M1 to A6 Link Road

Central Bedfordshire Council

Strategic Outline Business Case - Strategic Case

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Contents

Executive Summary

A five case Strategic Outline Business Case (SOBC) has been produced to guide the option and scheme development of the M1-A6 Link. Key findings across all 5 cases are provided below, providing the reader with:

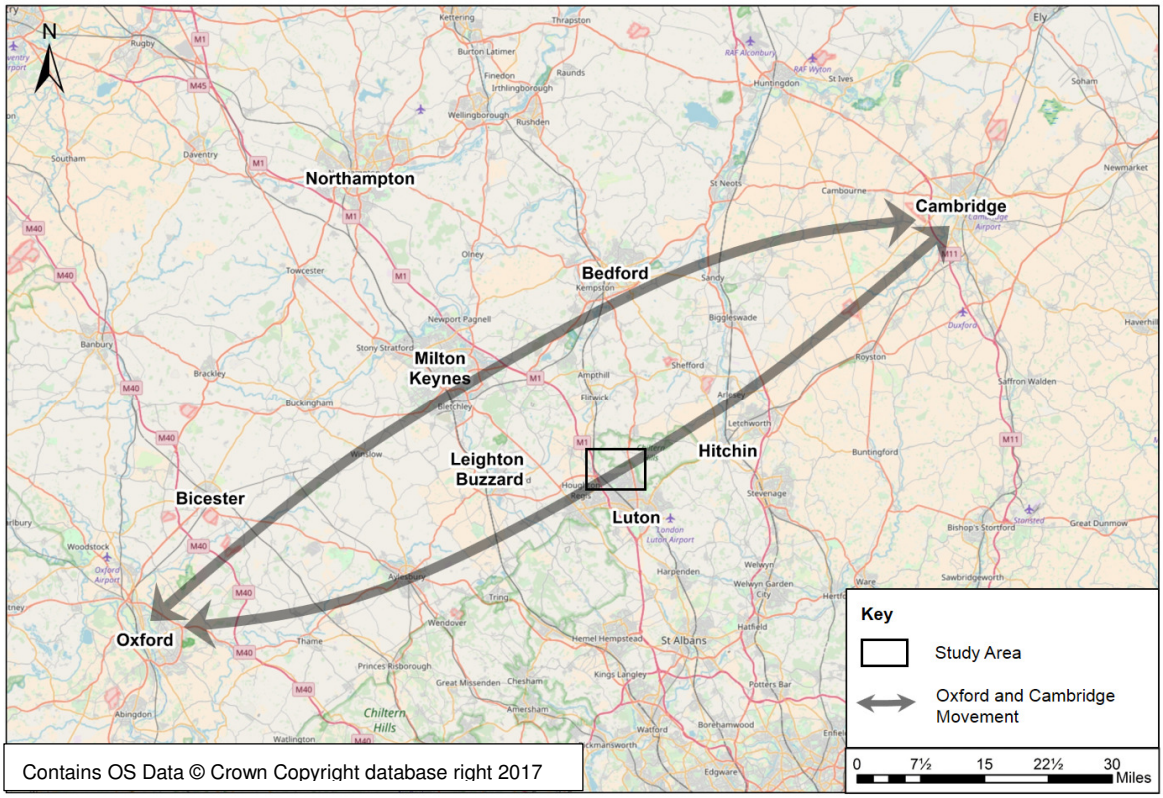
- A summary of the study area context
- The scheme and the preferred option
- The strategic fit

The reader should refer to each of the 5 case documents for further detail.

E1 The study area

The study area is located within the Oxford-Milton Keynes-Cambridge arc, an area prioritised by the Government and National Infrastructure Commission for enhanced east-west regional connectivity. It is also located within the south of the area covered by England's Economic Heartland (EEH) and South East Midlands Local Enterprise Partnership (SEMLEP). It is focussed on the Local Authorities of Central Bedfordshire Council and Luton Borough Council, in particular the Luton-Dunstable-Houghton Regis conurbation with a combined population of 300,000. To the east is Hertfordshire, covered by its own LEP.

Figure E.1 : Study area location within the South East Midlands and Oxford-Milton Keynes-Cambridge Arc



This and other parts of the South East Midlands and neighbouring Hertfordshire represent a polycentric territory of similar and inter-related urban economies with rural hinterlands. It was first described by SEMLEP's then Strategic Economic Plan (2014) as "a garden city type environment on a grand scale."

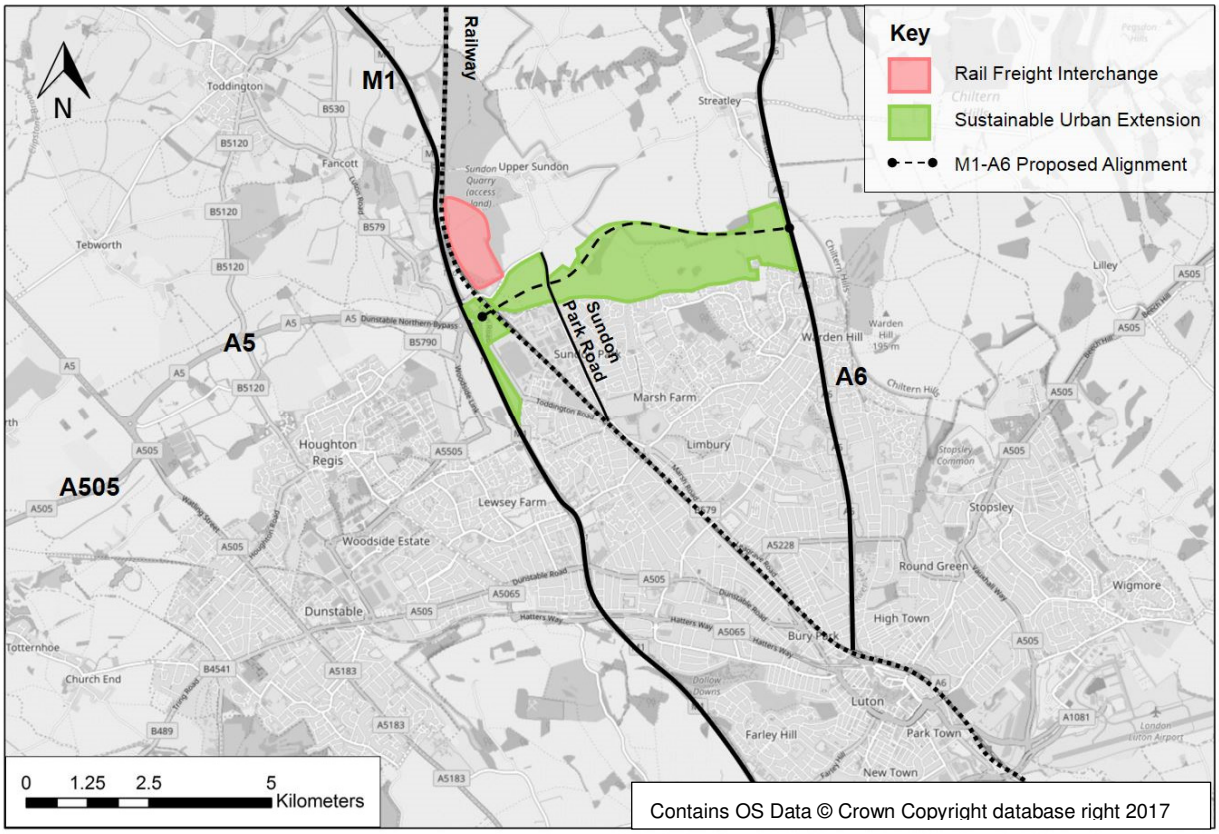
Movement in this study area has historically been characterised by strong north-south links by road and rail, such as the M1 (to London, Milton Keynes, Midlands and the North), A6 (Luton to Bedford), A5 (Dunstable to Milton Keynes) and the Midland Mainline (connecting Luton with Greater London, Gatwick Airport, Brighton,

Bedford, Corby and the Midlands). East-west connectivity is less well developed for all modes, with a large reliance on the private car for most trips.

E2 The Scheme

The M1-A6 link road scheme is located immediately to the north-west of Luton wholly within the unitary authority area of Central Bedfordshire. It comprises a new 4.2km (2.6 mile) long road link between the M1 / A5 from Junction 11a in the west to the A6 in the east with four intermediate junctions, to effectively form a north-western bypass for Luton. The broad location of the scheme is shown below:

Figure E.2 : M1-A6 Link Road Location, Luton / Houghton Regis / Dunstable

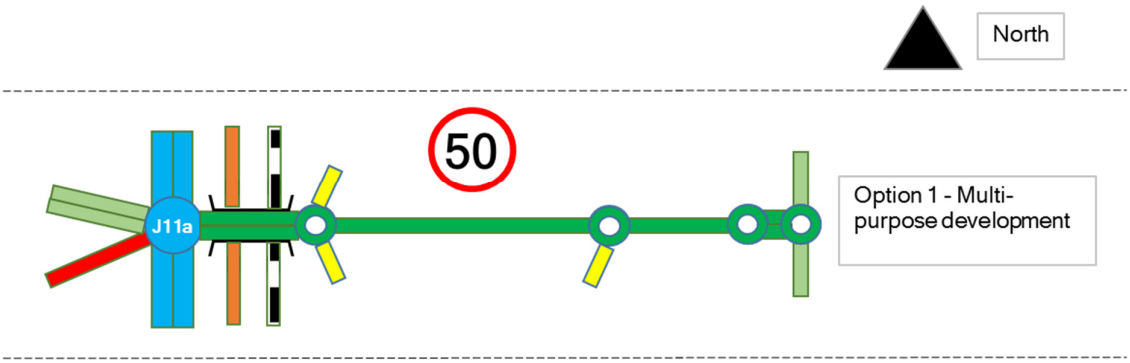


Four scheme options have been appraised as part of the SOBC in terms of their strategic fit and value for money. Each follow a previously adopted alignment between the M1 and A6, with the difference relating to the road's desired function, capacity and speed limits.

E3 The Preferred Option

The preferred option involves a 50 mph link between the M1 and A6 that provides the optimum balance of supporting local growth and sub-regional connectivity. It is schematically shown below.

Figure E.3: Preferred Option Schematic (50 mph multi-purpose development and sub-regional connectivity road)



Moving west to east it includes the following components.

- Junction modifications to M1 Junction 11a to incorporate the Link Road access and egress in the eastern roundabout.
- 530m long dual carriageway link road between M1 Junction 11a and a realigned Sundon Park Road including new structures to carry the link road over the B579, Midland Mainline and Camford Way.
- 3280 m long single carriageway link road east of this junction including:
  - Stopping up Sundon Park Road where it crosses the alignment of the M1-A6 Link to motorised traffic, but providing a crossing point for walking, cycling and horse-riding links along this existing desire line
  - Overbridges / underpasses (x3) providing traffic free access between public rights of way and the sustainable urban extension
  - Intermediate junctions (x2) to provide access to the North of Luton Sustainable Urban Extension.
- 280m long dual carriageway link road between the eastern most intermediate junction 3 and the A6 Barton Road with a new roundabout junction with the A6, offset to the west of the existing A6 alignment.
- Approximately 750 metre of single carriageway and footway/cycleway for the realigned Sundon Park Road linking its current alignment immediately to the north of the Luton area via its junction with the M1-A6 link to Sundon Road for onward connection to the Sundon Rail Freight Interchange.
- 3-metre wide shared use footway / cycleway set back on the south side of the link road with appropriate crossing provision at junctions.
- Appropriate landscaping and noise attenuation measures to mitigate the impact of the road on the natural and built environment and the future sustainable urban extension.
- Sustainable drainage features.

Subject to approvals the scheme would commence construction in 2020 for opening in 2022.

E4 Strategic fit

The South East Midlands is a fast growing region, already making a strong contribution to the UK economy, the Industrial Strategy and Housing Strategy. There has been a substantial increase in business start-up activity in Luton and Central Bedfordshire since 2012 including 50 deals for industrial and distribution units in Luton, Dunstable and Houghton Regis associated with the delivery of the Woodside Link and A5-M1 Link to the west of this scheme. This alongside improving business perceptions suggest that the area is a good place for firms to start and grow their business. Yet it can do even more.

Productivity within Central Bedfordshire and Luton still remains below the England and South East Midlands average. The real potential of new and upscaling firms is constrained by both access to labour markets and high quality employment land. There is a need to plan for the homes that all groups of people can afford to buy or rent to help employers grow their businesses, and also provide the platforms for firms to continue to create more skilled jobs to grow the local economy. All of this requires improved and efficient transport networks connecting the region's major settlements and growth opportunities.

The scheme will make a strong contribution to this need. The Local Plan provides for two strategic allocations for a sustainable urban extension (4,000 homes, 20 ha of employment land) and a rail freight interchange incorporating an additional 40 ha of employment land, north of Luton. In addition to the road, proposed walking, cycling and public transport links will integrate these employment, education, leisure and healthcare opportunities with the wider Luton urban area to ensure that the benefits are widespread, helping to make a positive contribution to existing regeneration initiatives within the Marsh Farm area of Luton. Without a road connecting these sites with the M1 and A6, the Local Plan is clear that these sites cannot be delivered.

These allocations should be seen in the context of wider housing affordability and unmet demand across the South East Midlands and Hertfordshire, and the need for additional and replacement employment land to enable growing firms to upscale to reach their potential in the region. Luton's employment land is significantly ageing The replacement and renewal of this industrial land is happening but lags behind the rest of the region especially for completed new modern office space.

The South East Midlands and Hertfordshire is characterised by a polycentric geography of medium sized settlements. The region currently enjoys good north-south links via the M1, A6, A1 and West Coast, Midland and East Coast Mainlines. Yet for these agglomeration economies to be more productive these need both east-west as well as north-south connectivity. This concept is supported by the National Infrastructure Commission work and early work by England's Economic Heartland on its transport strategy. The DfT's consultation on the MRN has also indicated that there is a case to be made for east-west routes in the study area to play a vital role for movement in the study area.

SEMLEP's Strategic Economic Plan notes the importance of the logistics industry to the region's economy, with the growing London Luton Airport important. However increased congestion, a lack of suitable routes and competition from other areas is a challenge for the sector to overcome. A specific problem related to east-west connectivity is the lack of suitable east-west routes for HGV traffic between the M1, A6 and existing businesses in and around the Luton urban area. This is exacerbated by notable clusters of HGV orientated manufacturing and distribution industries in the Luton area alongside corridors such as the B579 and Sundon Park Road. While these firms have been attracted to the area because of the strong north-south links provided by the M1, customers and suppliers are also located to the east and north east of Luton.

The Midland Mainline constrains east-west travel with a limited number of height cleared routes suitable for heavy goods vehicles to access the M1 from the east. The Midland Mainline presents a notable constraint with a series of height limited bridges north of Luton town centre, resulting in HGVs being permitted to use otherwise substandard routes in the Luton urban area and Sundon. This contributes to significant HGV volumes as a percentage of overall traffic on roads such as Icknield Way in Luton (15-18%) and within the Area of Outstanding Natural Beauty – Streatley Road / Manor Road (23-26%). Neither road's form or function is designed for this use, and this has contributed to safety issues on both roads.

Providing an all-purpose road over the Midland Mainline to connect the A5, M1 and A6 will provide that relief, and provide Central Bedfordshire Council with the opportunity to manage goods vehicle movements on these roads, as it has successfully done following the A5-M1 Dunstable Northern Bypass immediately to the west.

There are environmental considerations including impacts on the Area of Outstanding Natural Beauty which will be documented in the Environmental Assessment accompanying the planning application. Noise and air quality considerations are also important in view of the proximity of the road to the planned sustainable urban extension and impacts on existing communities. These considerations will continue to inform the design as it develops.

1. Introduction

1.1 Purpose of the Strategic Case

At the Strategic Outline Business Case (SOBC) stage of a project, the appraisal identifies the existing and future problems and issues, sets out scheme-specific and wider objectives and assesses four options in terms of delivery of the scheme's objectives and value for money.

The Strategic Case determines whether or not an investment is needed, either now or in the future. Its purpose is to demonstrate the case for change - that is, a clear rationale for making the investment; and strategic fit - how an investment will further the aims and objectives of Government, Central Bedfordshire Council, Luton Borough Council and the South East Midlands Local Enterprise Partnership (LEP).

DfT expectations at the SOBC stage are that the Strategic Case should be well developed, setting out a strong case for change and strategic fit, supported by robust evidence with further iterations at the Outline / Full Business Case stage provide update and further granularity. The Strategic Case is discussed in detail under the following sub-headings:

- Business Strategy of Central Bedfordshire Council (Chapter 2)
- Existing Situation (Chapter 3)
- Future Situation (Chapter 4)
- Need for Investment (Chapter 5)
- Scheme Objectives (Chapter 6)
- Scheme Scope (Chapter 7)
- Constraints, Interdependencies and Stakeholders (Chapter 8)
- Option Assessment (Chapter 9)
- Strategic Fit with the Transport Investment Strategy priorities and wider policy objectives (Chapter 10)
- Conclusion – Summary and Next Steps (Chapter 10).

Appendices are also provided where there is substantial data and analysis to allow the Strategic Case to be as concise as possible. Appendix A provides details on traffic volumes in the study area. Appendix B provides detailed analysis of the strategic fit of various national, regional and local policies referenced in Chapters 6 and 10 with the preferred option. Appendix C includes the scheme's general arrangement.

The Strategic Case has important synergies with the standalone *Option Assessment Report*, sources of data collection evidence produced by consultants AECOM for the Central Bedfordshire and Luton Transport Model and the *Environmental Report.* It also has an analytical link with the *Economic Case* through the scheme's economic context section – the intention being that the latter provides a 'golden thread' through the Strategic Case and Economic Case.

1.2 Limitation Statement

The sole purpose of the report is to support the SOBC for the M1-A6 Link scheme.

The document should be read in full, with no excerpts to be representative of the findings. It has been prepared exclusively for Central Bedfordshire Council, South East Midlands Local Enterprise Partnership (SEMLEP) and the Department for Transport (DfT) and no liability is accepted for any use or reliance on the report by third parties.

2. Business Strategy

2.1 The Promoter

Central Bedfordshire Council is the promoter of the M1-A6 Link scheme. It is a unitary authority responsible for a range of local government functions including land use planning, highways (other than the M1, A1 and A5 managed by Highways England) and transport planning within the area that the scheme is located.

Central Bedfordshire Council's strategic plan[1] outlines the **key priorities** for the organisation, why these matter and how these will be achieved over the 2015-2020 period. These are summarised below and help to provide a high level context for this Business case.

2.2 Key priorities

Enhancing Central Bedfordshire as a place to live – by:

- Enhancing prosperity with more and better jobs; to improve infrastructure, and to provide the quantity and type of housing needed by residents while maintaining and enhancing the character of Central Bedfordshire.
- Nurturing housing growth that offers a range of opportunities for people to live in housing that is affordable, sensitive to their needs and of great quality.
- Striving to retain the character of Central Bedfordshire that is so cherished by its residents and will address any concerns they may have around safety in their communities.
- Development facilitated by great infrastructure, such as broadband, Wi-Fi and transport.
- Market Towns and villages thriving and prospering, with improved town centres and facilities.

Great resident services including seeking to continue to improve the pavements and roads.

Improving education and skills including creating opportunities for everyone to have the access and incentives to work, either in Central Bedfordshire or in other areas, which they will be able to get to with ease.

Protecting the vulnerable and improving wellbeing of residents .

Creating stronger communities providing a greater sense of place and participation in local affairs and services. This will help create greater resilience and reduce social isolation.

A more efficient and responsive council that continues to be focused on cost effectiveness and efficiency in all that it does, and for this to be recognised by its residents. The Council will continue to focus on outcomes rather than process. It will make the most of opportunities to create value from trading, from growing, and from working across the public and private sectors to deliver great solutions for its residents.

Alongside the Five Year Plan, Central Bedfordshire Council's Local Plan[2] sets out how Central Bedfordshire will develop over the next 20 years, planning for up to 20,000 homes and 24,000 jobs over the next 20 years. The Local Plan outlines the strategy for ensuring that the growth that is needed is delivered in the right place, and is of the right character and quality. It is also about ensuring that growth is delivered with the supporting roads, schools and services such as health, as well as retail, leisure and community facilities. Further detail on the Local Plan is provided in Sections 3.8.6 and 4.3, which includes commentary on the North of Luton and Sundon Rail Freight Interchange Strategic Allocations closely linked to the M1-A6 Link scheme.

[1] Our Five Year Plan 2015-2020, Central Bedfordshire Council http://www.centralbedfordshire.gov.uk/Images/five-year-plan-central-bedfordshire_tcm3-3973.pdf, accessed 18 May 2018
[2] http://www.centralbedfordshire.gov.uk/planning/policy/local-plan/overview.aspx, accessed 18 May 2018

3. Existing situation

3.1 Introduction

The chapter is structured under the following sub-headings, providing the reader a broad understanding of the geography and economy of the area:

- The population and housing context (Section 3.2) as summarised in the Central Bedfordshire Local Plan (2018).[3]
- Demographics (Section 3.3), employment trends (Section 3.4) and housing affordability (Section 3.5) setting the scene for why more homes are planned north of Luton.
- Educational and skills attainment (Section 3.6) to show that Central Bedfordshire is a success story and there is an opportunity to help neighbouring Luton close the gap and maximise the benefits from new employment opportunities.
- Car ownership, distance and travel to work (Section 3.7).
- Economy – including the structure of the economy, sectoral growth, economic performance and productivity, business perception of strengths and constraints, economic participation within society, deprivation and finally growth opportunities (Section 3.8). This includes a brief mention of the growth and regeneration set out in Central Bedfordshire and Luton's Local Plans, its dependency on the M1-A6 Link and the wider connection between transport and the economy. This provides a useful scheme specific socio-economic context in line with DfT 2018 WebTAG guidance and provides a golden thread of relevance to the appraisal within the Economic Case.
- Transport and movement context network (Section 3.9). This describes the existing transport network across modes and how north-south links are superior to east-west routes in the study area.
- Performance of the road network is described briefly in Section 3.10. This analysis covers commuting patterns, traffic volumes and road safety. Further in depth data is provided in Appendix A. This section will be kept under review in further iterations of the Strategic Case as data becomes available on journey times, delay and reliability once the A5-M1 Link has bedded down in people's travel patterns.
- A standalone Environmental report has been produced to aid the Economic Case and the preparation of a future Planning Application. A summary of the environmental context including an environmental constraints map is provided in Section 3.11.
- Mini section summaries are provided at relevant points throughout the Chapter.

3.2 The population and housing context

Central Bedfordshire is governed by a unitary authority with a growing population, currently of around 274,000[4]. It is a largely rural area with over half of the population living in the countryside, and the rest in relatively small market towns. The largest settlement is that of Dunstable-Houghton Regis in the south of the local authority area (with around 55,000 residents), which in turn forms part of the much larger Luton-Dunstable-Houghton Regis conurbation with a combined population of some 300,000.

The area of North Luton where the proposed M1-A6 Link lies is in a strategic location near to London and on the edge of the Oxford-Milton Keynes-Cambridge corridor. It sits within the Luton functional housing market region which includes Luton, Dunstable and Houghton Regis, and a large part of south Central Bedfordshire. Its prime location and connectivity alongside its relative affordability (see Section 3.5) means that there are high growth pressures. The case for new infrastructure is underpinned by the need to support areas where population growth is occurring most rapidly.

Within the South East Midlands, Hertfordshire and Buckinghamshire, major urban areas that adjoin Central Bedfordshire are experiencing growth pressures that are intensifying. Within these Housing Market Areas

[3] http://www.centralbedfordshire.gov.uk/Images/pre-submission-local-plan-compressed-v2_tcm3-27081.pdf, p.12, accessed 19 May 2018
[4] https://www.jsna.centralbedfordshire.gov.uk/jsna/info/8/demography/48/population

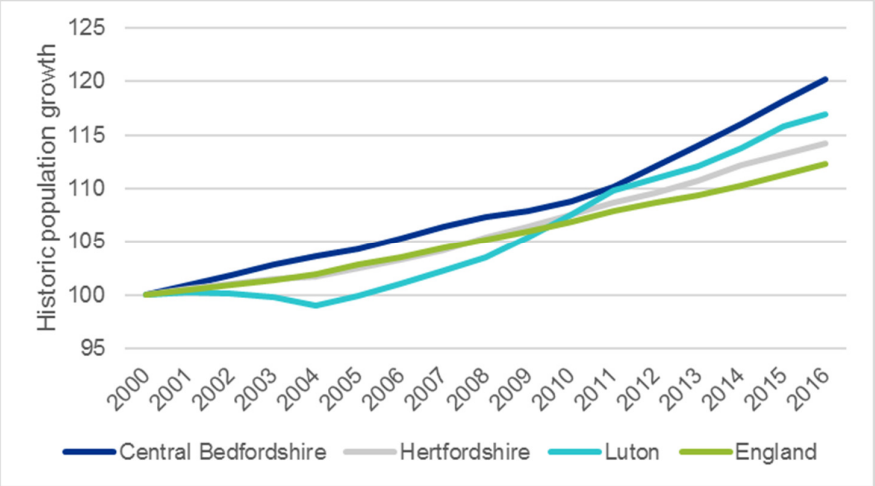
(HMAs), urban areas are often constrained by tightly drawn boundaries and therefore due to housing pressures, may have to look beyond their administrative area to accommodate growth. Less expensive housing costs and the availability of employment space in the area is also attractive to those looking to move from areas further south. Accommodating growth pressures in the form of unmet housing need from neighbouring authorities, close to where the need arises, could be achieved in the south of the area by removing the most sustainable locations for development from the Green Belt, such as the North of Luton Strategic Allocation. This also means that infrastructure is required to develop this land sustainably.

Housing is a key priority for Government. Its Housing White Paper produced in February 2017[5] noted that the housing market in the UK is not delivering the homes that people need. The ratio of average house prices to average earnings has more than doubled since 1998, making it harder for millions of people to afford their own home. At the root of this lies a failure to build enough homes. Since the 1970s, there have been on average 160,000 new homes built each year in England. This is well below the estimated 225,000 to 275,000 homes per year needed to keep up with population growth and tackle years of under-supply.

3.3 Demographics

Luton, Central Bedfordshire and Hertfordshire population growth rates have all outstripped the England national average as Figure 3.1 below shows.

Figure 3.1: Historic population growth index (year 2000 = 100)[6]



10-year migration trends alone across Luton and Central Bedfordshire suggest that household numbers would increase by 41,300 households in the 20 years between 2011 and 2031, requiring provision of 42,900 dwellings over that same time period[7]. The Luton & Central Bedfordshire Strategic Housing Market Assessment Update attributes population change to the two following components:

- Natural change
- International migration.

