and initiatives to support active travel will make walking, wheeling, and cycling natural choices for short, local journeys. This will have direct positive impacts on people's health through increased physical activity, benefiting both physical health (especially cardiovascular and musculoskeletal) and mental health and well-being. Additionally, it will help reduce congestion and alleviate noise and stress.
- **Sustainable economic growth and access to opportunities**: Focusing on sustainable economic growth and ensuring access to education and employment opportunities through means other than private cars will have positive impacts on opportunities and help reduce deprivation.

It is also important to recognise that in order to maximise the potential of the LTP to ensure good health and ensure that the benefit of better health is available to all, there is also a need to:

- **Ensure that improved access to public transport is accompanied by ways to ensure financial accessibility** (e.g., cheaper/free public transport tickets for disadvantaged/vulnerable individuals) so that people can afford to use these services and benefit from the improved connections (to services, to social networks) that they offer.
- **Promote active travel habits in children** to establish long-term health benefits and resilience, aligning with the goals of becoming a child-friendly town and addressing health issues facing children, with associated impacts on education attainment for young people.
- **Design streets and public spaces thoughtfully and inclusively**. Engage with various stakeholders to identify specific challenges and find solutions that do not negatively impact certain groups. The goal is to make improvements for walking and cycling without causing issues for others, such as blind and partially sighted individuals. Additionally, the infrastructure should be accessible to everyone, including those using wheelchairs, mobility scooters, frames, and walking sticks.

- **Undertake a comprehensive assessment of vulnerable people** to understand how infrastructure changes will affect individuals. Ensure that vulnerable, disadvantaged, and older people are not ‘left behind’ when integrating technology with transport services. This may mean targeted awareness sessions as well as on-site assistance to prevent digital exclusion.
- **Incorporate green infrastructure, vegetation, and trees** as part of placemaking schemes to reduce air pollution, noise, and associated health effects.
- **Improve cycle parking at transport interchanges** to enhance public perception of safety and security, as well as to promote active travel as a primary form of transport.
- **Mitigate noise impacts from major construction schemes** by considering the implications on a location-specific basis.
- **Retain and expand the quantum of Blue Badge parking and parent and child parking**.
- **Introduce better lighting and surveillance** as part of placemaking and implement safe public transport protocols to ensure personal safety and reduce crime.

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