3.4 Employment trends

In addition to demographic trends, the Local Plan considers the projected growth of the economically active population and how that fits with future changes in job numbers. Central Bedfordshire Council's draft Local Plan provides for a minimum of 24,000 jobs[8] and Luton's adopted Local Plan provides for 18,000 jobs[9]. These will be delivered through a range of employment opportunities in the growth locations and through strategic

[5] Department for Communities and Local Government: Housing White Paper – Fixing our Broken Housing Market, February 2017
[6] Source: ONS
[7] http://www.centralbedfordshire.gov.uk/Images/shma-update-2015_tcm3-5559.pdf
[8] http://www.centralbedfordshire.gov.uk/planning/policy/local-plan/pre-submission.aspx, accessed 18 May 2018
[9] https://www.luton.gov.uk/Environment/Lists/LutonDocuments/PDF/Local%20Plan/adoption/Luton-Local-Plan-2011-2031-November-2017.pdf, p21

employment sites, such as the Sundon Rail Freight Interchange at J11a of the M1, closely associated with this M1-A6 Link scheme.

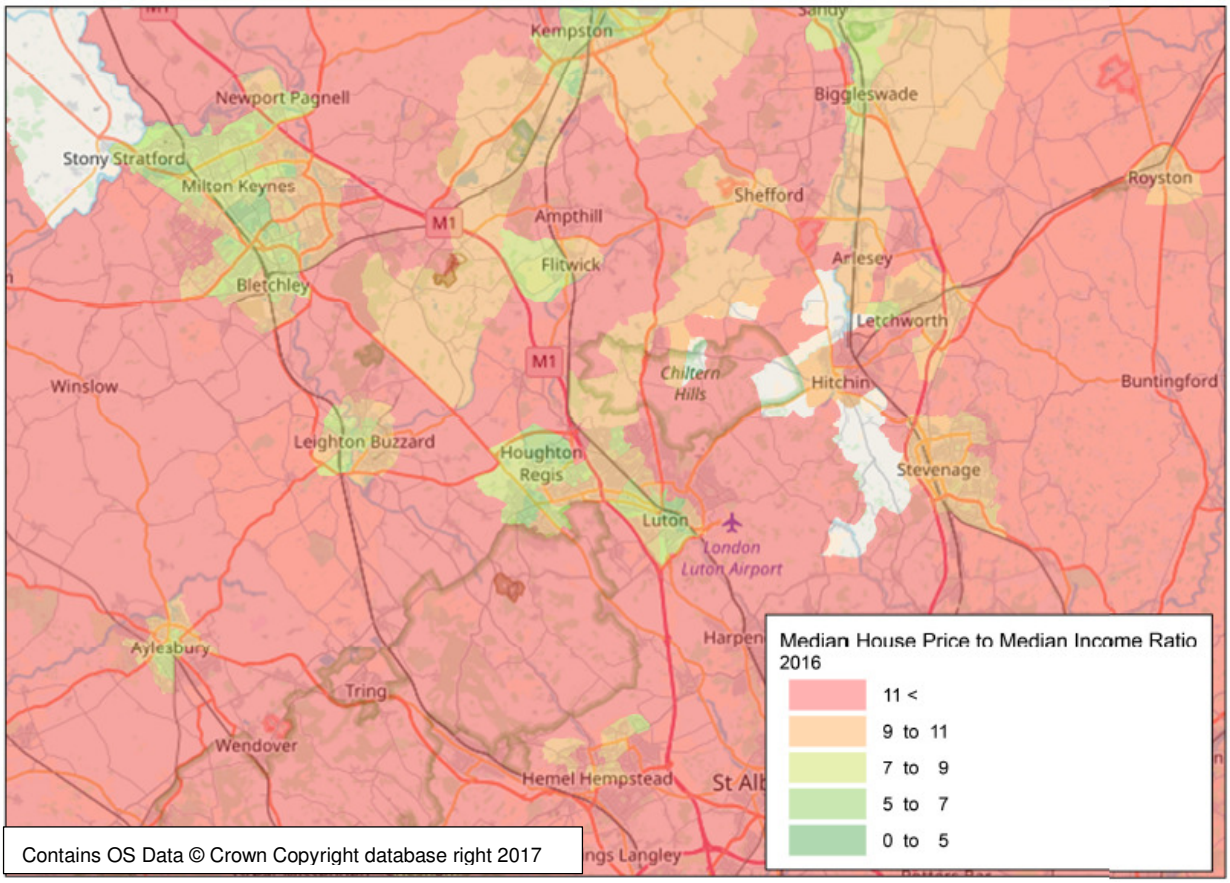
Taking into account the need to balance jobs and workers results in additional housing need over the 2011-2031 period. The SHMA proposed an uplift of 10% (3,300 dwellings) in response to market signals and evidence from planned jobs and workers identifies to provide enough workers for the likely increase in jobs. The baseline housing need is therefore increased to a total of 47,300 dwellings over the 20-year period 2011-31, an average of 2,365 dwellings per year.

3.5 Housing affordability

Housing affordability is a major issue in the SEMLEP region and Hertfordshire. As in other LEP areas, housing completions have not matched existing levels of demand. Housing affordability is also a general problem throughout the region, although housing is relatively more affordable in Dunstable, Houghton Regis and Luton.

Figure 3.2 below illustrates this through an affordability factor based on the ratio of median house price to median income. A factor of six, for example, indicates that the median house costs six times the median income in that area. The average affordability ratio in Luton in 2016 was 7.4, up from 2.5 in 1997. The average affordability ratio in Central Bedfordshire in 2016 was 10.4 (no data prior to 2008). The average affordability ratio in England in 2016 was 7.6, up from 3.6 in 1997. Being relatively more affordable, the North of Luton Strategic Allocation has the potential to deliver housing for existing and future employees of the wider region's growing employment base, and help to contribute to solving the skilled labour issue mentioned as a constraint to growth by businesses in Central Bedfordshire and the South East Midlands at large (see Section 3.8.4).

Figure 3.2: Affordability ratio in and around study area[10]



[10] Source: Jacobs analysis of ONS data

Key Observations

- *Population growth in Central Bedfordshire reflects the attractiveness of the area as a place to live and work, its connectivity and relative affordability.*
- *Housing affordability is a major issue within the South East Midlands and Hertfordshire and one of the drivers for growth.*
- *In the context of the M1-A6 Link scheme the demographics, housing and employment trends matter, because there is a need to plan for the homes that all groups of people can afford to buy or rent to help employers grow their businesses and then provide the platforms for firms to continue to create more skilled jobs to grow the local economy. All of this requires improved and efficient transport networks connecting the region's major settlements and growth opportunities.*

3.6 Educational and skills attainment

SEMLEP makes clear investment to better match future jobs with local skill sets needs to go hand in hand with investment in infrastructure led growth to maximise the opportunities for local people. Specifically, 73% of new jobs by 2024 will require attainment, training and skills acquisition at Levels 2, 3 and 6. Conversely, there is set to be a standstill or decrease in demand for those with low skills if nothing is done. Table 3.1 shows that Central Bedfordshire as a whole performs well across all qualifications, with fewer people without a qualification compared to the national average. The converse is true of Luton and to a lesser extent the SEMLEP area as a whole. SEMLEP's Lifelong Learning Plan, Local Growth Fund Investment and from the European Structural Investment Fund[11]. is aimed at addressing this discrepancy across the region.

Table 3.1: Highest qualification held by residents of each district in the study area, South East Midlands LEP and England[12]

Highest qualification held	Central Bedfordshire	Luton	SEMLEP	England
No qualifications	19.4%	23.6%	20.3%	22.5%
Level 1 (equivalent to GCSE G-D grade)	14.9%	14.6%	14.9%	13.3%
Level 2 (equivalent to GCSE A*-C grade)	17.0%	14.5%	16.2%	15.2%
Apprenticeship	4.7%	3.3%	3.9%	3.6%
Level 3 (equivalent to A level)	12.6%	11.1%	11.9%	12.4%
Level 4 or above (equivalent to a diploma)	27.3%	22.3%	26.6%	27.4%
Other qualifications	4.1%	10.7%	6.2%	5.7%

Higher qualified people are generally understood to typically be more willing to travel further to access higher skilled jobs, indicating that the higher skilled workers in the SEMLEP area are currently more likely to travel further to reach the key employment centres in surrounding districts.

Central Bedfordshire already fulfils that role exporting high skilled labour to growing firms throughout the region and beyond. New high quality homes associated with this scheme can support this virtuous circle as well as help neighbouring Luton to close its gap through the way the scheme helps facilitates employment allocations at the North of Luton and Sundon Rail Freight Interchange. These in turn will provide the platform for business growth and scale up across the South East Midlands.

3.7 Car ownership and travel to work

The following table shows car ownership in the study area. Car ownership is high in Central Bedfordshire as a whole as a reflection of the predominantly rural population. Within the immediate study area around Luton, Dunstable and Houghton Regis car ownership is lowest in Luton although still similar to the England average.

[11] Source: https://www.semlep.com/modules/downloads/download.php?file_name=742 [Accessed 02/05/2018]
[12] Source: 2011 Census, (DC5102EW)

Table 3.2: Car Ownership Levels in the Study Area [13]

No. of cars in household	Central Bedfordshire	Dunstable-Houghton Regis	Luton	Hertfordshire	SEMLEP	England
No car or van	13%	19%	27%	17%	18%	26%
1 car or van	40%	43%	44%	42%	41%	42%
2+ car or van	47%	38%	28%	41%	40%	32%

These high rates of car ownership are reflected in how people travel to work in Central Bedfordshire, Dunstable and Houghton Regis. Luton being a larger urban area with lower car ownership again has patterns similar to the England average. Within this context it should be noted that the Local Plan makes clear that the North of Luton Strategic Allocation will be integrated with public transport, walking and cycling links within the Luton area to provide people with realistic choices, including links to Leagrave station for onward rail links to London and Bedford.

Table 3.3 illustrates that based on 2011 Census commuting flows, 64.5% of working residents in Luton and Central Bedfordshire are also employed in the local area. This implies that 35.5% commute to jobs outside the area. At the time of the 2011 Census, 24.2% of jobs in Luton and Central Bedfordshire were filled by people travelling in from other authorities.

Table 3.3: Method of Travel to Work in the Study Area [14]

Mode of travel	Central Bedfordshire	Dunstable-Houghton Regis	Luton	Hertfordshire	SEMLEP	England
Work from home	6%	4%	3%	6%	6%	5%
Train, underground,	7%	3%	6%	14%	4%	10%
Bus, mini bus or coach	2%	4%	8%	3%	4%	8%
Driving a car or van	70%	71%	59%	61%	67%	58%
Passenger in a Car or Van	5%	6%	9%	4%	6%	5%
Bicycle	2%	2%	1%	2%	2%	3%
On foot	8%	10%	13%	13%	10%	11%
Other	0%	1%	1%	1%	1%	1%

Table 3.4 and Table 3.5 show the distance that people travel to work either as residents or workers in the study area. Dunstable, Houghton Regis and Luton residents are more likely to live and work within 10 km (6 miles) of their home than those in Central Bedfordshire as a whole. This reflects the predominantly rural nature of Central Bedfordshire with small to medium size towns.

The M1-A6 Link in supporting the delivery of the North of Luton and Sundon Rail Freight Interchange Strategic Allocations provides the opportunity to deliver new homes and jobs in close proximity alongside existing strategic allocations in Houghton Regis. This provides an excellent opportunity to internalise more journeys within the wider Luton-Dunstable-Houghton Regis conurbation as well as provide firms with the ability to attract high skilled niche jobs and suppliers through strong links to the motorway network.

[13] Source: 2011 Census, (DC4109EWla)
[14] Source: 2011 Census, (DC7101EWla)

Table 3.4: Distance travelled to work by the resident population within the study area [15]

Distance travelled to work by residents	Central Bedfordshire	Dunstable-Houghton Regis	Luton	Hertfordshire	SEMLEP	England
Less than 2km	15%	22%	26%	18%	20%	20%
5km to less than 10km	14%	18%	14%	15%	17%	21%
10km to less than 20km	23%	14%	14%	18%	16%	19%
20km to less than 30km	9%	12%	9%	12%	9%	7%
30km to less than 40km	4%	3%	4%	8%	4%	3%
40km to less than 60km	7%	7%	9%	5%	5%	3%
60km and over	5%	2%	3%	2%	6%	4%
Work mainly at/from home	12%	10%	9%	13%	13%	13%
Other	10%	11%	13%	10%	10%	10%

Table 3.5: Distance travelled to work by the workplace population within the study area [16]

Distance travelled to work by workers	Central Bedfordshire	Dunstable-Houghton Regis	Luton	Hertfordshire	SEMLEP	England
Less than 2km	18%	23%	20%	16%	18%	17%
5km to less than 10km	12%	18%	23%	15%	19%	18%
10km to less than 20km	14%	17%	12%	14%	14%	17%
20km to less than 30km	16%	8%	10%	16%	13%	15%
30km to less than 40km	5%	6%	5%	7%	7%	6%
40km to less than 60km	2%	2%	3%	3%	3%	3%
60km and over	2%	2%	3%	2%	2%	2%
Work mainly at/from home	3%	3%	8%	4%	4%	3%
Other	15%	10%	7%	12%	11%	10%

Key Observations

- *Skills attainment is higher in Central Bedfordshire than Luton. This provides the headroom for growth associated with the M1-A6 Link and for the potential for benefits to be realised in adjacent Luton given existing investment in skills programmes by SEMLEP and other organisations.*
- *70% of Central Bedfordshire residents and 59% of Luton residents drive to work. The North of Luton Strategic Allocation will be integrated with public transport, walking and cycling links within the Luton area to provide people with realistic choices, including links to Leagrave station.*
- *Residents of Luton-Dunstable-Houghton Regis are more likely to live and work close to their home than Central Bedfordshire reflecting the urban make-up. The provision of homes and jobs in close proximity alongside other strategic allocations provides an excellent opportunity to internalise journeys for work, and deliver travel patterns similar to the Luton-Dunstable-Houghton Regis average, yet still attract the niche skills made possible by strong north-south links to the M1 and improving east-west links through both this scheme and the recently delivered A5-M1 scheme.*

[15] 2011 Census (DC7102EWla)
[16] 2011 Census

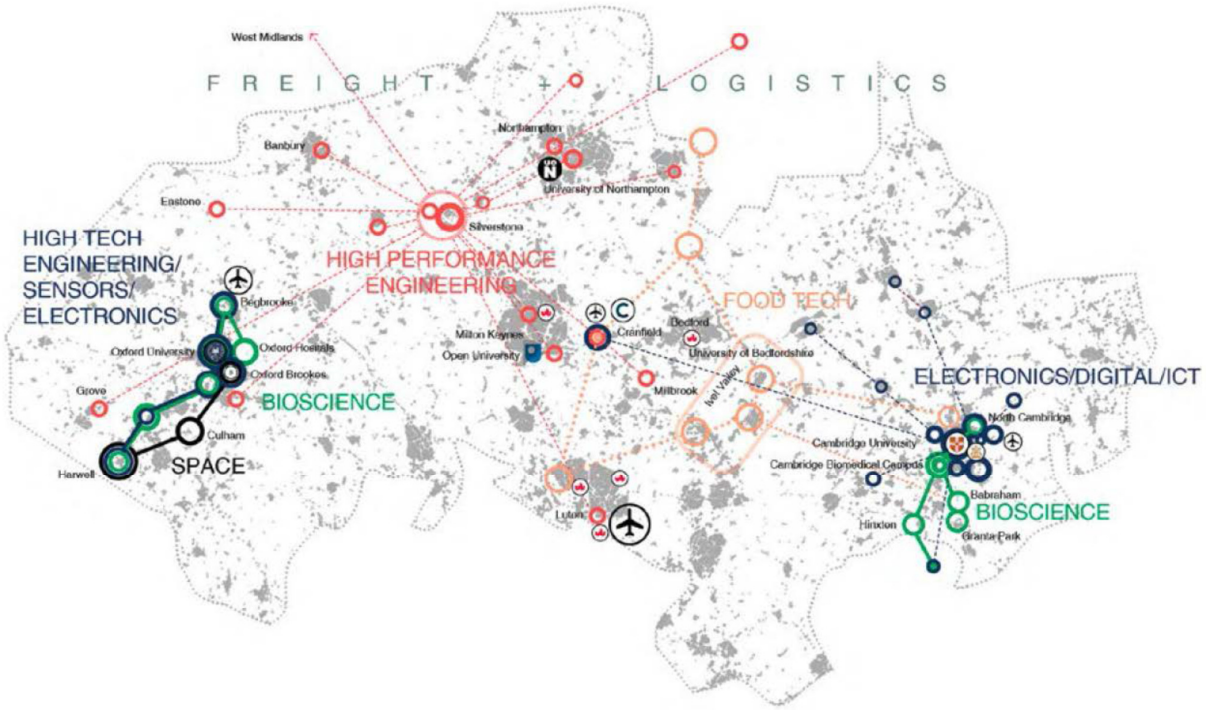
3.8 Economy

3.8.1 Structure of the economy

The Government's Industrial Strategy[17] specifically notes the potential of the Cambridge-Milton Keynes-Oxford corridor to become the UKs answer to Silicon Valley, noting the "nationally significant industry concentrations such as information technology…automotive engineering and professional services." It specifically references £6.9m worth of government funding for autonomous vehicle infrastructure testing shared by the Millbrook proving ground, approximately 10-15 miles north of the proposed M1-A6 link.

This is reinforced in more detail by SEMLEP's Strategic Economic Plan (2017)[18] and the emerging Local Industrial Strategy (July 2018). These documents identify high performance technology, including precision engineering; manufacturing and advanced technology, including food and drink; logistics (as a result of its prime location) and the creative and cultural industries as key differentiators for the region's economy. The South East Midlands is best represented as a polycentric patchwork of similar and inter related urban economies with rural hinterlands. It has a real potential for growth – largely because of the quality and wider relevance of the technologies being developed and applied by many of the firms, but also because the cluster is located in one of the fastest growing and dynamic parts of the UK. These sectors overlap each other spatially and there is a real opportunity to make the most of these interactions to deliver further growth. These demand interaction, both north-south where there are strong established links as well as east-west where there are not.

Figure 3.3: High tech clusters within the South East Midlands[19]



Logistics is a key sector for the South East Midlands, accounting for 9.5% of total PAYE and VAT-registered enterprises in the area in 2015, versus 6.8% of such enterprises in England, and for 12% of all employment in the South East Midlands in 2014, versus 7.4% in England.[20] Well-functioning transport networks are clearly critical for logistics businesses. The construction of the Woodside Link Road (connecting Houghton Regis and the Dunstable industrial estates to the new M1 Junction 11a) along with the construction of the A5-M1 link for

[17] Department for Business, Energy & Industrial Strategy: Industrial Strategy – Building a Britain fit for the future, November 2017
[18] Strategic Economic Plan – Where Innovation Fuels Growth, SEMLEP, November 2017, https://www.semlep.com/strategic-economic-plan/ accessed 15 May 2018
[19] SEMLEP, Local Industrial Strategy – Sectors at the centre of the Corridor, https://www.semlep.com/modules/downloads/download.php?file_name=1086, 11 July 2018, accessed 10 September 2018
[20] From BRES statistics

improved travel to Leighton Buzzard and Aylesbury, are exemplars of the positive impact that such connections can have for local businesses (they have already led to more than 50 new deals for industrial and distribution units across Dunstable, Houghton Regis and Leighton Buzzard).[21]

Luton is identified by key business clusters of technology, airport and aerospace, automotive and engineering, and creative industries. The creative industries cluster includes some key businesses such as Andrews UK and A Thin Place. The technology cluster includes businesses such as MTL Instruments, Jaltek, Anritsu EMEA Limited and others. The airport and aerospace cluster is based on the access to Luton International Airport, accessed from the A1081 at M1 Junction 10a. It includes businesses such as EasyJet, GKN Aerospace Transparency Systems, Harrods Aviation and others. The automotive and engineering cluster has historically been very important. While currently declining it is still an important sector and includes businesses such as General Motors, Hayward Tyler and others, with similar firms elsewhere in the South East Midlands accessed via the M1 including Motorsport Valley, Nissan at Cranfield and the Millbrook Proving Ground. It is important to see the Luton's technology and automotive industries as very much integral to the wider Cambridge-Milton Keynes-Oxford corridor seen by SEMLEP and Government as pivotal to economic growth.

Luton Borough Council's Local Plan[22] notes that the Borough's existing 1.4 million square metres stock of employment land (78% industrial and 22% Office) is significantly ageing and needs renewal and replacement. The replacement or renewal of industrial land is happening but lags behind the rest of the region especially for completed new modern office space. Uptake of land has been modest due to the subdued economic situation, although local demand remains healthy. Vacancy levels are about average for offices but low for industrial space, reflecting higher demand even for poorer quality accommodation (e.g. for local, small scale businesses, start-ups, and professional business services) because of its affordability and lack of alternative space.

3.8.2 Sectoral growth

The SEMLEP Strategic Economic Plan states that there has been a 25% growth in employment in the high performance technology sector, as well as a 10% increase in Creative & Cultural, and a 7% increase in Logistics over the same time period.

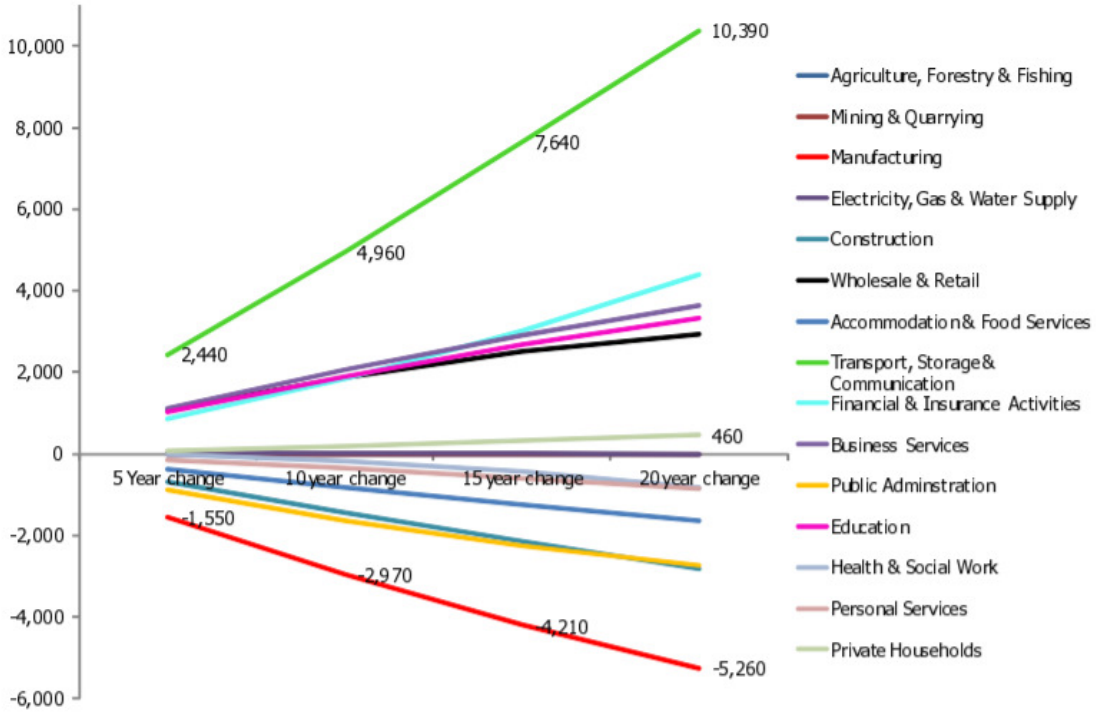
The table below indicates that the number of new business starts in Central Bedfordshire and Luton have risen across the five-year period from 2012-2016 inclusive, indicating an increased recognition of the opportunities the region offers to entrepreneurs and new businesses. Data from 2017 is not currently available[23].

Local authority	2012	2013	2014	2015	2016
Central Bedfordshire	1150	1540	1550	1585	4865
Luton	835	1035	1140	1425	4440

Workforce forecasts by sector (see Figure 3.4) show that major jobs 'gains' are expected in transport, storage and communication. This reflects the strategic location and transport links, as well as airport growth. Additional notable growth is expected in Financial and Insurance activities and in business services. Notable jobs reductions are expected in the manufacturing sector.

[21] Strategic Economic Plan - South East Midlands: Where Innovation Fuels Growth SEMLEP, November 2017, https://www.semlep.com/strategic-economic-plan/ accessed 15 May 2018
[22] https://www.luton.gov.uk/Environment/Lists/LutonDocuments/PDF/Local%20Plan/adoption/Luton-Local-Plan-2011-2031-November-2017.pdf, p52
[23] Source: South East Midlands Local Enterprise Partnership (SEMLEP)

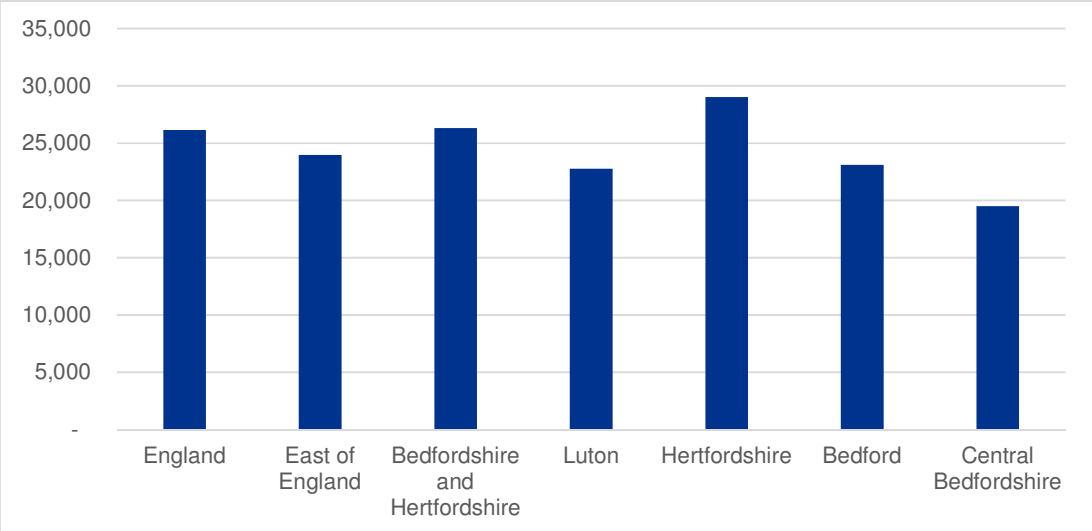
Figure 3.4: Luton's Sectoral Workforce Forecast[24]



3.8.3 Economic performance and productivity

Gross Value Added (GVA) measures the contribution to the economy of each individual producer, industry or sector in the UK. It is used in the estimation of gross domestic product (GDP), a key indicator of the state of the overall economy. Data for GVA per filled job can be used as a measure of productivity. Figure 3.5 shows local performance compared to the regional and national average.

Figure 3.5: GVA (£) per head by region and local authority[25]



[24] Source: TBR, Luton Skills and Employability Issues, May 2013
[25] Source: ONS

Productivity in the study area is fairly close to the national average. Hertfordshire is above average, Luton and Central Bedfordshire are below average.

3.8.4 Business perception

SEMLEP's business surveys from 2015 and 2017 are a useful source of data to understand the barriers to increasing growth and productivity and whether these have changed. The overall view of business in 2017 across the South East Midlands is that that their local area is a good place to do business (two-thirds of respondents), presenting a consistent picture from previous surveys in 2015. The datasets also provide further disaggregation at a local authority level, enabling an understanding of key factors currently inhibiting growth.

Central Bedfordshire as a whole is well regarded in terms of infrastructure. Ratings on specific aspects were generally higher than seen across the wider South East Midlands, and there have been several notable improvements since 2015. Infrastructure dominates the top five rated aspects of the area (airport access – i.e. proximity to Luton, rail network, walking / cycling routes and ease of transportation of freight), which may reflect the substantial investment Central Bedfordshire has undertaken in the transport network over recent years, and provides a strong basis for further growth.

Table 3.6 below illustrates the constraints to business growth in Central Bedfordshire and Luton compared to the wider South East Midlands area. Data for Luton in 2017 is not available.

Table 3.6: Factors cited as constraints to business growth[26] [27]

Factor	Central Bedfordshire		Luton		SEMLEP	
	2015	2017	2015	2017	2015	2017
General Economic Climate	47%	27%	50%	N/A	42%	31%
Attracting and retaining customers	36%	11%	33%	N/A	34%	25%
Lack of skilled labour	24%	31%	34%	N/A	27%	33%
Constraints with premises or location	24%	13%	26%	N/A	23%	27%
Transport Costs	30%	3%	34%	N/A	26%	6%
High cost of labour	25%	7%	29%	N/A	24%	9%
Transport Infrastructure	18%	4%	14%	N/A	15%	6%
Access to Public Transport	11%	2%	9%	N/A	12%	2%

It is notable that the predominant barriers for Central Bedfordshire have changed from multiple issues to a focus on the general economic climate and a lack of skilled labour, partly a consequence of the vote to leave the European Union, but also the perception that these other issues are not as prevalent as elsewhere. Compared to the South East Midlands as a whole, fewer businesses in Central Bedfordshire mentioned issues with their premises or location (13% vs. 27%), increasing competition (13% vs. 25%) or attracting and retaining customers (11% vs. 21%).

3.8.5 Economic inactivity, unemployment and deprivation

The following graphs illustrate the change in economic inactivity and unemployment in the study area compared to England as a whole.

[26] Source: SEMLEP Business Survey 2015 - https://www.semlep.com/modules/downloads/download.php?file_name=289
[27] SEMLEP Business Survey 2017 including CBC specific analyses - https://www.semlep.com/modules/downloads/download.php?file_name=898; http://www.centralbedfordshire.gov.uk/Images/business-survey-2017_tcm3-27558.pdf accessed 18 May 2018

Figure 3.6: Economic Inactive Population by local authority area and England[28]

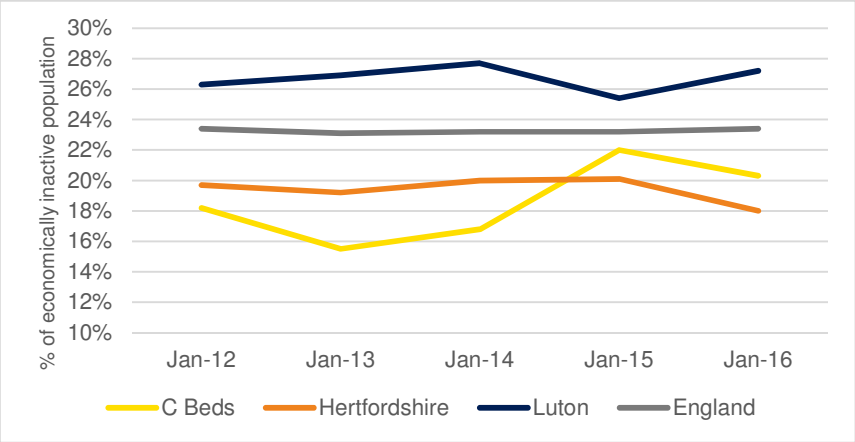


Figure 3.6 shows that the number of economically inactive people in Luton has been stable but higher than the national rate, 27.2% compared with 22.2%, illustrating that labour force participation is relatively low. There has been more variability within Central Bedfordshire although participation is greater than Luton and England as a whole.

Figure 3.7: Unemployment rate by local authority area and England[29]

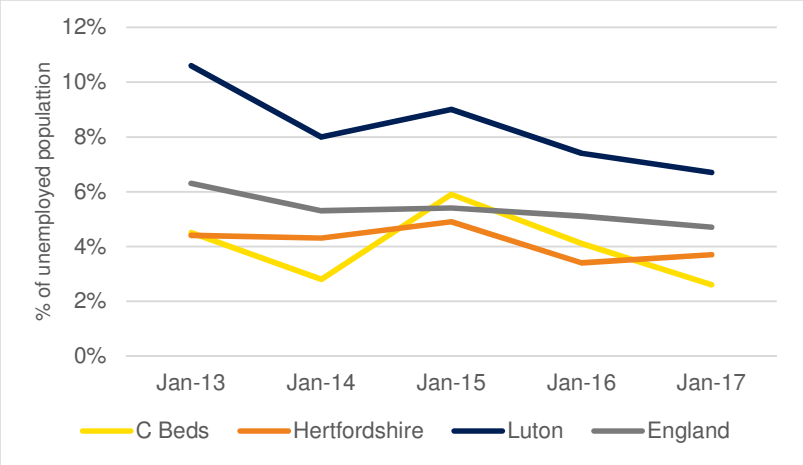
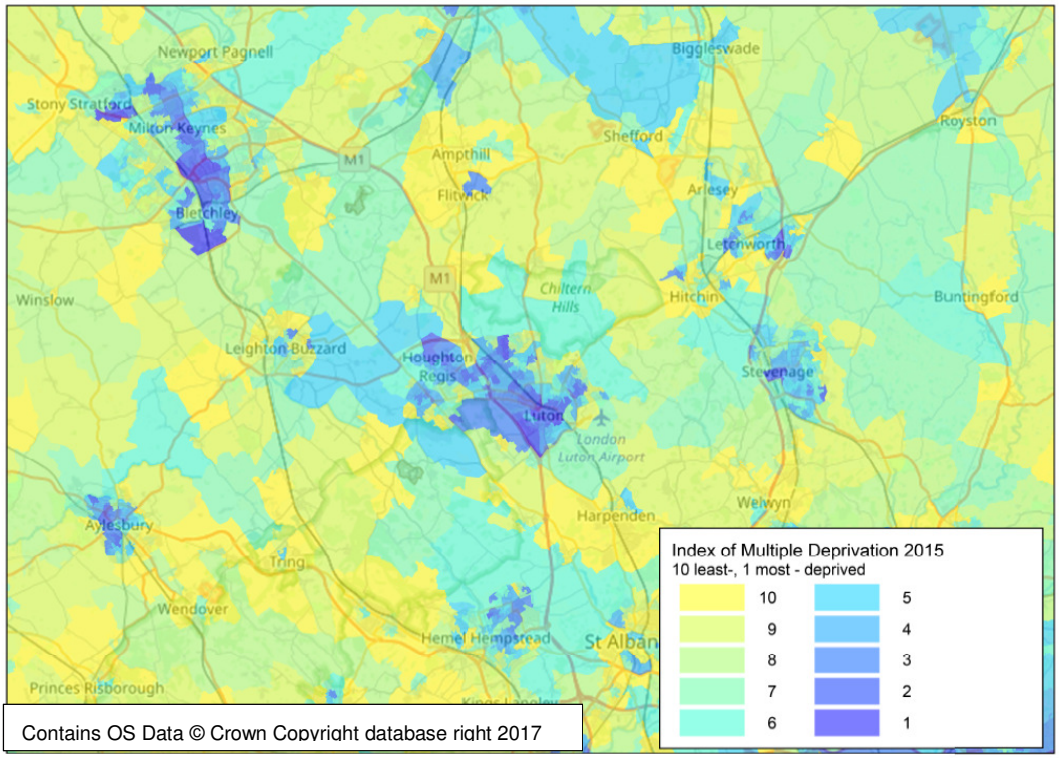


Figure 3.7 shows local unemployment rates in comparison to the national average. The unemployment rate in Luton is 6.3% and above the national average of 4.9%, albeit that there has been a steady improvement in recent years[30]. The unemployment claimant count rate is equal to the national average at 1.9%. Central Bedfordshire for the most part has performed better than the national average.

The geographic variation in deprivation in the study area is shown below in Figure 3.8.

[28] Source: ONS
[29] Source: ONS
[30] Source: Luton Labour Market Headlines – August 2017, Business Intelligence

Figure 3.8: Deprivation levels as measured by Index of Multiple Deprivation (2015)[31]



This demonstrates that Luton is a relatively deprived area, particularly with respect to barriers to housing and services and crime, where it is ranked the 15th and 24th most deprived local authority (out of 326), respectively[32]. Overall Luton is ranked as the 59th most deprived Local Authority, a worsening from 69th in 2010. To the south of the proposed M1-A6 scheme, the Marsh Farm Estate is a specific example of deprivation. It is characterised by severe problems of multiple deprivation, including unemployment, poverty, lack of skills, poor educational achievement, and poor health. Developed in the late 1960s and early 1970s, it is designed upon cul-de-sacs arrangement of properties, the segregation of vehicular and pedestrian routes and has oversized wide roads flanked by underused lawn areas. Luton Borough Council has started the transformation of the Marsh Farm area, demolishing high rise flats and the Purley Centre and replacing these with new homes and planning for new retail provision.[33]

There are also pockets of deprivation in Houghton Regis and to a lesser extent Dunstable within neighbouring Central Bedfordshire.

3.8.6 Growth opportunities and development proposals in Central Bedfordshire and Luton

Central Bedfordshire's new draft Local Plan is planning for up to 20,000 new homes and 24,000 jobs over the next 20 years. This is in addition to the 23,000 homes with planning permission or already allocated. Housing growth is planned through:

- creating one new village to the east of Biggleswade
- creating up to four new villages in Marston Moretaine
- **a sustainable new extension north of Luton (see below)**
- a sustainable new extension east of Arlesey

[31] Source: Jacobs analysis of ONS data
[32] Source: 2015 indices of multiple deprivation - Luton
[33] https://placesprojects.engie.co.uk/transforming-marsh-farm

- small to medium growth in existing towns villages, but only where services can support it.[34]

This housing growth will be sustained by the arrival of new industries and businesses to the area, as well as job creation through population growth requiring increased retail and local services.

The Strategic Allocations for the North of Luton and Sundon Rail Freight Interchange (RFI) are two specific examples of sustainable new developments within the study area aimed at meeting housing and employment needs with each having a strong relationship to the M1-A6 Link scheme. **Policy SA1 - Land North of Luton** sets out an allocation that will host:

- 4,000 homes across market and affordable tenures,
- an integrated health and care hub,
- a mix of retail, day nurseries, early years, school and sixth form facilities,
- indoor and outdoor sport and leisure facilities, including open space, pavilions and allotments
- public transport routes through the development that link with Leagrave railway station and Luton town centre
- pedestrian and cycle links from the new and existing neighbourhoods, including a cycleway connection to route 6 of the National Cycleway Network
- green space linking existing parks, woodland and open space and existing public rights of way, landscaping and noise reduction measures
- 20 hectares of employment land will be to the west of the site centred around M1 junction 11a and will include offices, general industrial businesses, storage and distribution.

Key Observations

- *The Local Plan (Policy SA1, para. 2) makes clear that a major new east-west route from the new Junction 11A of the M1 to the A6, i.e. the subject of this Business Case is critical to the delivery of this site's development and the realisation of the benefits that this development brings to the local and regional economy.*
- *"It is critical that development of this site is supported by a comprehensive scheme of highway improvements to mitigate the impacts of the development including an appropriately designed a routed new road to link the A6-M1 Junction 11a, the development shall provide the land and commensurate financial contributions towards its delivery."*

Policy SE1 M1 Junction 11a – Sundon Rail Freight Interchange (RFI) sets out an allocation adjacent to the Midland Mainline that:

- Provides an intermodal rail facility on approximately 5 hectares of the site
- Provides for approximately 40 hectares of new employment land accommodating B8 warehousing and distribution uses
- Is connected by an appropriate new strategic road link between Sundon Park Road and M1 Junction 11a (i.e. the M1-A6 Link)
- Enhances and manages Sundon Chalk Pits CWS and Sundon Chalk Quarry SSSI to improve their ecological value and contributes to the Green Infrastructure network
- Preserves and enhances heritage assets within and around the sit
- Provides opportunities for sustainable transport links.

In addition to these new allocations, planning permission has already been granted for up to 7,000 homes and 40 hectares of employment land across two sites associated with the **Houghton Regis North Strategic Allocation**, initially facilitated by the A5-M1 Strategic Link Road, M1 Junction 11a and Woodside Link Road opened in 2017.

[34] http://www.centralbedfordshire.gov.uk/planning/policy/local-plan/pre-submission.aspx

Across these strategic allocations it is anticipated that part of the development will allow for larger sites for business currently growth constrained by the sites they occupy, whether in Luton, Central Bedfordshire or within the wider South East Midlands area. Backfilling or renewal would then occur in sites made vacant as businesses move to the new development and either new or other growing businesses take the now vacant lots or landowners renew and replace their stock fit for new and growing businesses. This increase in size for business will come with associated agglomeration economies, as will the improved business to business interactions afforded by the new commercial land sites.

Finally, the logistics and supply chain sector are a significant part of the economy in the Luton area, the introduction of a new, dedicated, rail freight terminal will have positive agglomeration impacts for businesses within the logistics and supply chain sector, including both bringing firms to these new sites, as well as fostering take-up on other allocations and existing sites in the Luton-Dunstable-Houghton Regis conurbation.

Luton Borough Council's Adopted Local Plan includes **Policy LLP12 - a Strategic Allocation at Marsh Farm**[35] to the south of North of Luton Strategic Allocation, involving the redevelopment and improvement of this previously developed site.

Extensive regeneration has improved the central part of the neighbourhood, which has been provided with a brand new library and theatre in a state of the art new school, Lea Manor, and new community centre and facilities at Futures House. The area benefits from existing cycling routes connecting local places and new amenity spaces with opportunities to link up with a network of Green Infrastructure extending north to the wider open countryside via the North of Luton Strategic Allocation.

The Luton Borough Local Plan does not anticipate a significant net increase in dwellings, rather the focus is on developing a safer, more vibrant area that is well integrated and connected with Luton, the north of Luton and the countryside.

3.8.7 Summary

Key Observations

- *There has been a substantial increase in business start-up activity in Luton and Central Bedfordshire since 2012. This alongside improving business perceptions suggest that the area is a good place for firms to start and grow their business.*
- *The age of employment land is noted as a constraint. The renewal and replacement of it has lagged behind the rest of the region.*
- *The area's productivity remains below the national average, with access to skilled labour a key constraint to growth. As noted previously the provision of new homes and employment space in tandem with existing skills initiatives will help contribute to closing that gap.*
- *The north of Luton and to a lesser extent Houghton Regis is currently relatively deprived, and so it is expected that journey time improvements from the M1-A6 Link scheme will benefit this socio-economic group disproportionately well. Similarly, it is anticipated that benefits associated with reductions in congestion (beyond time savings) – improvements in noise and air quality etc. – will also benefit this socio-economic group.*
- *Investment in transport infrastructure is set out as essential to deliver the strategic allocations at the North of Luton and M1 Junction 11a – Sundon Rail Freight Interchange. In addition to the road, proposed walking, cycling and public transport links will integrate these employment, education, leisure and healthcare opportunities with the wider Luton urban area to ensure that the benefits are widespread, helping to make a positive contribution to existing regeneration initiatives within the Marsh Farm area of Luton.*

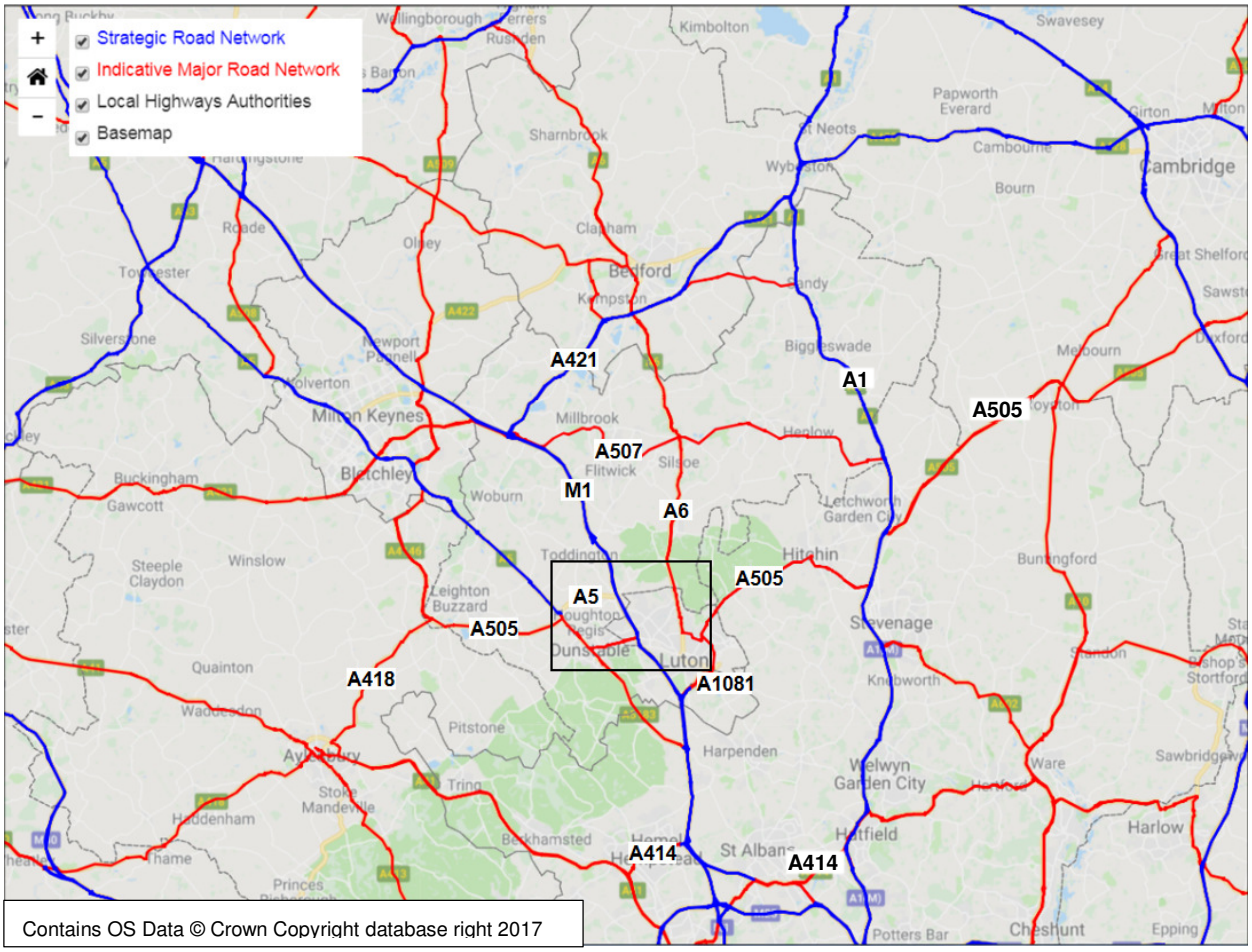
[35] https://www.luton.gov.uk/Environment/Lists/LutonDocuments/PDF/Local%20Plan/adoption/Luton-Local-Plan-2011-2031-November-2017.pdf, p47

3.9 Transport and movement context

3.9.1 Strategic and major roads

The DfT is currently reviewing its consultation on the concept and initial major road network for England[36]. This has built on previous work by the Rees Jeffrey Road Fund and emerging Sub-National Transport Bodies that England's Economically Important Roads include more than just those managed by Highways England. The draft network is illustrated in Figure 3.9, which helps to provide a useful starting point for understanding north-south and east-west movement in the study area.

Figure 3.9: The Strategic Road Network and Major Road Network in the Study Area



3.9.2 Strategic north-south movement

Movement in the study area has historically been characterised by strong north-south links by road, facilitated by the M1, the A5 and the A6.

The M1 is a north-south arterial route between London and Leeds, connecting Luton with these destinations as well as major centres of Watford, Milton Keynes, Northampton, Leicester, Derby, Nottingham and Sheffield. The route runs along the western edge of Luton, and the town can be accessed from the M1 in three places via Junction 10 to the south (for the A1081 and indirect access to the A505 to the east), new Junction 11A to the north (for the A5 and A5505 and indirect access to the B579), and Junction 11 (for the A505) in between.

[36] https://www.gov.uk/government/consultations/proposals-for-the-creation-of-a-major-road-network

The A5 is a primary route and facilitates north-south strategic travel between the M1, Dunstable and Milton Keynes. It is operated and managed by Highways England and comprises a mix of single and dual carriageway sections. The A5 provides network resilience complementing the M1, as well as direct access to parts of Milton Keynes away from the motorway. The A5 includes a new section between the A505 and M1 opened in 2017 known as the Dunstable Northern Bypass. This has allowed the old A5 to be passed to CBC for its operation and management and its reclassification as a secondary A road – namely the A5183. This will facilitate town centre regeneration and public realm and has also allowed the Authority alongside its related Woodside Link scheme to implement a wide ranging lorry management scheme on the local road network.

The A6 is a primary route for inter-urban travel within Bedfordshire between the key towns of Luton and Bedford as well as the A421 Expressway. Outside of the urban areas it is primarily rural with a mix of single and dual carriageway including bypasses of major villages. The route, known as Barton Road whilst in Luton, runs from the centre of the town, in the form of a single carriageway road. Whilst in the urban area of Luton, the road operates at 30mph, which increases to national speed limit (60mph) once it moves north into a rural setting.

3.9.3 Strategic east-west movement

East-west connectivity is less well developed for vehicles and all other modes, with a large reliance on the private car for most trips. Investment has been made on the Highways England Network including the dualling of the A421 between the A1 and M1 to the south of Bedford and the A5-M1 Link north of Dunstable. However significant quality and connectivity gaps remain for today's needs, let alone potential growth in the wider Oxford-Milton Keynes – Cambridge arc, resulting in extensive work by the National Infrastructure Commission and Highways England's current study on the Oxford-Cambridge Expressway.

As noted by the Major Road Network work, there is a need to consider more than just the strategic roads managed by Highways England as integral to the success of local and regional economies. Other than the A421, there is a lack strategic east-west primary routes to link the M1-A6-A1 in an areas stretching from south of Bedford (A421) to the south of St. Albans (A414).

Within the study area the A505 is a potentially strategic important east-west route (and identified as a draft part of the MRN and a priority for England's Economic Heartland emerging transport strategy[37]), linking various communities and facilitating connections to Aylesbury (sign posted from M1 Junction 11a) and then Oxford (via the A418) in the west and Hitchin and neighbouring Hertfordshire towns, Cambridge and East Anglia in the east (via the M11 and A11). It varies between primary and secondary 'A' road function along its length with variations in the number of lanes, public transport provision and speed limit as it moves between rural and urban areas.

More locally, in the west the A505 directly connects Leighton Buzzard with Dunstable, Houghton Regis, the A5 and M1 at Junction 11a. This section is a primary route bypassing major settlements. Travel into Luton or to settlements to the east is then through the A505 in Dunstable or via the A5-M1 Link, a short hop on the M1 to Junction 10 or 10a to travel through Luton's urban area. To the east of Luton, the A505 is predominantly a rural dual carriageway although signed as a secondary A road with further constraints within the urban area of Hitchin for onward access to the A1(M), Stevenage, Letchworth Garden City and Baldock.

The A507 is also identified as a potential component of the MRN. It too is signed as a secondary A road, linking the M1 and A421 at Junction 13 (and Junction 12 via the A5120 spur through Flitwick), the A6 at Clophill and the A1/A1(M) at Stotfold to the north of Letchworth Garden City and Baldock. It is exclusively single carriageway. East of the A6, the route has been improved steadily over recent decades bypassing the majority of principal settlements. However west of the A6, motorway traffic either must travel through Flitwick town centre on the A5120 or the edge of Ampthill to reach the M1 at Junction 13, which is a circuitous route for traffic from the south or south-west of the study area.

As a result of the lack of a dedicated east-west corridor to connect the M1 and A6, east-west movement has long been facilitated through the least-worst routes through the urban areas of Dunstable and Luton or unclassified roads between the B579 and Streatley. The use of these routes acts as a barrier to movement by walking and cycling as well as wider economic growth. It does not help provide satisfactory environmental

[37] http://www.englandseconomicheartland.com/Pages/transport-dynamic-page.aspx#expand-Roadpriorities, accessed 19 May 2018

conditions and is likely to contribute to the deprivation noted in Section 3.8.5. Further discussion on local roads characterised by this pattern of movement is presented below.

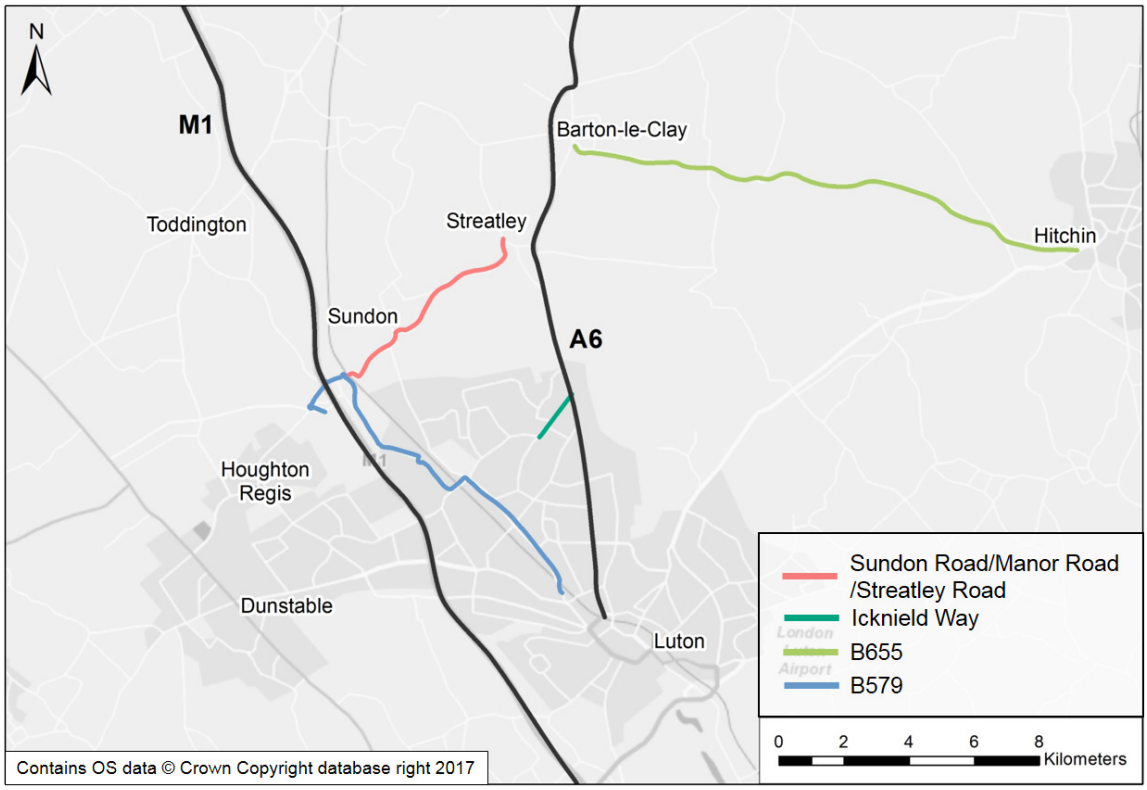
The need to address east-west connectivity to better link key settlements and areas of growth to the radial routes and each other, and ameliorate conditions for those resident in urban or rural areas has been long considered. This is reflected in plans for East-West Rail, the Oxford-Milton Keynes-Cambridge Expressway, and the recently opened A5-M1 Link. These examples are testament to the importance that local, regional and national agencies have placed on the requirement to enhance east-west connectivity in the study area.

3.9.4 Local roads

This section outlines the characteristics, suitability and desirability of local roads for making east-west movements in the study area, including the following mapped in Figure 3.10:

- Manor Road/Streatley Road; Icknield Way; B655; and B579 Toddington Road.

Figure 3.10: East-West connectivity via local roads



Sundon Road/Manor Road/Streatley Road extends between the M1 in the west and Streatley (adjacent to the A6) on a southwest-northeast trajectory, via Lower Sundon. The road is a single carriageway national speed limit road, situated in rural context north of Luton. Speed reduces through settlements and junctions.

Whilst the road is known to be used as an east-west route given there are limited alternatives the form and function of the road is not a particularly direct one or suitable for through traffic, including the HGVs that are known to use it (Figure 3.11). The route includes a narrow bridge over the Midland Mainline and safety issues involving HGVs including fatalities are understood to be a problem (see Section 3.10.7).

Figure 3.11: HGVs using Sundon Road/Manor Road/Streatley Road strategically (© Google 2018).

It is understood that it is Central Bedfordshire Council's intention to use the M1-A6 Link as the opportunity to then implement a wide ranging area wide lorry ban on this route and others, similar to what it has implemented in the Houghton Regis area following the opening of the A5-M1 Link to ensure that HGVs use the routes appropriate to them.[38]

Icknield Way facilitates various east-west movements through the north of Luton, that take between 12 and 22 minutes, dependent on traffic conditions, to travel 5.5km. Icknield Way originates at its junction with the A6, and extends approximately 1km in a southwest direction towards the M1. From this point, there are three routes used to access the M1 at Junction 11; via Leagrave, via Limbury or via Blundell Road/Waller Avenue. These routes serve a relatively indirect east-west connection between the M1 and the A6 and are subject to 30mph speed limits, local traffic and congestion as a result of the surrounding urban area.

The B655 is an alternative east-west connection from east of the A6 to Hitchin, with Barton and Hitchin the destination sign posted at each end of the road. This single carriageway road includes a series of hills and bends with extensive overtaking restrictions given poor visibility and alignment. It also passes through the villages of Hexdon and Pegsdon where speed limits apply.

The B579 links the M1 with Central Luton from Junction 11A to the A505. Connectivity to the A6 from the A505 east is facilitated via the local highway network (Bramingham Road/Icknield Way or Waller Avenue/Birdsfoot Lane or Montrose Avenue). The B579 acts as part of a link between the M1 and the A6. The use of the road for this purpose, however, is unsuitable, where traffic east of the A505 is distributed through the local highway network in central Luton and where through traffic likely contributes to congestion and associated impacts experienced on these routes.

3.9.5 Further HGV specific issues

The Midland Mainline is also a barrier to east-west movement by HGVs. There are a number of height restrictions in the Luton area because of low bridges which provides an added complication for lorry routeing both within the Luton urban area and for east-west travel. Extracts from the Freight Journey Planner[39] show known height restrictions to include the following with examples illustrated in Figure 3.12:

- 4.6m to 4.8m on the A6 New Bedford Road depending on direction of travel,
- 4.2m on the B579 Leagrave Road north of the A505
- 3.6m to 4.2m for various east-west roads in the Leagrave area that connect Sundon Park Road to the B579 and M1 Junction 11.

[38] http://www.centralbedfordshire.gov.uk/transport/strategy/weight-limits.aspx, accessed 19 May 2018
[39] Source: http://www.freightjourneyplanner.co.uk/ accessed 19 May 2018

Figure 3.12: Principal height restrictions associated with the Midland Mainline in the Luton Urban Area (© Google 2018)

Over height vehicles (which in effect means many vehicles over 7.5 tonnes given their trailer heights) have only one suitable route in the urban area between M1 Junction 11 and Sundon Park Road or the A6 for northward travel, via Waller Avenue, Leagrave Road and Icknield Way or Montrose Avenue. This is a signed HGV route to avoid unwanted issues at the low height railway bridges, but is not a classified road for other purposes demonstrating the compromise made.

East-west HGV traffic for the A505 to Hitchin can use overbridges south of Luton town centre on either the A505 or A1081 with a circuitous route to the A6 east of Luton town centre possible.

To the north of Luton, Sundon Road / Manor Road provides a route over the Midland Mainline connecting the B579 and the M1 via the Woodside Link with the A6, but as noted this road is also undesirable for HGV use, yet is well used as the data in Section 3.10.6 will show.

Key Observations

- *The study area is characterised by strong north-south links via road, facilitated by the M1, A5 and A6, and historically these have shaped movement and the economy;*
- *As noted earlier the South East Midlands and Hertfordshire is characterised by a polycentric geography of medium sized settlements. For these agglomeration economies to be more productive these need both east-west as well as north-south connectivity. This concept is supported by the National Infrastructure Commission work and early work by England's Economic Heartland on its transport strategy. The DfT's consultation on the MRN has also indicated that there is a case to be made for east-west routes in the study area to play a vital role for movement in the study area.*
- *The quality and standard of existing east-west routes is not high. It is useful to consider the network as a 'ladder' with strong pillars provided by the A5, M1, A6 and A1, similarly strong east-west movement via the A421 and A414 north and south of the study area supported with weaker or non-existent links in between often making use of unsuitable roads through urban areas or the countryside.*
- *The Midland Mainline acts as a barrier to HGV movement within the Luton urban area and for general east-west traffic to/from HGV intensive industries such as those accessed from Sundon Park Road and the B579 Luton Road. This results in few feasible routes and contributes to the use of undesirable routes through the urban area, Sundon and Streatley.*

3.9.6 Bus network

North-South connectivity

Key bus services operating from Luton on a north-south trajectory are detailed in Table 3.7. This includes medium distance and local buses.

Table 3.7 Frequency of North-South Buses operating from Luton

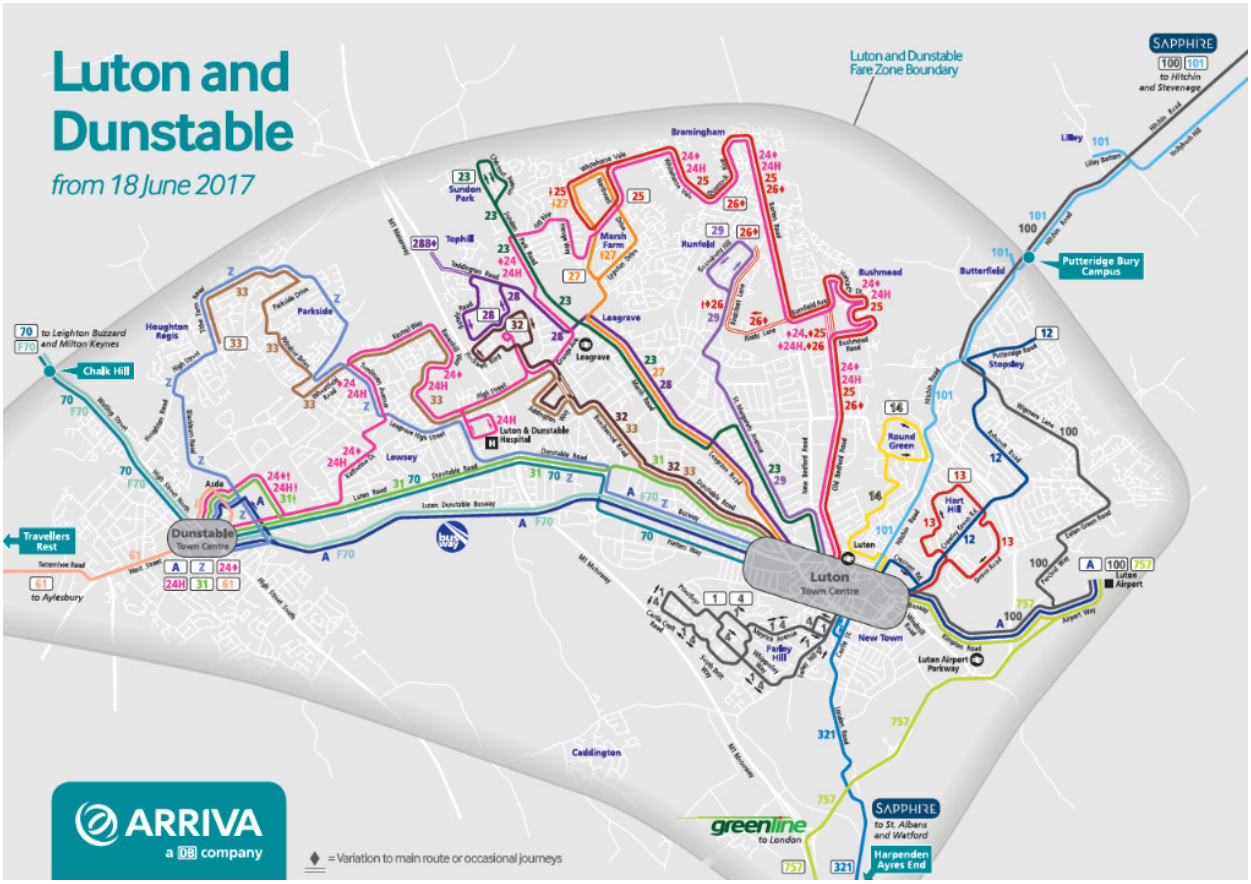
No.	Route	Operator	Monday-Friday Frequency		Saturday Frequency	Sunday / Bank Holiday Frequency
			Peak	Off-Peak		
Medium distance buses to Clophill and Shefford (North)						
41	Luton Galaxy - Silsoe - Clophill	GP	Two	N/A	N/A	N/A
Medium distance buses to Hemel Hempstead, Hatfield, St Albans and London (South)						
46	Luton Park Square - Hemel Hempstead	Centrebus	55m-1h5m	1h	1h	N/A
366	Luton Church Street - Harpenden - Welwyn - Hatfield	Centrebus	1h	1h	N/A	N/A
321	Luton Station - Harpenden - St Albans - Watford	Arriva	10-20m	20m	20-40m	1h
610	Luton Station - Harpenden - Enfield Town	UNO	1h	1h	N/A	N/A
755	Leagrave - Luton Station - Central London	Green Line	30m	N/A	N/A	N/A
757	Luton Station - Luton Airport - Central London	Green Line	15m	30m	30m	30m
Local buses via the A6 (North)						
10/ 10A	Luton Town Centre - Marsh Farm	Centrebus	11-15m	10m	10-12m	20m
25	Luton Silver Street - Marsh Farm	Arriva	N/A	30m	25-30m	N/A
26	Luton Silver Street - Warden Hill	Arriva	5-20m	N/A	N/A	N/A
78	Luton station – Bushmead – Streatley – Upper Sundon	GP	One (AM only)	One	Two	N/A
Local buses via the Local Highway Network						
3	Luton - Cutenhoe Road - Capability Green (circular)	GP	20-40m	20-40m	20-40m	N/A
30	Luton - Cutenhoe Road - Capability Green (circular)	GP	25m-1h15	N/A	N/A	N/A
23	Luton Town Centre - Sundon Park	Arriva	1h	1h	1h	N/A
27	Luton Church Street - Marsh Farm	Arriva	10m	10m	15m	20m
28	Luton Silver Street - Leagrave - Hockwell	Arriva	15m	15m	20m	N/A

Medium distance buses operating from Luton, to locations north and south connect Clophill and Shefford in the north, and Hemel Hempstead, Hatfield, St Albans and London in the south. Buses that facilitate connection with destinations north of Luton via the A6 (Clophill and Shefford), operate infrequently throughout the week and not at all on Sundays and Bank Holidays. On the other hand, most bus services that operate south of Luton, operate only on an hourly basis Monday to Saturday. Services 321 and 757, are the exception to this, and operate more frequently throughout the week as well as on Sundays/Bank Holidays to facilitate London Luton Airport transfers with London (Table 3.7).

Luton is served by several local bus services either via the A6 or the local highway network (Table 3.7): Five services operate via the A6, to Marsh Farm, Sundon and Warden Hill; and five operate via the local highway network. In general, however, there is a limited number of buses operating north-south in the local vicinity of Luton on Sundays/Bank Holidays. Only links to Marsh Farm are maintained on a Sunday/Bank Holiday.

Local north-south buses operated by Arriva, one of the largest bus service providers in Luton, are mapped in Figure 3.13.

Figure 3.13: Arriva Map of Bus Services within Luton and Dunstable[40]



In addition, Grant Palmer operates two daily services to Streatley and Upper Sundon to the north of the proposed M1-A6 link. These operate via the A6 rather than Sundon Park Road.

East-West connectivity

The bus services that facilitate east-west connectivity from Luton are detailed in Table 3.8. This includes medium distance buses to Stevenage in the east and Leighton Buzzard and Milton Keynes in the west, as well as local buses to Wigmore and Stopsley in the east, Dunstable and Houghton Regis in the west and the destinations within the local highway network.

Table 3.8 East-West buses operating from Luton

No.	Route	Operator	Monday-Friday Frequency		Saturday Frequency	Sunday/ Bank Holiday Frequency
			Peak	Off-Peak		
Medium distance buses to Stevenage (East)						
100	Luton Station - Stopsley - Hitchin - Stevenage	Arriva	35-55m	30m	40m	1h
101	Luton Station - Wigmore - Hitchin - Stevenage	Arriva	20-35m	30m	40m	1h

[40] Luton and Dunstable Bus Map, Arriva, 2017 (Accessed: 04th April 2018)

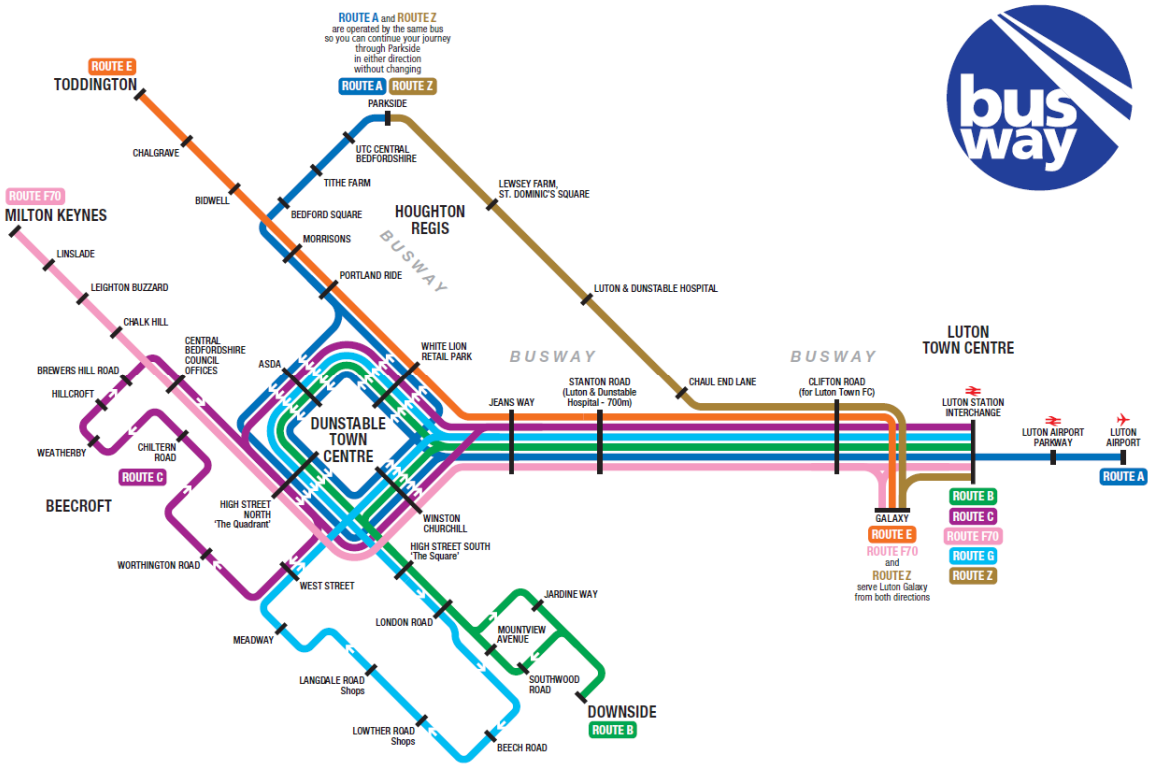
102	Luton Church St - Lilley - Hitchin – Stevenage	Arriva	1h	1h	1h	N/A
Medium distance buses to Leighton Buzzard and Milton Keynes (West)						
70	Luton Station - Dunstable - Leighton Buzzard - Milton Keynes	Arriva	40m-1h15	1h	1h	2h
F70	Luton Station - Dunstable - Leighton Buzzard - Milton Keynes (via Busway)	Arriva	50m-1h10	1h	1h	N/A
Local buses to Wigmore and Stopsley (East)						
12	Luton Church St - Stopsley	Arriva	20m	10m	20m	20m
19	Luton - Wigmore - Stopsley	Centrebus	20-22m	10m	15m	N/A
17	Luton Church St - Stopsley - Wigmore	Centrebus	30m	30m	30m	N/A
17A	Luton Church St - Stopsley - Wigmore	Centrebus	20-25m	30m	30m	N/A
Local buses to Dunstable and Houghton Regis (West)						
24H	Luton Silver Street - Marsh Farm – Dunstable	Arriva	Twice	1h	1h	N/A
31	Church Street - L&D Hospital - Dunstable Town Centre	Arriva	12-20m	15m	15-30m	30m
33	Luton Church St - Leagrave - Houghton Regis	Arriva	30m	30m	30m	N/A
231	Luton Park Square - Woodside - Dunstable	Centrebus	25-55m	1h	1h	N/A
A	Luton Airport - Luton Station – Dunstable (via Busway)	Arriva	15m	15m	20m	20m
AZ	Luton Station - L&D Hospital - Houghton Regis - Dunstable (via Busway)	Centrebus	30-45m	30m	30m	N/A
B	Luton Station - Dunstable Town Centre - Downside (via Busway)	Centrebus	30m	30m	30m	30m
C	Luton Station - Dunstable Town Centre - Beecroft (via Busway)	GP	20-40m	30m	30m	N/A
CX	Luton Station - Dunstable Town Centre (via Busway)	GP	30-35m	30m	30m	N/A
E	Luton Station - Dunstable Town Centre - Toddington (via Busway)	Centrebus	1h	1h	N/A	N/A
Z	Luton Station - Houghton Regis - Dunstable Town Centre (via Busway)	Arriva	15m	15m	15m	20m
Buses via the Local Highway Network						
1	Luton - Farley Hill	Arriva	20m	20m	20m	1h
4	Luton - Farley Hill	Arriva	20m	20m	20m	1h
13	Luton Church St - Crawley Green Road	Arriva	1h	1h	1h	N/A
14	Luton Church St - Round Green	Arriva	45m	1h	20m	N/A
29	Luton Silver St - Biscot - Runfold	Arriva	16-20m	15m	20m	1h
32	Luton Church St - Leagrave - Hockwell	Arriva	30m	30m	30m	1h

East-west bus services operate to urban areas in the wider region, including Leighton Buzzard, Milton Keynes, Hitchin, and Stevenage. Connections from Luton to Hitchin and Stevenage are more frequent than from Luton to Leighton Buzzard and Milton Keynes.

There are five different medium distance services that operate between Luton and Stevenage. Those via Hitchin operate every 20 minutes during peak hours, and hourly on weekends. Bus routes via Harpenden are less frequent and do not operate on Sundays. Connectivity via bus to major destinations west of Luton (Leighton Buzzard, Milton Keynes) is also relatively poor, operating on an hourly to two-hourly basis Monday to Saturday. In addition, only one service operates on a Sunday/Bank Holiday, with a frequency of every two hours.

There is good local east-west connectivity via bus between Dunstable, Houghton Regis and Luton following the investment in a Guided Busway (Figure 3.14). LBC and CBC recently delivered this scheme between Luton, Dunstable and Houghton Regis, which currently facilitates seven different bus services (Figure 3-12). The scheme was delivered in September 2013, for £89.2 million[41]. Services between Dunstable, Houghton Regis and Luton operate frequently Monday to Saturday, although more than half of these services do not operate on a Sunday/Bank Holiday (Table 3.8).

Figure 3.14 Luton-Dunstable Bus Way services[42]



Connectivity throughout the week to local destinations east of Luton, is relatively poor. Whilst frequency is regular Monday to Saturday, three quarters of services to Wigmore and Stopsley do not operate on Sundays/Bank Holidays (Table 3.8). There is a similar picture for local east-west buses via the local highway network to destinations within central Luton.

As previously noted the North of Luton Strategic Allocation facilitated by the M1-A6 scheme will be integrated within Luton's public transport network. This will include services to Leagrave railway station and Luton town centre as a minimum.

[41] Luton Dunstable Busway: Major Scheme Business Case Updated for Full Approval, Luton Borough Council, 2009 (Accessed: 04th April 2018)
[42] Busway Map, Central Bedfordshire Council, 2018 (Accessed: 04th April 2018)

3.9.7 Rail network

Connectivity via Rail in the study area is facilitated by three railway stations: Harlington, Leagrave and Luton stations. Thameslink has introduced a completely new timetable as of 20 May 2018. Harlington and Leagrave are still served by regular services between Bedford, Luton and Brighton via Gatwick Airport and Central London (up to 4 trains per hour), with these supplemented at Luton with semi fast services to the Medway Towns and Orpington via Central London (a further two trains per hour respectively).

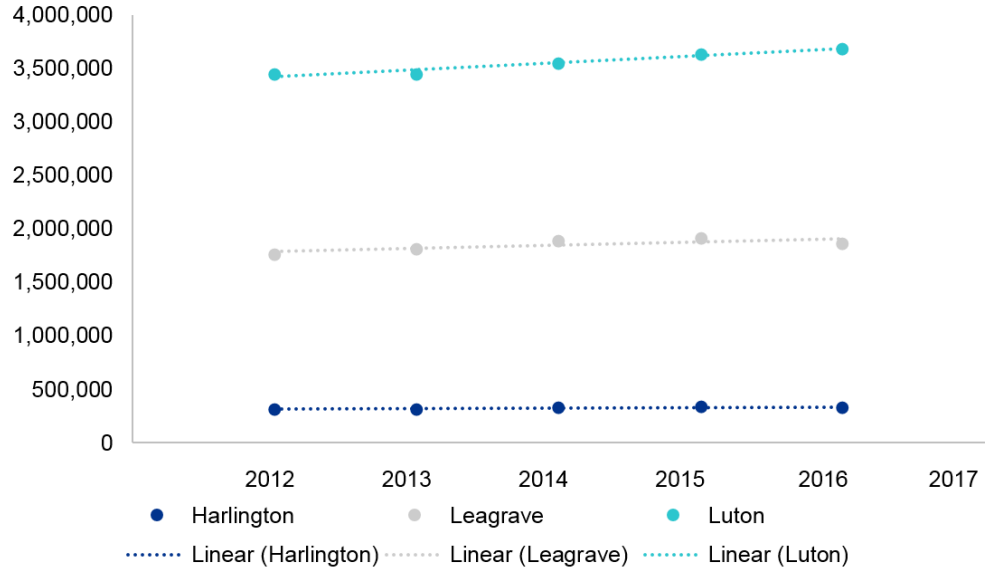
Luton receives hourly fast off peak services provided by East Midlands Trains between Corby (Northamptonshire) and London St Pancras[43]. All day services are provided at Luton Airport Parkway by East Midlands Trains to/from St. Pancras and destinations in the East Midlands such as Leicester and Nottingham.

Figure 3.15 Key destinations from Harlington, Leagrave and Luton stations

Rail patronage change over time at Harlington, Leagrave and Luton Stations has been estimated based on the total entries and exits recorded per year (Figure 3-16)[44]. In general, there has been marginal increases in passenger numbers at all three stations over the past five years. Luton Station has seen the greatest increase, and also experiences the greatest passenger footfall, roughly double the number of people entering and exiting Leagrave Station, and more than ten times the number at Harlington Station.

[43] Source: https://www.railplan2020.com/timetables and https://www.eastmidlandstrains.co.uk/Global/TT1_May18.pdf accessed 19 May 2018
[44] Source: Office of Rail and Road

Figure 3-16 Harlington, Leagrave and Luton rail patronage growth (2012-2017)



3.9.8 Walking, cycling and horse riding

Pedestrian facilities in the study area take the form of footways alongside Toddington Road (B579), Sundon Park Road, the A6 and around the village of Sundon, designated footpaths and bridleways.

A bridleway / byway skirts the northern boundary of the Luton urban area connecting the John Bunyan (77-mile circular trail) and Icknield Way (170-mile route between Suffolk and Buckinghamshire) trails with local public rights of way and open space such as Great Bramingham Wood and the communities of Marsh Farm, Sundon Park and Sundon Road hamlet. The M1-A6 link would cross the current route of the Icknield Way/ John Bunyan Way and appropriate mitigation is being included in the design.

National Cycle Route 6 (NCR6) runs broadly alongside the River Lea in Luton and on to Dunstable underneath the M1 mostly via off road provision. It is approximately 2km south of the North of Luton Strategic Allocation and the Local Plan commits to integrate the community with NCR6. Once complete it will connect London with Cumbria via Watford, Luton, Milton Keynes, Sheffield and Manchester.

Whilst equestrians and cyclists are permitted to use all roads in the north of Luton (with the exception of the M1), however it has been noted that existing infrastructure is not well suited to these activities[45].

3.9.9 Aviation

London Luton Airport south of Luton is a growing international gateway. It carried 14.6 million passengers in 2016 and 15.8 million in 2017 a significant increase from 9.5 million in 2011. The airport, now the UK's 5th largest passenger airport, is experiencing investment in the terminal facilities as a result[46]. It serves as an operational base for EasyJet, TUI Airways, Ryanair and Wizz Air, (and also the headquarters for the first two airlines) with most services to destinations within the UK and Europe.

In addition, a fully automated Direct Air to Rail Transit (DART) 'people-mover' between London Luton Airport and Luton Airport Parkway Station is being commissioned by London Luton Airport Limited and Luton Borough

[45] M1-A6 Link Road - Walking, Cycling and Horse Riding Assessment, Jacobs (2018)
[46] Civil Aviation Authority (2016): https://www.caa.co.uk/Data-and-analysis/UK-aviation-market/Airports/Datasets/UK-Airport-data/Airport-data-2016/ Table 1 accessed 11 September 2017

Council. This aims to enhance connectivity and journey times between rail services and the airport, which is currently undertaken by shuttle buses[47].

The airport also makes an important local contribution to the transport of freight, with it the 7th largest UK airport for freight tonnage[48].

Key Observations

- *The study area is characterised by strong north-south links to London by rail via the Midlands Mainline. Other than Bedford links to the north are limited to off peak services to towns in Northamptonshire such as Kettering and Corby.*
- *There is strong east-west connectivity via bus between Luton, Dunstable and Houghton Regis facilitated by the Guided Busway. Otherwise, east-west connectivity via bus is relatively poor, reflecting poor east-west connectivity via road.*
- *Recent investment in the A5-M1 Link, the Woodside Link and the Guided Busway, as well as regional-scale planned schemes, demonstrates a general desire to improve east-west connectivity for all modes within study area and the wider region.*
- *The recent growth of London Luton Airport and investment in a new DART system reflects the anticipation of growth in further demand for the airport.*

3.10 Road performance

This section provides an overview of the following:

- Commuting travel patterns, including initial expectations for the new development;
- Traffic volumes including annual average daily traffic flows, weekly and hourly variability, congestion and network stress;
- Speeds – data on journey times will be analysed in subsequent updates to the Strategic Case when a robust set of data following the opening of the A5-M1 Link is available;
- HGV flows; and
- Road safety issues.

Further detail on traffic flows to back up the commentary is provided in Appendix A.

3.10.1 Commuting patterns to and from Luton

Insight into the commuting patterns between Luton and other local authorities is detailed in this section, based on 'travel to work' and 'usual place of residence' data, as provided by the 2011 Census (Nomis). There is a considerable number of people commuting for work purposes between the local authority districts in the vicinity of the proposed M1-A6 Link according to the origin-destination data.

Outcomes of this analysis identifies that across all modes:

- 34,348 people commute to Luton for work from other local authorities in the UK or abroad, whilst 33,573 people commute from Luton to other local authorities. This means there is a net positive increase in working population of 775 people in Luton;
- Most people commuting to Luton are coming from Central Bedfordshire (12,780 people);
- There are also considerable numbers of people coming from other local authorities including St Albans (1,819), North Hertfordshire (1,721), Bedford (1,682), Milton Keynes (1,469) and Dacorum (1,027);
- Most people commuting from Luton are going to Central Bedfordshire (8,401 people); and
- There are also considerable numbers of people commuting from Luton to St Albans (3,212), Dacorum (2,377), Welwyn Hatfield (2,063), Milton Keynes (1,979), Westminster (City of London) (1,783), North

[47] Fast and east transfer from train to plane, London Luton Airport Limited, 2018
[48] http://www.airportwatch.org.uk/air-freight/ accessed 11 September 2017

Hertfordshire (1,282), Bedford (1,252) and Stevenage (1,106). This reflects the polycentric economic geography articulated well in the SEMLEP Strategic Economic Plan.

3.10.2 Estimating commuting patterns for the new development north of Luton

Whilst the M1-A6 Link and proposed development is located in Central Bedfordshire, this infrastructure will be an effective urban extension of Luton. Therefore, three Middle Layer Super Output Areas (MSOAs)[49] in the north of Luton have been selected to be used as a proxy to indicate the commuting patterns between Luton and Central Bedfordshire, which has the greatest inflow and outflow of commuters from Luton (Figure 3-15).

The proxy set of MSOAs have been chosen to anticipate the kinds of commuting relationships that the new development north of Luton might experience. These cover Warden Hill (E02003258) Marsh Farm (E02003259) and Sundon Park (E02003260), and have been chosen according to their location and mixture of commercial and residential buildings (Figure 3.17).

Figure 3.17: MSOAs making up the Luton Proxy Area

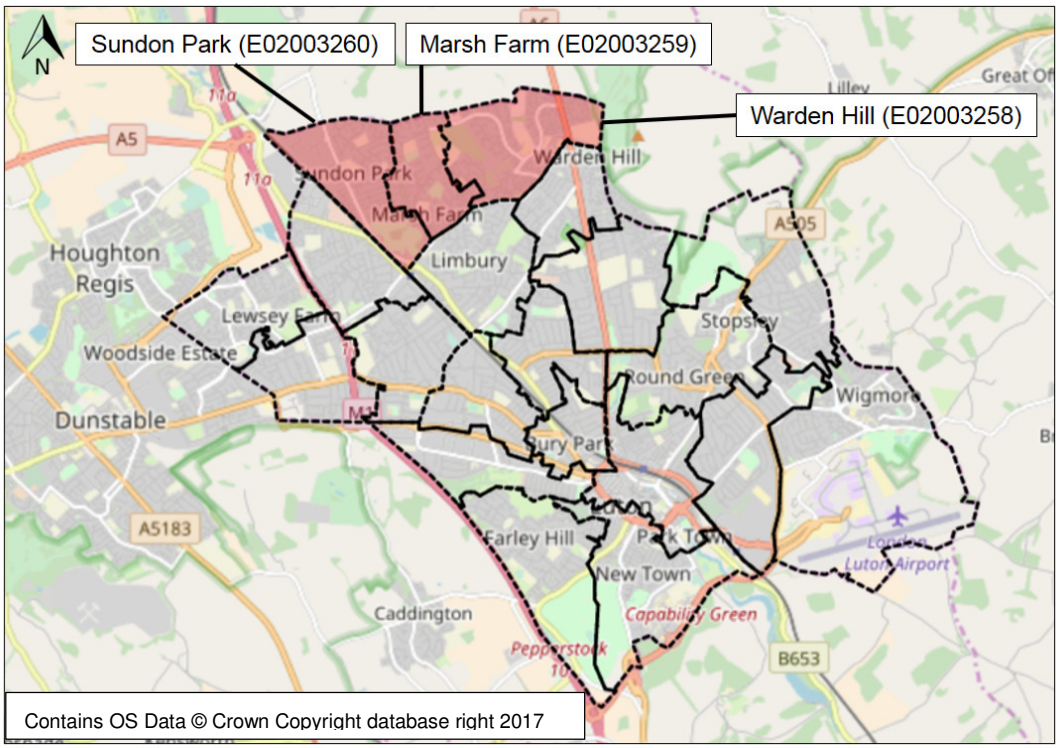


Figure 3.18 summarises that at a local authority level these areas experience a net influx of commuters from Central Bedfordshire whilst there is a net outflow of commuters to Bedford, Milton Keynes, North Hertfordshire, St Albans and Dacorum.

Then considering where those coming into these areas reside in Central Bedfordshire - the MSOAs with the highest number of people commuting to and from the proxy area and Central Bedfordshire are highlighted in Figure 3.19. This identifies key commuting relationships between Houghton Regis, Dunstable and the rural hinterland and the proxy area in the north of Luton. This map also illustrates the connectivity provided by the M1, and jobs at Cranfield University and Magna Park Distribution centres as providing an attraction for residents of this area.

[49] Middle Layer Super Output Area (MSOA) Boundaries, Office for National Statistics (2016) (Accessed: 02nd May 2018)

Figure 3.18: Commuting to/from the Luton Proxy Area (Data Source: Nomis)

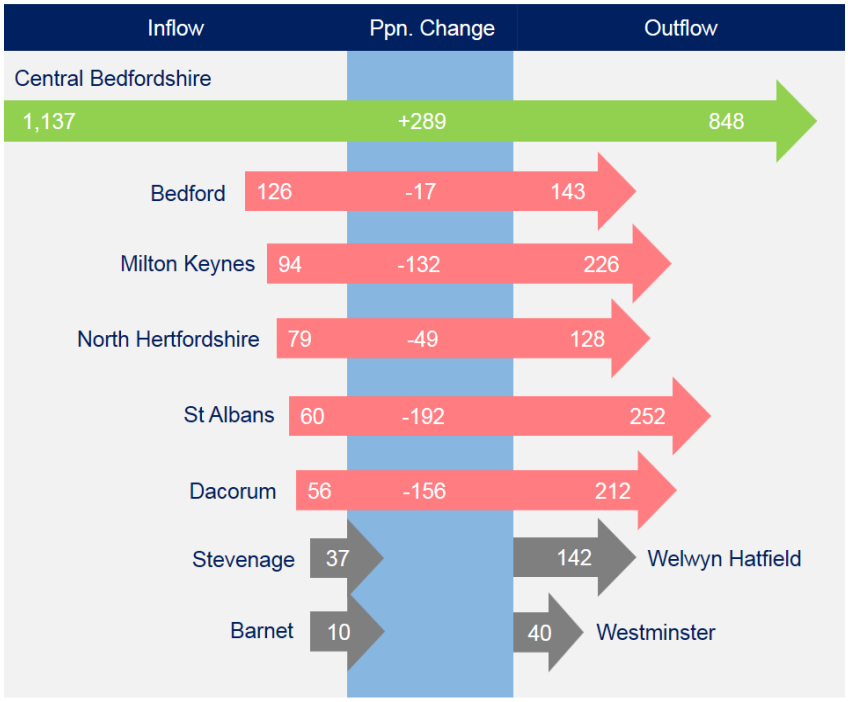
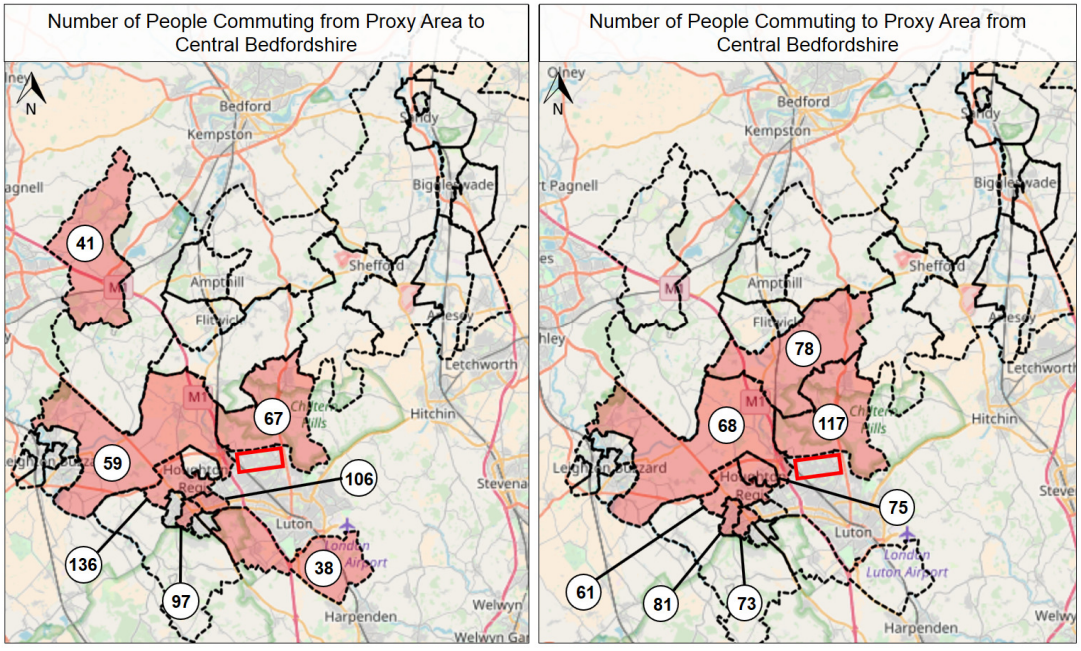


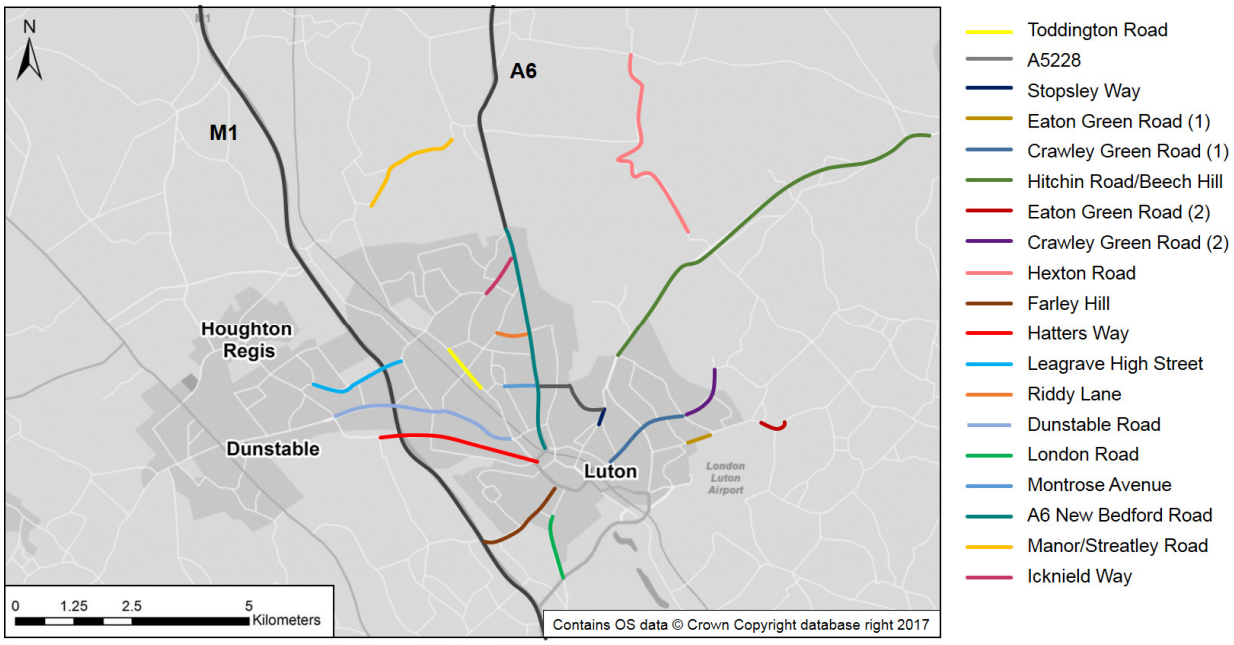
Figure 3.19: Top commuting patterns between Central Bedfordshire and the Proxy Area (Outlined in Red) (Data Source: Nomis)



3.10.3 Traffic volumes

Appendix A provides detailed analysis on traffic volumes on the roads illustrated in Figure 3.20 at an annual, weekly and daily level within the study area.

Figure 3.20: Links Analysed in the Road Performance section of the SOBC.



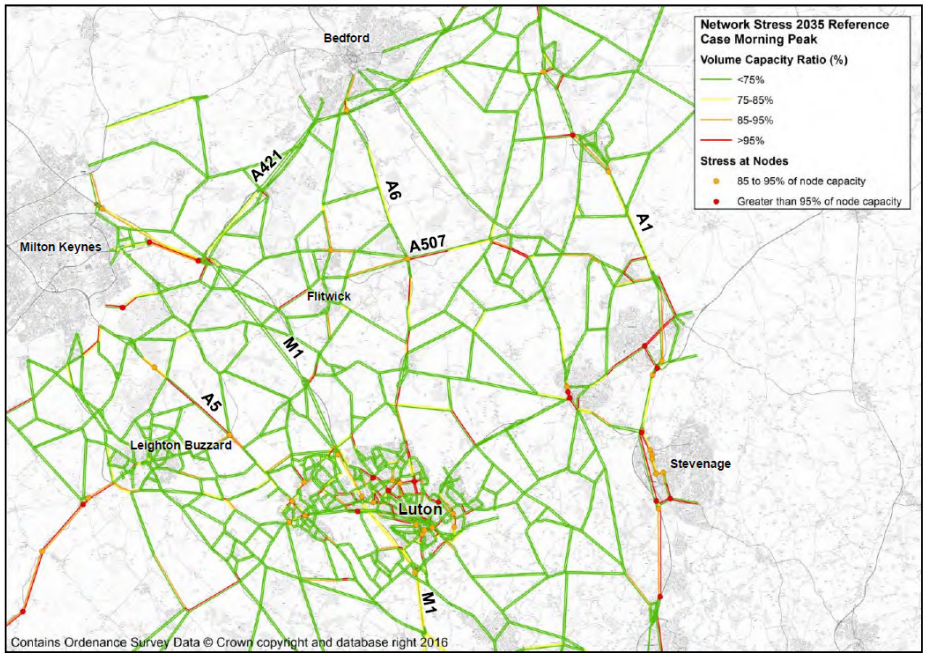
Key conclusions from this analysis are:

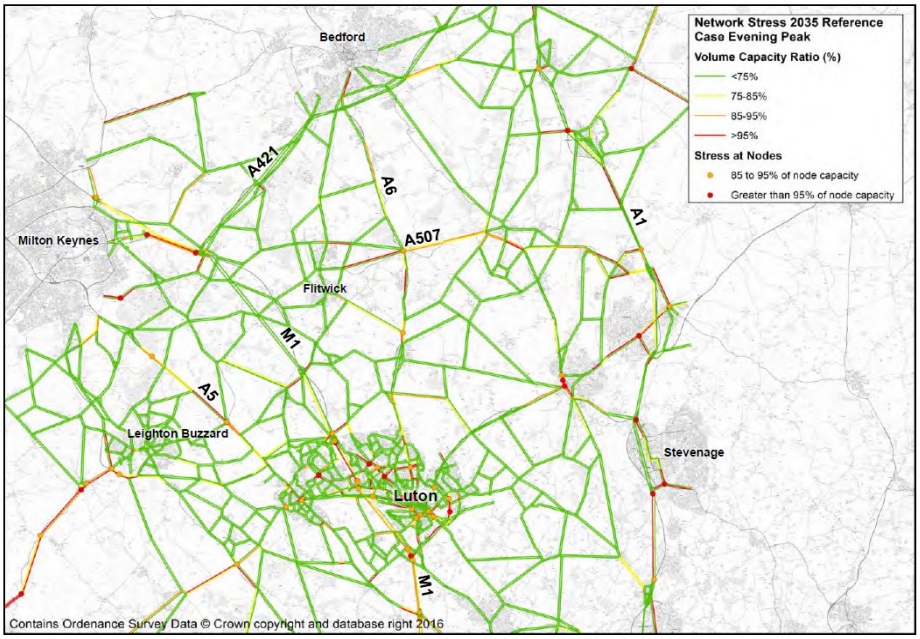
- Growth has been considerable on the M1 (49% over 16 years)
- Growth has been experienced in east-west traffic flows between Luton and Dunstable, in particular (A5065) Hatters Way, which provides a route bypassing the M1 Junction 11. There is also little variation in its flows on this route throughout the week, with Saturday and Sunday evening flows similar to Monday and Friday evening peak flows. The parallel A505 Dunstable Road is more heavily used than Hatters Way providing access to the M1. In aggregate over 60,000 vehicles in total are carried on a weekday on the A505 and A5065 alternative;
- High volumes of traffic use the A505 Beech Hill east of Luton (rural east-west route), traffic flows on the A5228 or A505 Stopsley Way have grown in recent years following a decline in the mid 2000s
- Flows on the A6 New Bedford Road in Luton have fluctuated since 2000, with a consistent volume of around 26,000 vehicles using the A6 during this decade
- Rural east-west roads generally experience two defined peak periods, between 07:00 and 09:00 and 16:00 and 17:00. It is assumed that these periods are when rural east-west roads are under greatest stress;
- Notable peak in usage of Manor Road / Streatley Road between 07:00 and 09:00 with a marked westbound flow toward Luton and the M1, that is not replicated in the evening peak in the reverse direction.
- Urban unclassified roads generally experience a defined peak in flows between 07:00 and 08:00, although steady flows are experienced throughout the day; and
- Main radial roads generally experience two defined peaks throughout the day between 07:30 and 09:00 and 15:00 and 18:00.

3.10.4 Network stress

Figure 3.21 below demonstrates outputs from Central Bedfordshire Local Plan – Stage 1A Modelling (2017) 2035 Reference Case in the AM and PM peaks showing expected congestion on the network in the absence of any new Local Plan growth or new transport measures (i.e. the M1-A6 Link) above those committed. These maps outline the links that are likely to operate with a volume at or over capacity during AM and PM peak hours across Central Bedfordshire by 2035, highlighting areas likely to experience network stress. Highway links in central Luton are predicted to be congested for this modelled scenario.

Figure 3.21: Volume Over Capacity (VOC) in AM and PM Peak (2035 Reference Case) [50]





[50] Central Bedfordshire Local Plan – Stage 1A Transport Modelling, July 2017 https://centralbedfordshire.jdi-consult.net/documents/pdfs_12/cblp_stage_1a_transport_modelling.pdf, accessed 20 May 2018

Further detail on congestion and network stress will be added to this section during the development of the OBC to reflect the transport modelling of the study area and scheme.

3.10.5 Speed analysis

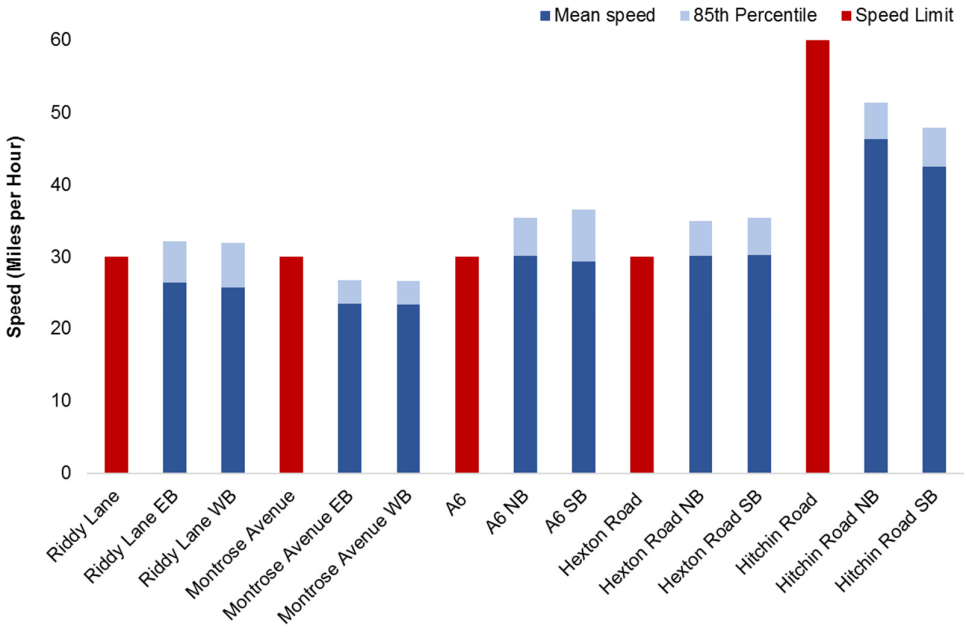
Mean speed on selected links in the study are have been analysed, through the interrogation of traffic surveys at points on the following routes. Their location can be seen above in Figure 3.20.

- Riddy Lane: Urban unclassified east-west route in Luton (30mph);
- Montrose Avenue: Urban unclassified east-west route in Luton (30mph);
- The A6: Main north-south radial route (30mph);
- Hexton Road: Rural east-west route (30mph); and
- Hitchin Road: Rural north-south route that facilitates east-west connectivity (60mph);

Average speed, and the 85th percentile of mean speed, are plotted in Figure 3.22 relative to speed limit on the five links studied. This highlights the following points about traffic behaviour on these routes:

- On Urban East-West Links (Riddy Lane and Montrose Avenue): Mean speed in both directions is lower than the speed limit along the route;
- On Montrose Avenue: Mean speeds in both directions are over 6mph slower than the speed limit, and the 85th percentile of the mean speed is around 27mph. This indicates that the link is relatively slow moving over an average day.
- On North-South Links (A6 and Hexton Road): Mean speed in both directions is faster than the mean speed on the 30mph east-west links. Mean speed northbound on both routes is marginally higher than the speed limit on these links, and the 85th percentile, on both, over 35mph (14% over the speed limit). Southbound traffic on the A6 is marginally slower on average than northbound traffic and the speed limit, however the 85th percentile is 17% greater than the speed limit.
- On Hexton Road: Northbound and Southbound vehicle speed is greater than the speed limit. This indicates aggressive traffic behaviour on this link.
- On Hitchin Road: Mean speed northbound and southbound, and the 85th percentile of the mean, are considerably lower than the national speed limit (60mph).

Figure 3.22: Analysis of Vehicle Speed on Various Study Links



3.10.6 Heavy Goods Vehicle (HGV) flows

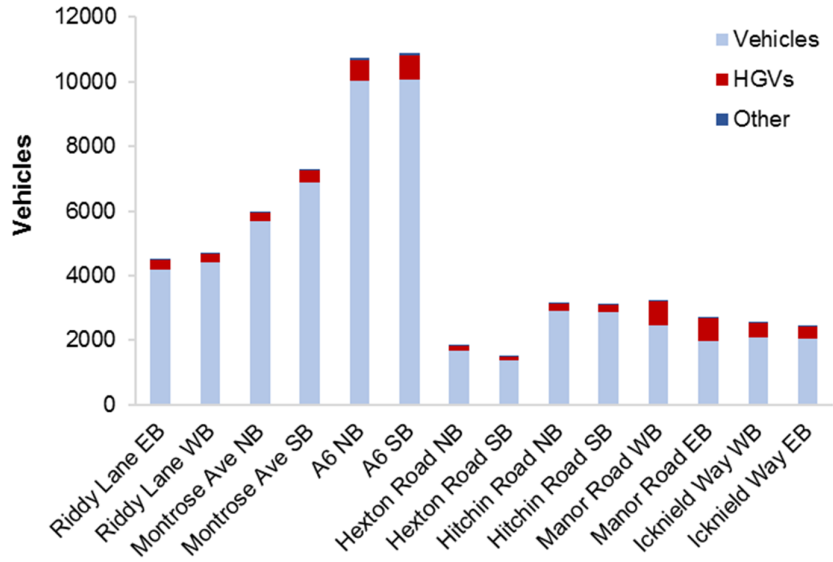
The M1-A6 will alter the distribution and composition of traffic on alternative routes between the M1 and A6. Seven locations along selected links in Luton have been analysed to provide information of the existing vehicle mix, through the proportion of goods vehicles to general traffic, of traffic along the following routes (Figure 3.20):

- Riddy Lane (as above);
- Montrose Avenue (as above);
- A6 (as above);
- Hexton Road (as above);
- Hitchin Road (as above);
- Icknield Way: Urban unclassified east-west route in Luton; and
- Manor Road/Streatley Road: Unclassified rural east-west route north of Luton.

The vehicle mix on these seven routes across an average day, for traffic in both directions, is provided in Figure 3.23. This identifies two key points:

- The proportion of goods vehicles on Riddy Lane, Hitchin Road, Montrose Avenue, the A6 and Hexton Road is less than or equal to 8% of total daily flows; and
- On Icknield Way and Manor Road/Streatley Road, the percentage of goods vehicles was much greater, 15-18% and 23-26% respectively.

Figure 3.23: Average daily vehicle mix on various roads in Luton



In the AM peak (Figure 3.24), the percentage of goods vehicles on Manor Road/Streatley Road are considerable in both directions, particularly in the eastbound direction (32%, 93 vehicles). During the PM peak (Figure 3.25), there is a similar pattern in the percentage of goods vehicles measured in the seven locations as presented over the daily period. This reflects:

- The need for these vehicles to reach the M1 and businesses alongside the B579 and Sundon Park Road in the north of Luton, including extensive manufacturing and logistics businesses;
- Few feasible east-west routes for over height lorries exist in the north of the Luton urban area because the majority of roads involve low bridges under the Midland Mainline (as discussed in Section 3.9.5)

Figure 3.24: Vehicle mix on various roads in Luton in the AM peak

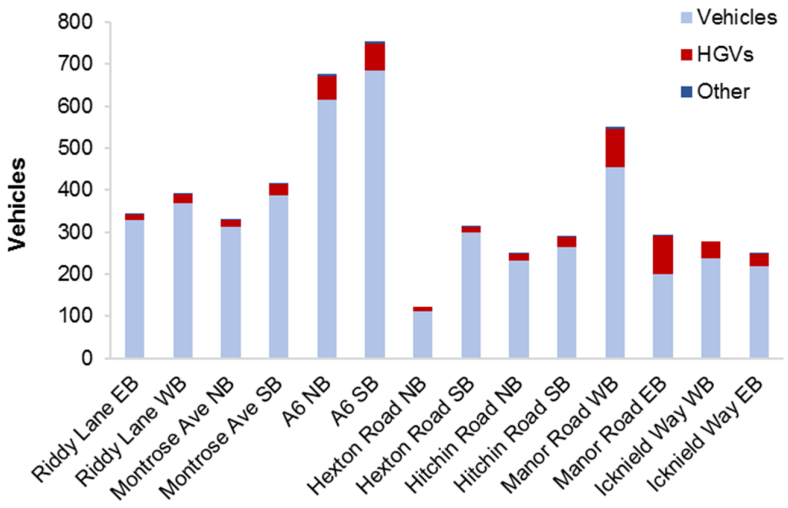
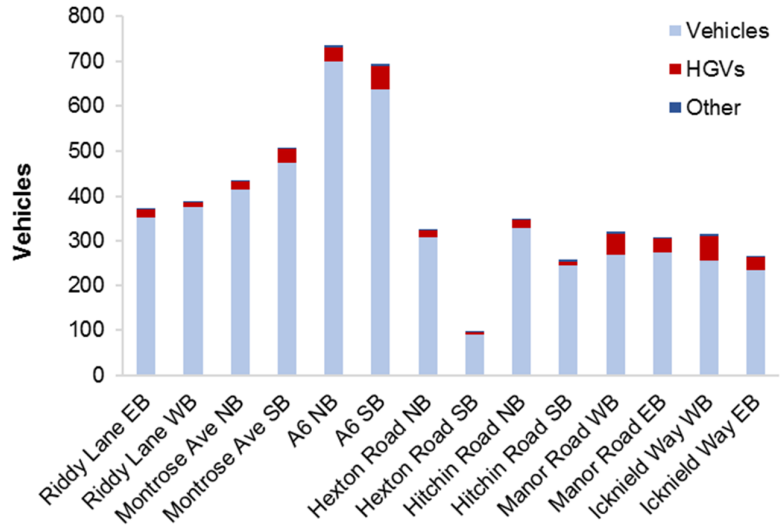


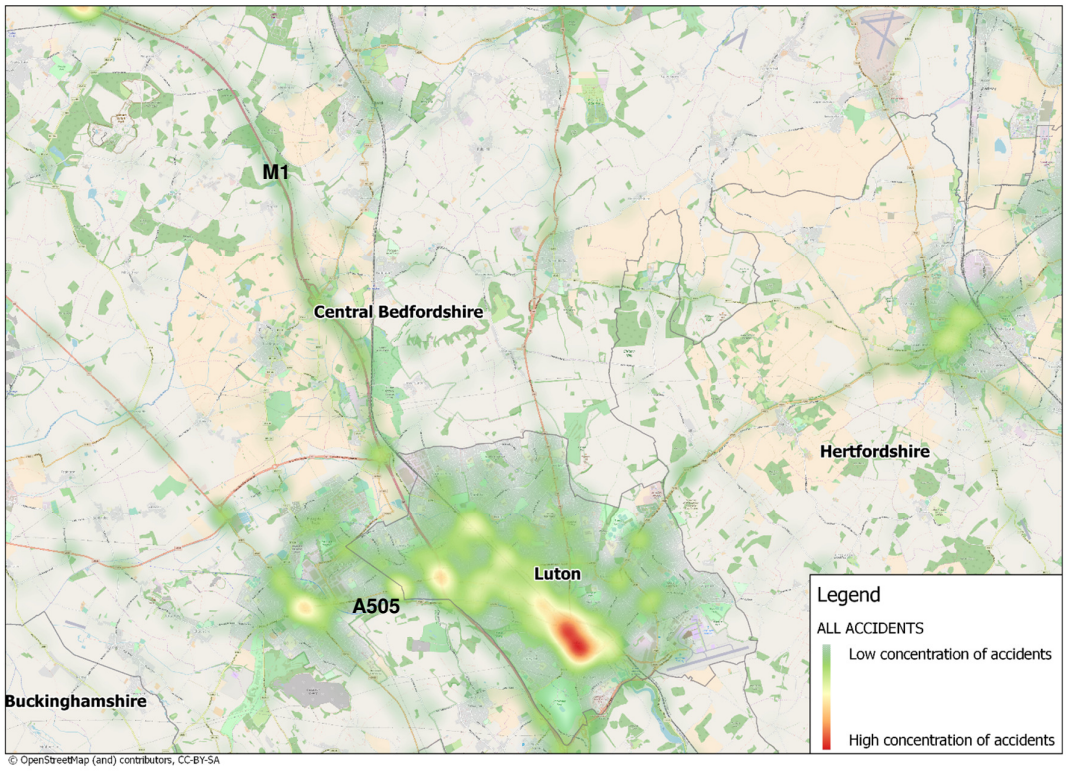
Figure 3.25: Vehicle mix on various roads in Luton in the PM peak



3.10.7 Road safety issues

Collision analysis has been undertaken for accidents that took place in the study area between 2012 and 2016. A heat map of collisions in the study area is presented in Figure 3.26. This demonstrates that there has been a high number of collisions around central Luton, where there is the highest concentration of collisions. There is also a relatively high concentration of collisions and along the M1 in recent years, in particular in and around M1 Junction 11 for the A505.

Figure 3.26: Heat map of accidents in the wider study area (2012-2016)

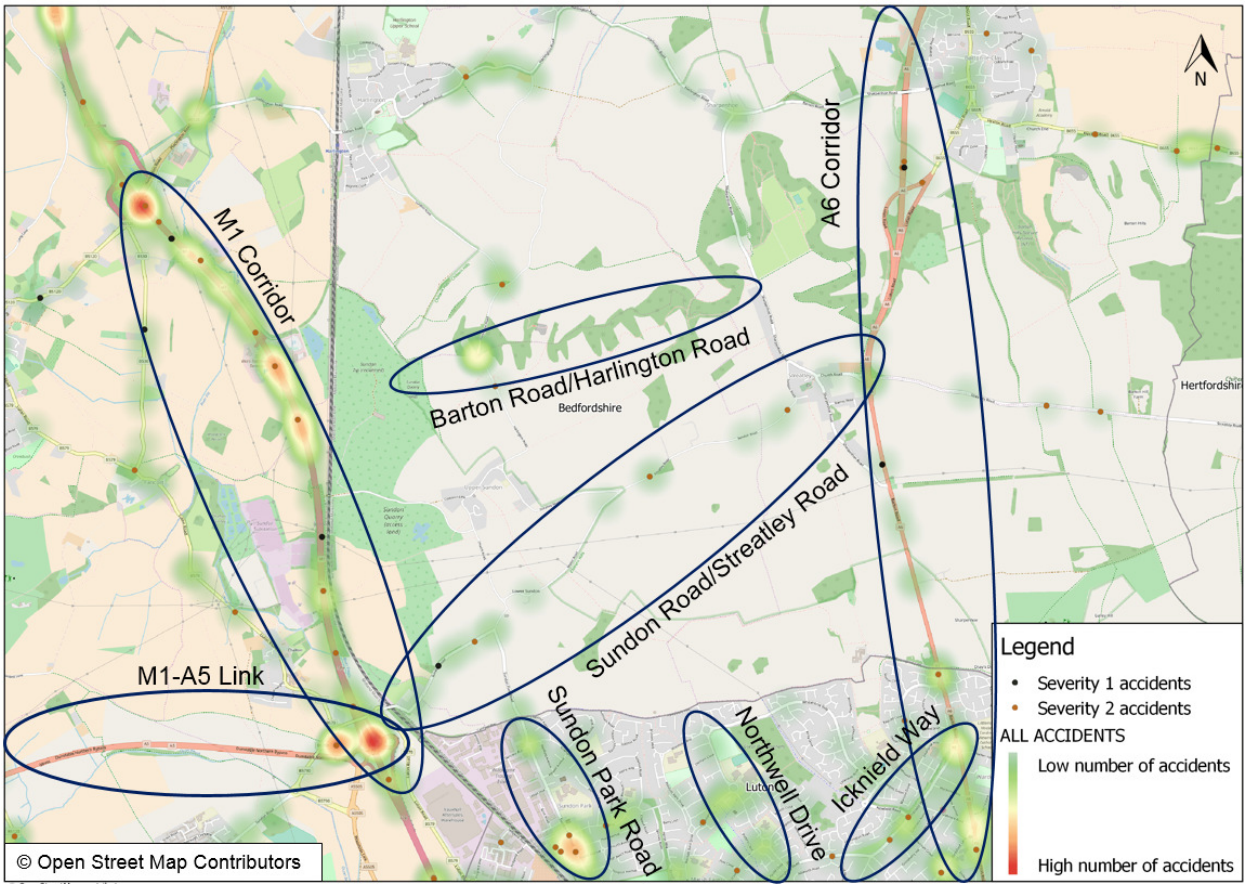


Injuries sustained are classified into the following categories:

- Fatality (Severity 1): any death that occurs within 30 days from causes arising out of the collision;
- Serious injury (Severity 2): records casualties who require hospital treatment and have lasting injuries, but who do not die within the recording period for a fatality; and
- Slight injury (Severity 3): where casualties have injuries that do not require hospital treatment, or, if they do, the effects of the injuries quickly subside.

The heat map presented in Figure 3.27 highlights Killed or Seriously Injured (KSI) casualties (Severity 1 and 2 accidents) recorded in the immediate study area. Key corridors of interest are highlighted in this. Four KSI cases have been recorded over five years on Sundon Road / Streatley Road / Manor Road which connects the M1 and the A6 east-west. This route is used as a route for east-west movements in the absence of a scheme such as the M1-A6. In addition, there is a relatively high concentration of accidents on the local highway network in the north of Luton, particularly on Sundon Park Road and Icknield Way, again roads that are likely to be used by some vehicles which could use the M1-A6 Link designed to higher road safety standards than those roads.

Figure 3.27: Heat map of collisions and record of KSIs in the local study area (2012-2016).



3.10.8 Summary

Key Observations

- *Urban and rural links between the M1 and the A6, currently experience either heightened congestion, safety issues, a disproportionate volume of goods vehicles using the routes and/or potentially environmental ambience dis-benefits as a result of through traffic;*
- *Growth has been considerable on the M1 (49% over 16 years), and with growth also noted on the A5065 Hatters Way with a sharp increase from 22,000 to 26,000 vehicles between 2011 and 2012;*
- *High volumes use the A5065 and A505 between Luton and Dunstable in addition to the popular Guided Busway. Over 60,000 vehicles travel east-west in aggregate across both roads on an average weekday*
- *High volumes of traffic use the A505 Beech Hill east of Luton (rural east-west route), traffic flows on the A5228 or A505 Stopsley Way have grown in recent years following a decline in the mid 2000s*
- *Flows on the A6 New Bedford Road in Luton have fluctuated since 2000, with a consistent volume of around 26,000 vehicles using the A6 during this decade*
- *There is a significant number of vehicles using Manor Road/Streatley road to commute between the M1 and A6 given the type of road (substandard, rural unclassified road) it is. There is a particularly high volume of vehicles travelling towards the M1 during the AM peak.*
- *Traffic modelling undertaken for Central Bedfordshire's Local Plan demonstrates network stress issues in the Luton urban area in both the morning and evening peak periods without the M1-A6 Link or any new Local Plan growth in 2035.*
- *A high proportion of goods vehicles use Manor Road/Streatley Road, particularly during the AM peak, again totally out of keeping with the standard of road, partly because it is one of the few roads that overbridge the Midland Mainline and to avoid perceived delay in Luton urban area.*
- *Icknield Way experiences a relatively high proportion of goods vehicles, particularly in the PM peak to provide access to freight origins and destinations and also because of the lack of alternative east-west routes across the Midland Mainline that are suitable for over height vehicles.*
- *A high concentration of collisions has been recorded in central Luton.*
- *Additional safety hotspots identified include Toddington Road, M1 Junction 11A, various points along the A6, Icknield Way, Sundon Park Road, Northwell Drive and Manor Road/Streatley Road. These will be investigated further at OBC stage.*

3.11 Environment

Full details of existing environmental conditions are provided in subsequent, topic specific, chapters of the standalone *Environmental Report* and are summarised briefly below: A map of environmental constraints is shown in Figure 3.28 at the end of this section.

3.11.1 Air quality

The nearest Air Quality Management Area to the proposed M1-A6 Link is approximately 1.6km south and covers 24 dwellings to the east of the M1 motorway. There are a number of sensitive receptors in the vicinity of the scheme including residential properties and schools in Sundon Park, Marsh Farm, Bramingham and Lower Sundon, and a hospice in Bramingham.

3.11.2 Noise

There are a number of Noise Important Areas located near to the proposed M1-A6 Link at:

- the existing J11a of the M1;
- along the M1 between junction 11 to junction 11a;
- along the A6 as it passes through Warden Hill and Bramingham; and
- Bury Farm just to the west of the A6.

3.11.3 Landscape

The western end of the proposed M1-A6 Link is located within the Chilterns Area of Outstanding Natural Beauty (AONB) and the Chilterns National Character Area. The M1-A6 link is entirely within the London Area Greenbelt.

The area is predominantly rural, comprising undulating chalk farmland with a relatively open field network. There are open views to Sundon Ridge and part of the Chilterns AONB.

3.11.4 Historic environment

No designated heritage assets have been identified within the potential footprint of the scheme.

A scheduled monument, Dray's Ditches, is located on the edge of Bramingham, approximately 350m south of the proposed M1-A6 Link. There are three Grade II and one Grade I Listed Buildings within 600m of the proposed alignment, at Lower Sundon, including St Mary's Church (Grade I). No Conservation Areas, Registered Historic Parks and Gardens, or Registered Battlefields have been identified within 600m of the proposed scheme.

3.11.5 Ecology and nature conservation

There are five nationally designated sites within 2km of the proposed scheme, these are all Sites of Special Scientific Interest (SSSI). The closest SSSI is Sundon Chalk Quarry approximately 320m to the north of the proposed link M1-A6 link. Galley and Warden Hills SSSI, located approximately 1.3km to the southeast, is also a Local Nature Reserve.

No European Designated Special Areas of Conservation (SACs) or Special Protection Areas occur within 5 km of the centre of the proposed route. There are no SACs within 30km of the proposed project that include bats as one of their qualifying features.

A total of seven non-statutory designated sites were noted as present within 2 km of the centre of the proposed route. These include one Roadside Nature Reserve, two District Wildlife Sites and four County Wildlife Sites.

The proposed alignment of the M1-A6 Link passes within 100m of two areas of ancient and semi-natural deciduous woodland: to the north of Sundon Wood and to the south of George Wood.

Protected species known to be occur in the area include badgers, great crested newts and bats, and there are records of twelve bird species listed on Schedule 1 of the Wildlife and Countryside Act, 1981.

3.11.6 Water environment

There are several small unnamed watercourses within the study area and two Main Rivers, namely the River Lee and River Flit. The River Lee, located approximately 1km to the south of the study area at its closest point, has its source near Houghton Regis. The River Flit, located approximately 300m to the west of the study area, has its source within the study area between the M1 and railway line to the north of Luton Road. Other water bodies within the study area include a number of ponds.

The River Lee and River Flit have been classified as having 'Bad' and 'Moderate' Overall Water Body Status respectively. The study area sits within Nitrate Vulnerable Zones for groundwater and surface water, and lies within part of a Surface Water Safeguard Zone. The study area is located within the Zone 3 (Total Catchment) of a Groundwater Source Protection Zone (GPZ), which is the total area needed to support the discharge from the protected groundwater source.

The study area overlies a Water Framework Directive (WFD) groundwater body catchment, the Upper Bedford Ouse Chalk, which has been characterised as having poor Water Body Status.

The Environment Agency has classified the superficial deposits underlying the majority of the area as a Secondary Undifferentiated Aquifer, where present. However, towards the east they are classified as a Secondary A Aquifer. The Environment Agency has classified the bedrock underlying the area as a Principal Aquifer.

Whilst the Proposed Scheme is located within fluvial Flood Zone 1, suggesting a low risk of fluvial flooding, it would cross three surface water flow paths. The nearest records of groundwater flooding in the area are 2km to the south of the proposed scheme and the risk of groundwater flooding has been identified as low.

3.11.7 Soils and geology

Bedrock geology comprises various types of chalk formation. Superficial deposits in the vicinity comprise Lowestoft Formation, Head and Glaciofluvial Deposits described as diamicton, clay, silt, sand and gravel.

The Natural England Agricultural Land Classification (Ref 2.4) classifies the majority of the study area as Grade 2 (Very Good). Part of the central section of the study area is classified as Grade 3 (Good to Moderate).

There are no geological SSSIs within 1km and no Regionally Important Geological Sites (RIGS) within 500m of the study area. There are no known active or future mineral resources within 500m of the proposed scheme.

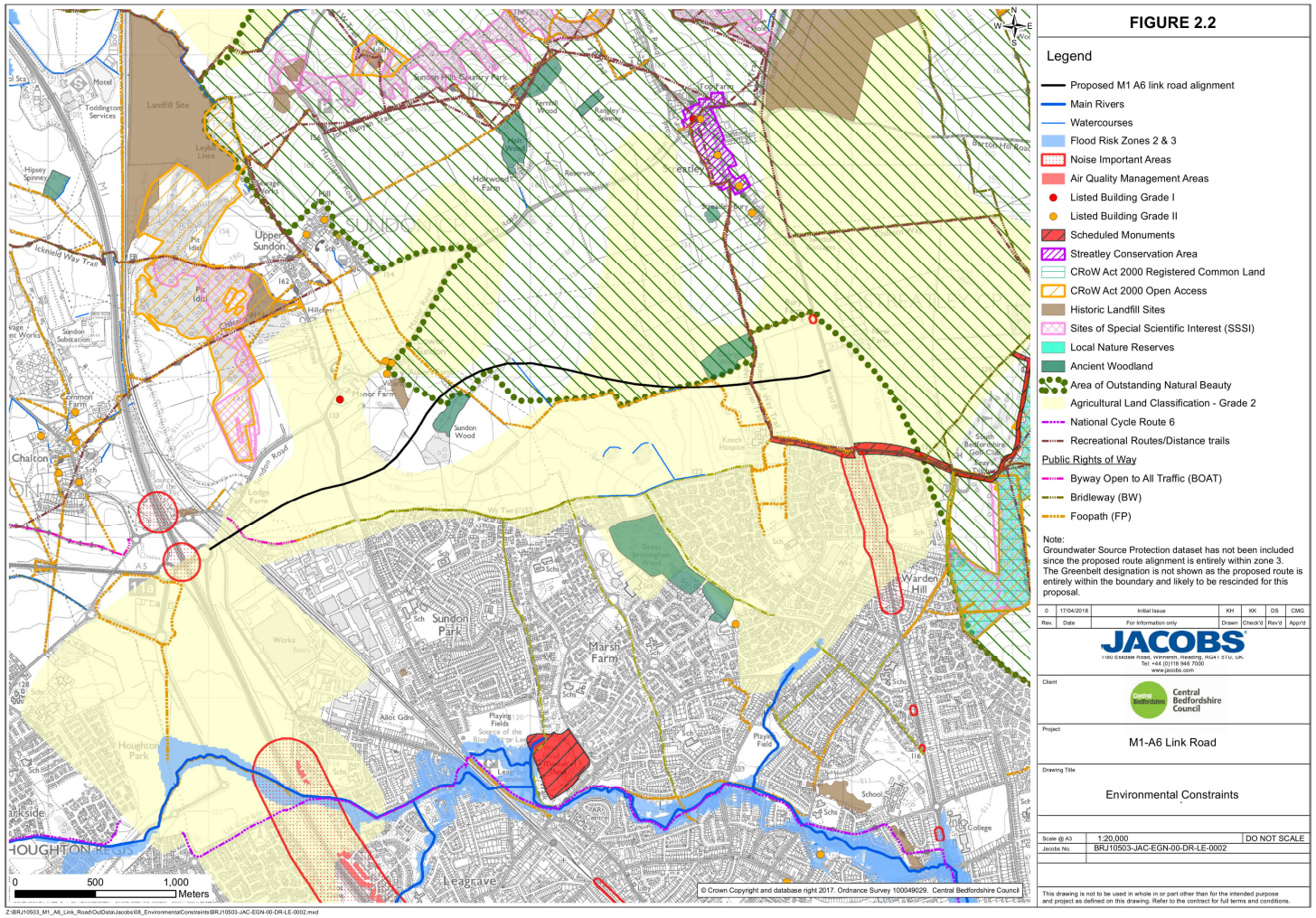
Made ground in the vicinity of the proposed scheme includes historic landfills at Auber's Farm and Long Meadow Farm, made ground associated with the Midland railway line, and former roads associated with the recently opened M1 Junction 11a. There are two potentially infilled ponds within the footprint of the M1-A6 Link and a further three potentially infilled ponds and Old Chalk Pits within 250m. Other sources of potential contamination include industrial and commercial land uses, and the potential presence of unexploded ordinance.

3.11.8 People and communities

The alignment for the proposed M1-A6 Link passes through sparsely populated agricultural land. However, the route is located to the north of the densely populated residential areas of Sundon Park, Marsh Farm and Bramingham on the northern edge of Luton, Other local settlements include the hamlets of Lower Sundon, Upper Sundon and Streatley, which are to the north of the proposed scheme.

There are at least eight schools within 2km of the proposed M1-A6 Link as well as various community facilities including a leisure centre, playing fields, allotments, local businesses (e.g. public houses), churchyards and cemeteries. In addition, there is a large supermarket and business park at Bramingham.

Figure 3.28: Map of environmental constraints



4. Future situation

4.1 Introduction

This chapter describes the future transport situation in the study area. It makes use of data from the CBLTM forecasting work undertaken by AECOM and references the baseline of infrastructure investment with and without the scheme. This chapter also describes at a high level the growth in housing and employment anticipated in the study area building on previous analysis within the Business Case in Chapter 3.

4.2 Expected growth, infrastructure changes and traffic impacts

4.2.1 Central Case

Details of the forecast Central Case is provided in the forecasting section within the supporting *Economic Assessment report*. This has been developed taking into account each relevant district council's best view of likely housing and employment growth alongside central assumptions of traffic growth in the National Trip End Model, with care taken to avoid double counting. A detailed *Uncertainty Log* has been produced to support this forecasting – with this included in the *Economic Assessment Report.*

The resulting growth in total trips in the total Central Bedfordshire and Luton Transport Model highway matrix is shown below in for the model base year (2016), scheme opening year (2022) and design year (2037 – i.e.15 years after opening).

Table 4.1: Traffic growth between 2016, 2022 Scenario 1b and 2037 Scenario 1b

Time period	2016	2022	2037
AM peak hour total	18,234,309	19,028,923	20,604,033
% Change relative to 2016		4.4%	13.0%
Average INTER peak hour Total	34,912,572	36,613,085	40,171,306
% Change relative to 2016		4.9%	15.1%
PM peak hour total	22,533,467	23,479,750	25,350,611
% Change relative to 2016		4.2%	12.5%

4.2.2 Infrastructure changes in the 'without M1-A6 Link' case

This table set out the new transport schemes (following the modelled base year of 2016) included within the modelled base case in 2022 and 2037, regardless of whether the M1-A6 scheme is completed and the level of certainty that can be attributed, so as to include in the core scenario.

Table 4.2: Baseline of Infrastructure Investment

Scheme	Location	Certainty	2022	2037
M1 – A5 Link and Junction 11a including	Dunstable / Houghton Regis	Near Certain	✓	✓
- 2 lane on-slip onto the SB M1 from the new J11a roundabout				
- A5505 (Woodside Link)				
- Poynters Road Scheme				
- Connection to Woodside Link from Parkside Drive				
A421 Dualling (including between Eagle Farm and M1 Junction 13)	Milton Keynes to Ridgmont	Near Certain	✓	✓
Houghton Regis (HR) North site 1 development access	Houghton Regis	Near Certain	✓	✓

Scheme	Location	Certainty	2022	2037
Houghton Regis North Development 2 distributor road	Houghton Regis	More than likely		✓
Billington Road traffic calming	Leighton Buzzard	More than likely		✓
A505 / Billington Road / Stanbridge Road roundabout	Leighton Buzzard	More than likely		✓
East Leighton Distributor Road	Leighton Buzzard	More than likely		✓
Dunstable Road scheme	Luton	Near Certain	✓	✓
Airport Link to Century Park	Luton	Near Certain	✓	✓
Power Court development access	Luton	Near Certain	✓	✓
Luton Airport Mass Passenger Transport System	Luton	Near Certain	✓	✓
A1(M) J6-8 Smart Motorway	Welwyn to Stevenage	Near Certain	✓	✓
East West Rail – Western Section (Bedford to Oxford, Milton Keynes to Oxford, Milton Keynes to Aylesbury)	Beds, Bucks, Oxon	Near Certain		✓

4.3 Land use and planning context

Central Bedfordshire Local Plan is due for examination in 2018 following the submission of the Local Plan to government. The area formerly came under the administration of the now defunct South Bedfordshire and North Bedfordshire District Councils whose planning documents still have statutory weight until a new Plan is adopted. The Local Plan once adopted will replace the North Core Strategy and Development Management Policies Document (2009) and the majority of the remaining policies within the South Bedfordshire Local Plan (2004), the Mid Bedfordshire Local Plan (2005) and the remaining saved policies of the Bedfordshire and Luton Minerals and Waste Local Plan (2005) so far as they affect Central Bedfordshire. Residual site allocations in the north Site Allocations Document (2011) that are not already built out will remain in addition to the Minerals and Waste Local Plan – Strategic Sites and Policies (2014) which will sit alongside this new Local Plan once adopted forming the Development Plan for Central Bedfordshire.

Luton District Council's most recent Local Plan for the 2011-2031 period was approved in November 2017, and provides the most up-to-date basis for assessment of land use and planning context within its administrative area.

4.3.1 Employment land

Central Bedfordshire Council aims to create a minimum of 24,000 new jobs over the period 2015 to 2035. Within this figure, around 6,000 jobs will be delivered to meet 'footloose' strategic warehousing (B8 uses) on three major strategic employment sites.

The pre-submission Local Plan due for examination in 2018 outlines plans to create employment space at the following Strategic Allocation sites:

- North of Luton (Town Extension) (20 ha)
- M1 Junction 11a - Strategic Employment Area (45 ha)
- Marston Valley (New Villages) (40 ha)
- M1 Junction 13 – Strategic Employment Area (35 ha)
- RAF Henlow (Mixed Use Specialist Employment) (130 ha)
- A1 Corridor – Biggleswade South – Strategic Employment Area (60 ha).

Luton Borough Council employment need assessment has concluded that 18,000 new jobs need to be created over the 2011-2031 period. The Luton Local Plan adopted in November 2017 outlines plans to create employment development spaces at the following Strategic Allocation sites:

- Land south of Stockwood Park (14 ha)
- London Luton Airport (46.3 ha)

- Butterfield Technology Park (37.3 ha)
- Power Court (7.21 ha)
- Napier Park (25 ha)
- High Town (2.72 ha)
- Creative Quarter.

In addition, additional employment land stock will be delivered on allocated sites as older unsuitable employment land is freed up for new uses.

4.3.2 Housing

The Central Bedfordshire Local Plan notes that:

"major urban areas adjoin Central Bedfordshire with growth pressures that are intensifying. Central Bedfordshire is part of four Housing Market Areas (HMA) and adjoins nine local authorities. Within the HMAs, urban areas are often constrained by tightly drawn boundaries and therefore due to housing pressures, may have to look beyond their administrative area to accommodate growth. Less expensive housing costs and the availability of employment space in the area is also attractive to those looking to move from areas further south. Accommodating growth pressures in the form of unmet housing need from neighbouring authorities, close to where the need arises, could be achieved in the south of the area by removing the most sustainable locations for development from the Green Belt."

To meet Central Bedfordshire Council's statutory requirements and to serve the interests of its communities, the local plan proposes through **Policy SP1** the delivery of 39,350 new homes in the period 2015 to 2035[51]. This includes 23,528 homes that are already planned for or built. However, the plan additionally provides for further consideration of strategic growth and proposes a Partial Review to further assess potential in the East West Rail and A1/East Coast Main Line corridors as new infrastructure is committed.

Strategic allocations will be made at the following locations:

- North of Luton (Town Extension) – 4,000 homes.
- Marston Valley (New Villages) – 5,000 homes
- East of Arlesey (Town Extension) – 2,000 homes
- East of Biggleswade (New Village) – 1,500 homes.

Development will also be brought forward through Neighbourhood Plans, and through medium and small scale extensions to villages and towns throughout Central Bedfordshire.

The most up-to-date Luton Local Plan was published in November 2017. It allocates 8,500 homes[52] over the 2011-2031 period. This is substantially lower than the total growth projected by the 2016 East of England Forecasting Model (EEFM) are shown below as there is limited developable land available for new homes within the built up area. As a consequence, Central Bedfordshire Council's Local Plan includes the provision to deliver housing need identified for the Luton HMA and some unmet need from Luton close to where it arises where there is capacity to do so sustainably. This and the need to meet unmet demand for other HMAs is the reason why Central Bedfordshire needs to accommodate greater growth than shown below.

Table 4.3: Draft objectively assessed need for housing figures for Luton and Central Bedfordshire from the East of England Forecasting Model (EEFM) (August 2016)

Local Authority	Total growth 2014-2036
Luton	20,900
Central Bedfordshire	26,500

[51] http://www.centralbedfordshire.gov.uk/Images/pre-submission-local-plan-compressed-v2_tcm3-27081.pdf, p.39
[52] https://www.luton.gov.uk/Environment/Lists/LutonDocuments/PDF/Local%20Plan/adoption/Luton-Local-Plan-2011-2031-November-2017.pdf, p54

The Local Plan reinforces the need for further strategic east-west connections to deliver significantly enhanced growth levels over and above that planned for in this Local Plan.

Key Observations

- *Central Bedfordshire Council's Local Plan is due for examination in 2018. It accommodates the need for Central Bedfordshire to accommodate unmet housing need in growing urban areas in neighbouring authorities such as Luton.*
- *Policy SP1 sets out how the delivery of 39,350 new homes in the period 2015 to 2035 will be realised. This includes 23,528 homes that are already planned for or built.*
- *A key component of this growth is the North of Luton Strategic Allocation that includes 4,000 homes enabling unmet demand in the Luton area to be sustainably accommodated. To deliver this growth and wider growth in Central Bedfordshire, the Local Plan makes clear that investment is needed in east-west connections such as the M1-A6 Link.*
- *Alongside this housing growth, Central Bedfordshire Council aims to create a minimum of 24,000 new jobs over the period 2015 to 2035. Within this figure, around 6,000 jobs will be delivered to meet 'footloose' strategic warehousing (B8 uses) on major strategic employment sites, of which includes the Sundon Rail Freight Interchange and North of Luton Strategic Allocations.*

5. Need for intervention

5.1 Problems, issues and opportunities

This section summarises the current and future land use and transport-related problems, issues and opportunities identified along the route and surrounding communities. This is derived from the preceding analysis of the existing and future situation.

5.1.1 Housing affordability and growth

Housing affordability is a problem across the UK and specifically within the South East Midlands and neighbouring counties, constraining the ability of growing industries to fulfil their potential and for people to own their own homes. It is a key priority for Government and has contributed to the production of a white paper and an increased emphasis in the expanded Ministry of Homes, Communities and Local Government.

Population growth in Central Bedfordshire reflects the attractiveness of the area as a place to live and work, its connectivity and relative affordability. Central Bedfordshire Council needs to deliver unmet housing demand that neighbouring authorities and their urban areas are unable to deliver because of various constraints. This means that Central Bedfordshire aims to deliver 39,350 new homes in the period 2015 to 2035, including 23,528 homes that are already planned for or built.

Even with a premium on new high quality homes, these will help to make a positive contribution to both the national and regional housing shortages. Additional high quality homes also provide the opportunity to attract high skilled labour to the area to address labour market constraints holding back productivity and growth.

A key component of this growth is the North of Luton Strategic Allocation that includes 4,000 homes enabling unmet demand in the Luton area to be sustainably accommodated. To deliver this growth and wider growth in Central Bedfordshire, the Local Plan makes clear that investment is needed in east-west connections such as the M1-A6 Link alongside appropriate community infrastructure.

Previous and ongoing work undertaken by the Council has shown that this level of growth could not be released without the Link Road. Connections via existing roads that join to the M1 or A6 would pose significant and unacceptable levels of delay and congestion on existing routes or require the use of substandard routes which is all exacerbated by a lack of high quality road crossings of the Midland Mainline in the Luton area. As such with no road component any applications for development would be considered unacceptable in planning terms.

Developers are however unable to fund the full cost of transport and related infrastructure to deliver a viable development proposition. They are expected to provide a significant contribution to the scheme, hence the need for this Business Case.

5.1.2 Jobs and business growth

Luton and Central Bedfordshire experiences a productivity gap in relation to the wider South East Midlands and the rest of England. This is a complex problem driven both by access to labour markets, the quality and age of employment land, the space for firms to locate and expand in the region, and the transport connections between firms, labour markets, suppliers and vendors.

There is nevertheless a solid basis to work from. There has been a substantial increase in business start-up activity in Luton and Central Bedfordshire since 2012. The new Woodside Link Road north of Dunstable, Luton and Houghton Regis – made possible through LGF funding – alongside the construction of the M1-A5 link to Leighton Buzzard, has already led to more than 50 new deals for industrial and distribution units across Dunstable, Houghton Regis and Leighton Buzzard. Work by Savills reported in the SEMLEP Strategic Economic Plan suggests that demand for warehousing on the M1 corridor continues to outstrip supply. This alongside improving business perceptions and high skills levels within Central Bedfordshire suggest that the area is a good place for firms to start and grow their business. The provision of new homes and further employment space in tandem with existing skills initiatives will help contribute to closing that productivity gap.

The M1-A6 Link can facilitate the creation of some 2,000 new jobs associated with 20 ha of employment land on the western edge of the Land North of Luton strategic allocation. A further 1,000 jobs can be generated as a result of the provision of 40 ha of employment land associated with new rail freight interchange alongside the M1, located on the Midland Mainline. These are likely to be associated with a combination of new firms for the area and the scale up of existing firms from small to medium size in the need of greater land. These jobs would not come forward without the M1-A6 Link in place.

The importance of getting local people into these jobs and developing their skills is apparent when considering demonstrate the prevalence of social exclusion and economic marginalisation of some parts of the local community as described below.

5.1.3 Deprivation

The North of Luton and to a lesser extent Dunstable and Houghton Regis is in need for regeneration, including the provision of housing and employment opportunities to meet the needs of a growing population. Community activity and social interaction need to be enhanced and barriers to healthcare, education, skills development and retail services need to be secured.

The importance of getting local people into these jobs is apparent when considering a number of statistics which demonstrate the prevalence of social exclusion and economic marginalisation of some parts of the local community, as highlighted in Table 5.1 below.

Table 5.1: Deprivation in the local area

Criteria	Luton	Dunstable-Houghton Regis
Deprivation	Thirty-six Lower-layer Super Output Areas within Luton are in the 25% most deprived[53].	Five Lower-layer Super Output Areas in Dunstable-Houghton Regis are in the most deprived 25% in the country.
Unemployment	In Luton levels of unemployment are around 5.8% compared to 5.4% across England as a whole[54].	Unemployment in three Dunstable-Houghton Regis wards is higher than the national average notably in the Tithe Farm, Dunstable Manshead and Houghton Hall wards.

Luton Borough Council is already investing in regenerating the Marsh Farm area, with Central Bedfordshire Council also investing in Dunstable and Houghton Regis through a range of initiatives. The North of Luton Strategic Allocation would complement these initiatives providing additional facilities, job opportunities and access to the countryside. As noted this needs a scheme such as the M1-A6 Link to make it happen.

5.1.4 Need to make sustainable modes a real option within the North of Luton and Sundon Strategic Allocations

Alongside a M1-A6 Link, plans for the North of Luton and Sundon Strategic Allocations also include a requirement for walking, cycling and public transport measures to connect existing communities, businesses and the countryside with the new development for the full range of journey purposes (employment, education, skills, retail, health, leisure) to maximise the benefits of the new road capacity unlocked, and avoid a car dependent culture. The Local Plan makes clear that this will involve as a minimum public transport links to Leagrave station, Luton town centre, cycling connections to NCR6 and access to the countryside, public rights of way and open space by walking, cycling and horse riding.

5.1.5 East-west connectivity

While the region has strong north-south links by road and rail, east-west connectivity is poor by all modes. This is especially relevant in a region that has many similar sized centres with complementary and overlapping

[53] https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015
[54] Figures from 2015 sourced from: https://www.nomisweb.co.uk/

economic markets. While some action has been taken to address this problem across SEMLEP such as the A5-M1 Link, improvements to the A421 and plans for the Oxford-Milton Keynes-Cambridge Expressway, and East West Rail, more needs to be done to help people and businesses within Luton-Dunstable-Houghton Regis conurbation benefit from links to people and businesses with complementary skills, services and products.

The area presents generalised congestion problems in the road network, including constrained capacity to access Luton Airport. Current levels of congestion and delay are particularly acute on the A6 into Luton and in Luton town centre itself, a fact exacerbated by the lack of a strategic east-west links to the north of the town. Surrounding villages and the wider urban area also suffer from this lack of alternatives.

5.1.6 Access for freight and logistics

SEMLEP's Strategic Economic Plan notes the importance of the logistics industry to the region's economy, with the growing London Luton Airport important. However increased congestion, a lack of suitable routes, a shortage of land for expansion and competition from other areas is a challenge for the sector to overcome.

A specific problem related to east-west connectivity is the lack of suitable east-west routes for HGV traffic between the M1, A6 and existing businesses in and around the Luton urban area. This is exacerbated by notable clusters of HGV orientated manufacturing and distribution industries in the Luton alongside corridors such as the B579 and Sundon Park Road. While these firms have been attracted to the area because of the strong north-south links provided by the M1, customers and suppliers are also located to the east and north east of Luton.

The Midland Mainline presents a notable constraint with a series of height limited bridges north of Luton town centre, resulting in HGVs being permitted to use otherwise substandard routes in the Luton urban area and Sundon. This contributes to significant HGV volumes as a percentage of overall traffic on roads such as Icknield Way in Luton (15-18%) and Streatley Road / Manor Road (23-26%). Neither road's form or function is designed for this use, and this has contributed to safety issues on both roads.

Land is allocated within the Framework Plan for the North of Luton for the provision of a new Rail Freight Interchange (RFI) at Sundon. This facility of national and regional importance will provide a realistic alternative to the road based haulage of freight for logistics companies in the wider sub-region. This allocation also includes employment land which can be used for office, industrial and warehousing uses, which the region needs. The RFI should enable a net reduction in HGVs from the strategic highway network with the congestion, safety and environmental benefits that entails, whilst also improving the competitiveness of businesses using the Interchange. It will also via its connection to the M1-A6 Link and appropriate traffic management measures on unsuitable local roads, allow vehicles accessing it to use the most appropriate roads, designed for HGV traffic.

It aligns with the national approach to freight and rail movements detailed within the DfT's Strategic Rail Freight Interchange Policy Guidance, but is only possible with the provision of the Link Road from the M1 and which will bridge the existing Midland Mainline to provide access to the site.

5.1.7 Road safety and air quality

The amount of traffic travelling through the north of Luton and nearby towns and villages negatively affect air quality and road safety in the neighbourhoods, exacerbating the deprivation in these communities. Air Quality Management Areas exist in Luton and Dunstable town centres and near Junction 11 of the M1. These are all associated with NO_2 pollutants.

Initial analysis of collision data has highlighted clusters of accidents on Streatley Road / Manor Road to the north of Luton and on east-west radial routes in the north of Luton urban area.

5.1.8 Environmental constraints

Any greenfield development will involve a degree of impact on the natural environment. The road is within the current Greenbelt and adjacent to the Chilterns AONB. The Local Plan includes provision to shift the Greenbelt boundary. The scheme design will require careful consideration to minimise the impact on the environment and

future receptors, such as the residents of the new community on which they depend on a new road, but need it to help contribute to a sense of place and not hinder access to the countryside.

Key Observation

The key issues are as follows and these have helped to shape the scheme objectives are as follows and align with four broad themes relating to (i) growth and regeneration, (ii) traffic, (iii) freight, and (iv) the environment:

- *Housing affordability and the need to plan for significant growth*
- *Employment land for jobs and business growth*
- *Deprivation*
- *Need to make sustainable modes a real option within the North of Luton and Sundon Strategic Allocations.*
- *East – west connectivity*
- *Access for freight and logistics*
- *Road safety and air quality*
- *Design the road to be sensitive to environmental constraints.*

5.2 Impact of doing nothing

If left unaddressed, the current issues identified above would all be exacerbated over time with the following potential consequences

The impact of the road not being built relates back to the problems the scheme could address and the opportunities it would generate once in place. These issues and opportunities relate to (i) Growth, (ii) Traffic, (iii) Freight and the (iv) Environment would all be impacted adversely if the road were not to materialise.

Growth

Central Bedfordshire Council would be in a position where it would struggle to meet its five-year land supply for new houses. This is a statutory requirement for all local authorities[55] and may result in more piecemeal development coming forward which the authority would struggle to resist.

It would see the ongoing housing pressures in the area intensify[56] and the see the failure of a strategically important development to be delivered after being earmarked as an appropriate location for growth in successive Local Plans.

In addition, the opportunity to generate over 3,000 new jobs would be lost and the role that would play in helping to reduce the levels of deprivation in nearby wards, whilst the economic competitiveness of the sub-region would also be curtailed with businesses subject to increasing delays and travel costs as a result of increasing volumes of traffic. Business would also continue to suffer from a short fall in suitable employment land for expansion, particularly in terms of warehousing.

The productivity of Bedfordshire and the wider South East Midlands would be hindered with no change in firms' connectivity to suppliers, customers and workers to the east and west of Luton

Traffic

Current levels of congestion and delay would be expected to increase without the road in place. Opportunities to reallocate existing road space to more sustainable forms of travel would be lost as would other potential safety benefits the removal of through traffic could have facilitated.

[55] National Planning Policy Framework, paragraph 47, second bullet point: "Identify and update annually a supply of specific deliverable sites sufficient to provide five years' worth of housing requirements"

[56] http://www.luton.gov.uk/Environment/Lists/LutonDocuments/PDF/Local%20Plan/Housing/HOU%20003c.pdf

Freight

The Rail Freight Interchange at Sundon will not be accessible without the Link Road in place. There would be no access to the site and the ability to secure the more sustainable movement of freight would be lost.

HGVs would continue to use unsuitable routes in the Luton urban area and to the north of Luton, and Central Bedfordshire Council would be unable to implement appropriate traffic management initiatives akin to what has been introduced since the opening of the A5-M1 Link to remove HGV traffic from inappropriate roads and return these local roads to local journeys, cyclists and horse riders.

Well located employment land including warehousing would not be brought forward and contribute further to the challenges of a sector seeking to grow in the South East Midlands and along the M1 corridor generally.

Environment

Some issues such as impact on the AONB which the road design needs to take into account would of course not materialise. However Central Bedfordshire Council would still need to deliver growth to meet unmet housing demand in Luton. Existing impacts of traffic in the AONB such as HGV traffic through Sundon and Streatley would remain, as would air quality problems in the Luton urban area.

6. Scheme objectives and measures for success

This section outlines the overall aim and core objectives of the M1-A6 Link that the scheme intends to deliver, as well as objectives considered by previous works over the scheme's history.

6.1 Scheme objectives

Figure 6-1 outlines the overall aim and objectives of the M1-A6 Link. These have been developed by Central Bedfordshire Council, SEMLEP and Jacobs, building on the objectives presented within the SEMLEP pro-forma submitted in 2016 to receive initial funding. These have subsequently been revisited upon analysis of the issues identified in Chapter 5.

Figure 6-1. Aims and Objectives for the M1-A6 Link.

Overall Aim
To provide infrastructure to facilitate growth.
Core Objectives
Provide increased capacity: Reduce congestion and journey times.
Improve connectivity to socio-economic opportunities.
Create safe communities that are attractive to both residents and businesses.
Wider Objectives
Improve competitiveness of businesses
Improve east-west connectivity within the region
Facilitate jobs and business scale up
Enable housing growth by opening up land for development
Reduce carbon emissions and noise impacts and improve local air quality
Encourage more walking, cycling and public transport trips (to improve the environment, people's health and wellbeing and their access to education, skills, employment, healthcare, retail and leisure opportunities)

6.2 Fit of scheme objectives with wider policy objectives

A review of pertinent planning documents has been undertaken to identify how the M1-A6 link scheme as it stands fits with national, sub-regional and local policy. Details of these policies are provided in Appendix B with a summary of the strategic fit of the scheme objectives with policy provided below. Further commentary on how the preferred scheme aligns with policy is provided in Appendix B with a summary of the key findings in Section 10.2.

This section of the Business Case will be kept under review as Government policy evolves between now and submission of the FBC in 2020.

Policy	**Scheme objectives**								
	C1	**C2**	**C3**	**W1**	**W2**	**W3**	**W4**	**W5**	**W6**
National Policy									
Proposals for the Creation of a Major Road Network Consultation, December 2017	✓			✓		✓	✓		
Industrial Strategy – Building a Britain fit for the future, November 2017		✓		✓		✓		✓	
Clean Growth Strategy, October 2017				✓		✓		✓	
Department for Transport: Transport Investment Strategy, July 2017	✓	✓		✓		✓	✓		✓
Department for Communities and Local Government: Housing White Paper, February 2017			✓				✓		

Policy	Scheme objectives								
	C1	C2	C3	W1	W2	W3	W4	W5	W6
National Infrastructure Commission Report – Congestion, Capacity, Carbon: Priorities for National Infrastructure, November 2017	✓	✓	✓			✓	✓	✓	
Partnering for Prosperity: A new deal for the Cambridge-Milton Keynes-Oxford Arc, November 2017	✓	✓	✓		✓	✓	✓		
Department for Transport: Single Departmental Plan 2015-2020, October 2016	✓	✓		✓		✓			
Rail Freight Strategy, September 2016	✓							✓	
National Planning Policy Framework, July 2018	✓	✓	✓	✓		✓	✓		✓
National Infrastructure Delivery Plan 2016 to 2021, March 2016	✓	✓		✓		✓		✓	
Surface transport to airports – House of Commons Transport Committee, February 2016	✓							✓	
Sub-Regional Policy									
South East Midlands Strategic Economic Plan (Autumn 2017)		✓	✓	✓	✓	✓	✓		
SEMLEP Local Industrial Strategy Emerging themes (July 2018		✓		✓	✓	✓			
SEMLEP Transport Strategy (March, 2014)	✓	✓		✓	✓	✓			
England's Economic Heartland Planning for Growth (October, 2016)	✓	✓		✓	✓	✓	✓		
England's Economic Heartland Strategic Road Investment Priorities (September, 2017)	✓	✓		✓	✓	✓	✓		
Hertfordshire Local Enterprise Partnership Strategic Economic Plan 2017-2030 (July 2017)					✓				
Local Policy									
Central Bedfordshire Local Plan 2015-2035, Pre-Submission (January 2018)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Luton Local Plan 2011-2031 (November 2017)	✓	✓	✓	✓	✓	✓	✓	✓	✓
North of Luton and Sundon Rail Freight Interchange Strategic Allocations Framework Plan (March 2015)	✓	✓		✓	✓			✓	✓
Central Bedfordshire Local Transport Plan 4 (April 2016)	✓	✓	✓		✓			✓	✓
Luton Local Transport Plan 2011-2026 (March 2011)				✓	✓				✓
Central Bedfordshire Council Five Year Plan (July 2015)		✓			✓	✓			✓

Overall aim – To provide infrastructure to facilitate growth.

Core objective 1 – Provide increased capacity: Reduce congestion and journey times.

Core objective 2 – Improve connectivity to socio-economic opportunities.

Core objective 3 – Create safe communities that are attractive to both residents and businesses.

Wider objective 1 – Improve competitiveness of businesses.

Wider objective 2 – Improve east-west connectivity within the region.

Wider objective 3 – Facilitate jobs and business scale up.

Wider objective 4 – Enable housing growth by opening up land for development.

Wider objective 5 – Reduce carbon emissions.

Wider objective 6 – Encourage more walking, cycling and public transport trips (to improve the environment, people's health and wellbeing and their access to education, skills, employment, healthcare, retail and leisure opportunities).

As shown above, the scheme objectives have a strong synergy with national, sub-regional and local policy. Each objective aligns with multiple policies. The objectives formed part of the appraisal process when appraising potential options.

6.3 Measures for success

The *Management Case* provides a clear logic model developed in line with SEMLEP's Monitoring and Evaluation Framework.

This has been established with regards to the core aim, scheme objectives and wider objectives which hope to be achieved. The Benefits Realisation Plan, which will be produced in the FBC, will outline how far these scheme objectives are able to generate desired outputs and outcomes, as 'measures for success'.

The desired outputs and outcomes of the scheme are outlined with reference to each objective in **Table 6.1**. It is understood that due to the nature of the scheme, most benefits will only be able to be realised once the road is completed. The *Management Case* provides further details on how these outcomes could be measured.

Table 6.1: M1-A6 Link - Measures for Success: Scheme Objectives, Desired Outputs and Outcomes

	Objectives	Desired Outputs	Desired Outcomes
Aim	To provide infrastructure to facilitate growth.	• A new road corridor between the M1, A5 and A6 that balances growth, movement (by all modes) and a sense of place and community; • Appropriate environmental mitigation in the delivery of temporary and permanent works; • Delivery within available funding constraints; • Strike appropriate balance between further design preparation costs, total installed costs and delivery programme based on risk and complexity (time, cost and quality); and • Place risk ownership with the most appropriate party to manage them, to reduce risks as far as reasonably practicable.	• Support the achievement of Central Bedfordshire Council's Five Year Plan - i.e. a great place to live and work; • Support the delivery of the Local Plan and SEMLEP Economic Strategy; • Maximise development viability and hence contributions for infrastructure; • Value for money for HM Treasury and Central Bedfordshire Council; and • Cost certainty for Central Bedfordshire Council.
Core Objectives	Provide increased capacity on the local highway network: Reduce congestion and journey times.	• Appropriate capacity for all modes.	• Reduced delays; • Shorter journey times for commuters and businesses; and • Reduced emissions from traffic.
	Improve connectivity to socio-economic opportunities.	• Provide opportunities for local and regional businesses in the scheme's construction; and • Explicit provision for all key desire lines and non-car modes in the scheme design making reference to best practice and guidance. This should include links to Marsh Farm, Sundon Park, Chalton, Houghton Regis and the countryside.	• Construction skills legacy and business scale up; and • Reduced unemployment and deprivation.
	Create safe communities that are attractive to both residents and businesses.	• Safe by design during construction, operation and maintenance	• Reduced number and impact of accidents in the Luton-Dunstable-Houghton Regis conurbation and surrounding rural areas

	Objectives	Desired Outputs	Desired Outcomes
Wider Objectives	Improve competitiveness of businesses.	• Minimise impact on road and rail users in its construction (M1 J11a, A6 and Midland Mainline interfaces)	• Improved business productivity and investment in the South East Midlands • Shorter journey times for businesses • Minimal delays during construction
	Improve east-west connectivity within the region.	*See others above*	*See others above*
	Facilitate jobs and business scale up.	• Support the early delivery of 4,000 new homes and 20 hectares of new employment land associated with the sustainable urban extension, as well as a strategic rail freight interchange with a further 40 hectares of employment land at Sundon	• Availability and affordability of housing stock for local residents • Help support creation of 3,000 new jobs • Reduce local unemployment and deprivation and remove freight from the road network • Maximise developer contributions
	Enable housing growth by opening up land for development.	• Phased delivery as part of a continuous construction programme.	• Availability and affordability of housing stock for local residents; • Help support creation of 3,000 new jobs; • Reduce local unemployment and deprivation and remove freight from the road network; and • Maximise developer contributions.
	Reduce carbon emissions and noise impacts and improve local air quality	• Monitor impacts through the WebTAG appraisal process.	• Improved health and wellbeing through improved local air quality and reduced noise; and • Reduced carbon emissions by helping to remove freight from road network and reduced congestion.
	Encourage more walking, cycling and public transport trips	• Explicit provision for all key desire lines and non-car modes of transport, making reference to best practice and guidance; and • Allow the local road network to be re-focussed on local journeys by all modes.	• Increased opportunity for walking, cycling, public transport and horse riding, including access to services and the countryside from new and existing communities; • More appropriate routeing of traffic away from the local road network in Luton and surrounding villages; and • Provide an opportunity to reclassify specific roads and reallocate road space in the north Luton urban area to support public transport, walking and cycling and reduce traffic volumes.

7. Scheme scope

7.1 Scheme outputs

The scheme will deliver the following outputs (these are described for Option 1 – the Preferred Option following the conclusion of the SOBC analyses). Its alignment and general arrangement is shown in Appendix C. In total the link road and junctions will be 4.2km in length between the M1 and A6.

- Junction modifications to M1 Junction 11a to incorporate the Link Road access and egress in the eastern roundabout.
- Link road between M1 Junction 11a and a realigned Sundon Park Road comprising:
  - 530 metres of dual 7.3-metre wide carriageway road with 1-metre wide hard strips on each side of each carriageway and road restraint systems for the 2.5-metre wide central reserve and within a 2.5-metre wide verge
  - New structure to carry the link road over the B579, 4 track Midland Mainline and Camford Byway Open to All Traffic with road restraint systems;
  - New intermediate roundabout junction with c. 70 metre inscribed circular diameter (intermediate junction #1) for access to the Sundon Rail Freight Interchange and Sundon Park Road.
- Link road between the realigned Sundon Park Road and intermediate junction 2 comprising
  - 2190 metres of single 7.3-metre wide single carriageway (3.65-metre wide lanes) with 1-metre hard strip and 2.5-metre wide verge with road restraint systems
  - Stopping up Sundon Park Road where it crosses the alignment of the M1-A6 Link to motorised traffic, but providing a crossing point for walking, cycling and horse-riding
  - Sundon Wood overbridge providing traffic free access between public rights of way and the sustainable urban extension
  - Intermediate roundabout junction #2 with c. 40 metre inscribed circular diameter to provide access to the North of Luton Sustainable Urban Extension.
- Link road between intermediate junctions 2 and 3 comprising
  - 1090 metres of single 7.3-metre wide single carriageway (3.65-metre wide lanes) with 1-metre hard strip and 2.5-metre wide verge with road restraint systems
  - Great Bramingham Wood subway providing traffic free access between public rights of way and the sustainable urban extension
  - George Wood Green overbridge providing traffic free access between public rights of way and the sustainable urban extension
  - Flaring of the carriageway and 150 metres of dualling for the western approach to Intermediate junction #3 (signalised junctions) to provide access to development plots at the eastern end of the M1-A6 Link Road.
- Link road between intermediate junction 3 and the A6 Barton Road comprising
  - 280 metres of dual 7.3-metre wide carriageway 3.65-metre wide lanes) with 1-metre hard strip and 2.5-metre wide verge with road restraint systems
  - New roundabout junction with the A6 with c. 70 metre inscribed circular diameter, offset to the west of the existing A6 alignment.
- Approximately 750 metre of single carriageway and footway/cycleway for the realigned Sundon Park Road linking its current alignment immediately to the north of the Luton area via intermediate junction 1 to Sundon Road for onward connection to the Sundon Rail Freight Interchange.
- 3-metre wide shared use footway / cycleway set back on the south side of the link road with appropriate crossing provision at junctions.
- Appropriate landscaping and noise attenuation measures to mitigate the impact of the road on the natural and built environment and the future sustainable urban extension.

- Sustainable drainage features.

Subject to approvals the scheme would commence construction in 2020 for opening in 2022.

7.2 Out of scope

The following items are currently out of scope but would be developed in parallel by the North Luton Consortium, Prologis (developers of the Sundon Rail Freight Interchange) and Central Bedfordshire Council

- Pedestrian / cycle access between Sundon Park Road, Camford Way and the B579 Luton Road (to be determined).
- Roundabout junction for the Sundon Rail Freight Interchange on Sundon Road.
- Development access arrangements on to the realigned Sundon Park Road.
- Internal development roads, cycleways, footways within the SA1 Strategic Allocation to connect with the M1-A6 Link and existing local roads, cycleways, footways, open space and public rights of way in the Luton urban area.
- HGV management plan and traffic regulation orders for Sundon Road and other relevant rural roads north of Luton.
- Reclassification and / or renumbering of roads (to be determined).
- Related to the above new route direction and other road signs in Luton, Central Bedfordshire and on the Strategic Road Network.
- The scope also does not include any traffic management measures within the area administered by Luton Borough Council to capitalise on opportunities presented by the link road to remove HGV and through traffic from urban unclassified roads.

8. Constraints, interdependencies and stakeholders

8.1 Introduction

This section provides a brief overview of constraints (i.e. planning), interdependencies (both upon which the scheme is dependent, and other interventions which are dependent on the scheme) and stakeholder views.

8.2 The planning position

8.2.1 Central Bedfordshire Development Strategy 2014

The proposals at Land North of Luton and Sundon RFI were identified as strategic allocations in the Joint Core Strategy for Luton and Southern Central Bedfordshire (2011). This document was prepared jointly by Central Bedfordshire Council and Luton Borough Council between 2007 and 2010 and was informed by four stages of extensive consultation.

Following the withdrawal of this plan in 2011, the proposals were subject to further robust assessment and consequently identified as allocations in the draft Development Strategy. The Development Strategy was Submitted in 2014 and the Public Examination commenced in February 2015. The Inspector at this time felt that the Council had not met the requirements of the Duty to Cooperate and recommended that the Plan be withdrawn.

The Council commenced Judicial Review proceedings against the Inspector's decision in 2015 but following significant changes to housing figures and the consenting of the majority of schemes within the Plan, it became clear that if the Judicial Review proceedings were successful and the Examination reconvened, the plan would likely to have been considered out of date.

For this reason, a decision was made to formally withdraw the Development Strategy in November 2015. The soundness of the North of Luton and Sundon RFI allocations described below and the subject of a Framework Plan were not formally tested through this process.

8.2.2 North of Luton & Sundon Rail Freight Interchange Strategic Allocations Framework Plan 2015

This Framework Plan was prepared by the Council in consultation with the North Luton Consortium[57] and Prologis to give further clarity and detail around the strategic allocations identified in the Central Bedfordshire Development Strategy. Its intention was to demonstrate how the draft policies would be delivered.

It was also to act as a guide to inform future masterplans and planning applications for the site, with a vision for the creation of a series of developments separated by green corridors linking Luton with the wider countryside. The commercial area and Sundon RFI is identified at the western end of the development closest to the new M1 J11a. These areas of development will form distinctive places, whilst ensuring that they appropriately integrate and connect.

The Framework Plan was subject to extensive consultation and the Council actively engaged with technical specialists, stakeholders and officers in preparing the plan on specific areas such as transport, as well as Luton Borough Council in accordance with the Duty to Cooperate. This Plan detailed the preferred alignment of the M1-A6 route as a consequence of previous option assessment and studies undertaken by the Council and its predecessors.

The Framework Plan was published for a formal period of public consultation and was formally adopted on 31 March 2015.

[57] The North Luton Consortium is a group of land owners and developers with land options who are working together to take forward the development.

The Framework Plan noted that the planned development (including residential, commercial and the RFI) are expected to "form distinctive places, whilst ensuring that they appropriately integrate and connect" (p10). Key points that the M1-A6 Link will need to help the new character areas achieve:

- Connecting with their surroundings – through safe and convenient routes for all modes of travel
- Help form new communities – where people will have a good quality of life
- Contribute towards a sustainable future – with places with climate change mitigation built in, and with a low impact on or improvement on the environment, health and well-being of residents
- An emphasis on good design
- Provide for new businesses and employment opportunities
- Conserve and enhance the Area of Outstanding Natural Beauty, countryside and local heritage, including people's access to it

These are aims that will need to guide the detailed design and subsequent appraisal of the scheme.

8.2.3 Central Bedfordshire Local Plan

The authority is seeking to adopt a Local Plan in 2018. The M1-A6 Link is included as a key component of Policy SA1: North of Luton which sets outs a Strategic Allocation for the North of Luton. Pertinent paragraphs[58] include:

2."It is critical that development of this site is supported by a comprehensive scheme of highway improvements to mitigate the impacts of the development including an appropriately designed a routed new road to link the A6-M1 Junction 11a, the development shall provide the land and commensurate financial contributions towards its delivery."

3. "The development will be phased in accordance with the timing of supporting infrastructure and community facilities including the delivery of the Link road, which shall be delivered as soon as viably possible. The phasing of the road will commence from the west, with the first phase a dual carriageway between M1 Junction 11a and Sundon Park Road to facilitate access to the first phase of development and Sundon RFI employment allocation"

5. "The development shall Integrate and connect to existing public rights of way within and adjoining the site to provide routes to the wider countryside and neighbouring settlements. The development shall include a cycleway connection to route 6 of the national cycleway network and will be required to provide new crossings on the A6 and crossings over the new link road to improve and maintain connections; it is essential that the development contributes towards the delivery of and is served by an appropriately designed and routed new link road between the A6 and M1 Junction 11a;

9. "The development shall ensure that the design and construction of the development as a whole including the A6 to M1 junction 11a link road has no undue impact on the AONB, heritage assets and biodiversity and provides for the mitigation and enhancements where feasible. With the exception of the link road any major built development within the AONB shall require exceptional circumstances to be demonstrated and shall only be permitted where it can be demonstrated it is in the public interest".

Planning applications for both the road and development are expected to align with these requirements. These planning applications will be through the Town & Country Planning Act. The intention of Central Bedfordshire Council is that a Planning Application for the M1-A6 scheme will be submitted in January 2019 for determination in spring 2019.

[58] http://www.centralbedfordshire.gov.uk/Images/pre-submission-local-plan-compressed-v2_tcm3-27081.pdf, p.53-55

8.3 Interdependencies

8.3.1 Key interdependencies

In transport terms the successful delivery of the M1-A6 Link is dependent upon the necessary approvals from Network Rail to bridge the Midland Mainline and Highways England to make modifications to the M1 Junction 11a eastern roundabout to incorporate the western end of the M1-A6 Link.

In development terms, the road is dependent on development at Land North of Luton and Sundon RFI coming forward and this Strategic Allocation and the Local Plan being found sound in the Local Plan Examination during 2018. Whilst the road provides many benefits in its own right, it is when additional growth in the local area is realised that it fully justifies its provision. The inter-dependencies between the road and the development are such however, that one cannot be considered without the other – without the development the road will have a significant funding gap, without the road the land will not be accessible for development. The alignment is entirely within the North of Luton Consortium land ownership.

The provision of the Rail Freight Interchange at Sundon is also subject to the successful delivery of the M1-A6 scheme.

At a more local level, the ability to implement route or area wide HGV route management schemes and consider the reallocation of road space and thereby promote more sustainable local journeys is subject to the removal of through traffic from unclassified local roads.

Finally, capital investment provisionally allocated to the scheme through SEMLEP's Local Growth Fund Allocation must be spent by March 2021. This means that for scheme construction beyond 2021, this portion of the scheme will need to make use of developer funding or other to be determined funding sources. In this context it is useful to consider whether planned development north of Luton is capable of delivering the scheme to ensure that public money is being used for a clear case of market failure.

8.4 Stakeholder attitudes

8.4.1 Introduction

This section provides an overview of attitudes gleaned from previous consultation on the Framework Plan for the North of Luton and Sundon Rail Freight Interchange Strategic Allocation (2014/15), the Central Bedfordshire Local Plan Resubmission Draft (2018), ongoing dialogue with Luton Borough Council (LBC) and a series of public exhibitions in July 2018 to seek ideas and feedback from local people. This section will be updated at the OBC stage with further detail following public consultation and the planning application submission.

8.4.2 Evidence of early buy-in from key environmental stakeholders

Information has been sourced from the Executive Report by CBC[59] on 31 March 2015 in relation to the 'Land North of Luton and Sundon Rail Freight Interchange (RFI) Draft Framework Plan'. CBC adopted its Framework Plan for the North of Luton site including the M1-A6 road alignment following this Executive Meeting.

The Executive Report noted that the Framework Plan produced had followed extensive consultation and engagement including technical specialists, stakeholders and officers in preparing the plan on specific areas such as the Chilterns AONB, transport, heritage and open spaces.

A five-week public consultation on the Framework Plan was held from 10 November to 15 December 2014. Two public exhibitions were held on 22 November at Sundon Village Hall and 28 November at Futures House in Marsh Farm, Luton. The public consultation was widely publicised amongst local residents in Central Bedfordshire and Luton and other interested parties.[60]

[59] Central Bedfordshire Executive Report, 31 March 2015 (accessed 16 November 2017)
[60] North of Luton and Sundon RFI Framework Plan Consultation Statement, March 2015 (accessed 16 November 2017)

Prior to the start of the consultation, detailed letters and emails were sent to:

- Statutory Consultees;
- Parish Councils;
- CBC and LBC Councillors;
- Local MPs (Andrew Selous, Kelvin Hopkins and Nadine Dorries);
- Libraries in LBC and CBC which were in close proximity to the site (with copies of consultation documents to make available for public inspection); and
- All those who had commented on the Development Strategy at Publication in 2014.

The public was also informed through:

- Leaflet drop to Streatley, Sundon, Chalton and the northern area of Luton;
- Posters;
- Social Media;
- Press articles within CBC's free News Central magazine and LBC's Lutonline monthly newsletter; and
- Press releases to all newspapers covering the Luton, Streatley and Sundon areas.

Although there was general support for the provision and route of the link road, the justification for its route was questioned particularly in relation to the need to pass through the southern edge of the Chilterns Area of Outstanding Natural Beauty (AONB). It was also suggested by some respondents that the link road should be extended to the east to connect with the A505 towards Hitchin.

In response to the feedback the plans were strengthened to provide extensive landscaping of the north of the site to provide an appropriate edge to the development and minimise any potential impact on the Chilterns AONB. Further text has been provided within the development plan document to clarify the uses within the Chilterns AONB and the mitigation measures to minimise any impacts, such as sensitive design and boundary treatments.

8.4.3 Evidence of early buy-in from Luton Borough Council

In producing the North of Luton Framework Plan, officers from CBC engaged proactively with LBC in accordance with the Duty to Co-operate. Specific meetings were held with transport and planning to discuss cross boundary issues and the approach to public consultation, with the following outcomes:

- Planning – the public consultation met the suggested requirements including attendance at the North Area Board meeting, a public exhibition in Luton, publicity in the north of Luton area and an article in LBC's 'Lutonline' publication.
- Highways – more emphasis was placed on sustainable transport opportunities in the Framework Plan.

The Luton Local Transport Plan 2011-2026 is LBC's third Local Transport Plan (LTP) and was published in 2011[61]. It is still a live document, with the Adopted Local Plan (2017)'s[62] strategy for sustainable transport in Luton based on the vision for the Local Transport Plan 2011-2026 which is to ensure that an integrated, safe, accessible and more sustainable transport system supports the economic regeneration and prosperity of the town.

According to Policy 3 of the LTP, new transport infrastructure development will be supported where it ***facilitates growth*** *and* ***improves access to strategic employment sites****. The LTP highlights the potential benefits that would result from improvements to the local transport system:*

[61] Luton Local Transport Plan 2011 – 2026, Luton Borough Council, March 2011 https://www.luton.gov.uk/transport_and_streets/transport_planning/local%20transport%20plan/pages/local%20transport%20plan%203%202011-2026.aspx accessed 12 April 2018

[62] Luton Local Plan 2011 – 2031, Luton Borough Council, November 2017 https://www.luton.gov.uk/Environment/Planning/Regional%20and%20local%20planning/Pages/Local%20Plan%202011%20-%202031.aspx accessed 12 April 2018

- *Economic growth by improving transport connections and **journey reliability, making Luton more attractive for businesses**;*
- *Protection of the environment by promoting less environmentally damaging ways of travelling;*
- ***Safer communities** by reducing the number and severity of **road traffic casualties**;*
- ***Healthier communities** by enabling people to walk or cycle more, and by reducing air pollution; and*
- *Support for vulnerable people and reduce inequalities by improving and ensuring equitable access to key services.*

The LTP also identifies the area between the M1 north of Luton and the A6 Barton Road (Luton Northern Bypass route) as a strategic transport scheme to meet future capacity requirements."

It is worth noting here that the benefits listed in LBC's Local Transport Plan mirror several key objectives of the M1-A6 Link (identified in bold above).

Central Bedfordshire Council and the Project Board will continue to engage with LBC at an appropriate level throughout the development of the M1-A6 project.

8.4.4 Feedback on Local Plan Allocations

As of April 2018, Central Bedfordshire Council is in the final stages of refining its Local Plan prior to submission for Examination[63]. The process of developing this Plan has provided several consultation opportunities for the general public to feedback on suggested allocations, including an initial 'Shaping Central Beds Consultation', Community Planning events, a Draft Local Plan Consultation and a Pre-Submission Local Plan Consultation. The latter consultation ran between January and February 2018, and proposed significant development and in the north of Luton including 4,000 new homes, community facilities, twenty hectares of employment land, and how these will be supported by the provision of the M1-A6 Link.

Planning Officers at Central Bedfordshire Council are in the process of analysing responses recorded during this event. Any key issues drawn from this consultation will then be assessed to determine whether any modifications should be proposed to the independent Planning Inspector during Public Examination.

8.4.5 Scheme drop-in sessions

Central Bedfordshire Council held five public afternoon drop-in sessions in July and August 2018. Events were held at Streatley Village Hall, Houghton Regis Baptist Church, Chalton Village Hall, St Johns Parish Centre in Sundon Park and St Margarets Parish Centre, Luton. 532 members of the public attended these events.

At these events, members of the public could find out more about the scheme from representatives of Central Bedfordshire Council and Jacobs. This included members of both the transport and local plan teams given the strong interface with the North of Luton and Sundon Rail Freight Interchange Strategic Allocations. A graffiti wall was provided at each event with post-it notes to enable people to feedback suggestions and concerns.

Key themes that have emerged for consideration in the scheme design and development include:

- Planning and development interfaces, including Keech Hospice
- Environmental considerations such as noise, air pollution, flooding and the countryside
- Transport planning considerations such as congestion, route capacity, access points and junction philosophy
- Traffic management including pedestrian access between Sundon Village and Sundon Park and potential re-routeing effects of the road such as B655 Hexton Road in Barton.

[63] News and Consultations for Local Plan, Central Bedfordshire Council, 2018. (Accessed 11th April 2018)

9. Option assessment

9.1 Introduction

This Chapter provides details of the following:

- Brief overview of historic option identification and assessment – more detail can be found in the Option Assessment Report (Section 9.2)
- Overview of four options considered in the SOBC (Section 9.3)
- Assessment of options against scheme objectives (Section 9.4)
- Selection of the Preferred Option based on the Strategic Case (Section 9.5). The Economic Case provides further information around the value for money of the different options.

9.2 Overview of historic option identification and assessment

9.2.1 Overview of route alignments

Significant analytical work has been done in the past to assess the options for an M1-A6 Link in the form of feasibility studies, appraisals and public consultations. Previous studies have both evaluated the need for an M1-A6 Link as well as a longer M1-A6-A505 Link north east of Luton. These latter studies have also debated whether an 'inner' or 'outer' bypass of Luton would be more appropriate and potential route alignments (Figure 9-1). Table 9.1 cross-references the eight general route alignments for the Link that have previously been considered.

Figure 9-1 Route alignment options for M1-A6 Link.

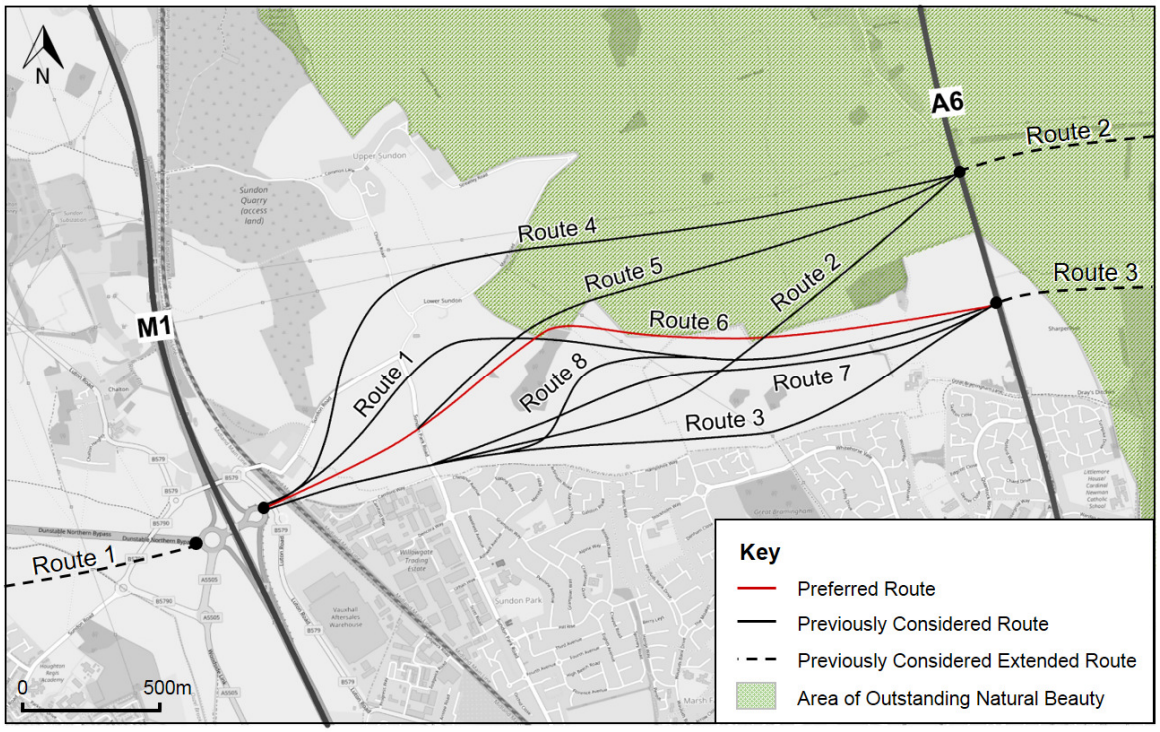


Table 9.1: Cross-reference of M1-A6 and M1-A6-A505 route alignments assessed in previous works.

Route Alignment (Ref. No.)	Thame – Stevenage (1980)	Halcrow (2006)	North Luton Consortium (2009)	Consultation Period (2009)	Amey (2011)	Framework Plan (2015) & Draft Business Case (2016)
1	Safeguarded	Safeguarded	-	-	-	-
2	F1	B	B	Grey	-	-
3	F2/2	A	A	Blue	W3	-
4	-	C	-	-	-	-
5	-	Cv	-	Green	W6	-
6	-	-	WSP Northern/WSP Northern (min AONB)	Orange	W2	Preferred Route
7	-	-	Cooper Partnership	-	-	-
8	-	-	-	-	W4	-

9.2.2 Summary of studies (1980 to 2018)

Table 9.2 summarises the stages of option generation and sifting that have occurred before a preferred alignment (Route 6) for an M1-A6 Link was selected in 2015. Further detail is then provided on each of these studies and their conclusions in sections 9.2.3 to 9.2.6.

Table 9.2 : Summary history of option generation and sifting.

Year	Study or activity
1980	Scheme initiated in the context of the wider Thame-Stevenage strategic route study which also included an A5-M1 Link. Routes 1, 2 and 3 identified as potential alignments.
1994	Bedfordshire County Council 'safeguards' Route 1 as preferred alignment for M1-A6 Link.
2006	Halcrow feasibility study of five bypass alignments (Routes 1, 2, 3, 4, 5) and a 'no bypass alternative'. Study finds a preference for an inner bypass, specifically Route 3 linking the M1, A6 and A505.
2007	Consultation to understand public preference towards an inner bypass, outer bypass or no bypass alternative. Outcome is inconclusive.
2009	Various studies and public consultation undertaken in 2009 • Bedfordshire County Council commissions separate studies to look at the case for the bypass or no bypass options. • North Luton Consortium reappraise previous Routes 2 and 3, new Routes 6 and 7 and a no bypass alternative. Study finds a preference for Route 6. • Peter Brett Associates appraise the need for a M1-A6 Link. Study finds a preference for no bypass alternative. • Consultation to understand public preferences towards Routes 2, 3, 5 and 6 and a no bypass alternative option. Consultation also included plans for the A5-M1 Link and Woodside Link since constructed. • Bedfordshire County Council report a preference for Route 3 linking M1 to A6 and A505. • Lack of support from Hertfordshire authorities for a route to the A505 given its adverse impact on land in Hertfordshire, the potential elevation of the strategic role of the A505 and existing traffic problems in Hitchin with no solution for them at that time. Inconclusive support on the M1-A6 Link in the absence of a strong rationale for the scheme provided at that time. • Inconclusive support from Highways Agency in the absence of traffic modelling.
2011	Consultants Amey assess previous Routes 3, 5 and 6 and new Route 8. • Assessment discounts Routes 3 and 5 on environmental ground and considers Routes 6 and 8 options deliverable. • Appraisal of A6-A505 link further to the east concludes that this is financially unviable and poor value for money in the short to medium term. South Bedfordshire and Luton Development Plan includes allocation for North of Luton although Development Plan then withdrawn in 2011.
2014-2016	Central Bedfordshire Development Plan including North of Luton Strategic Allocation developed although Development Plan withdrawn at Examination. Preferred alignment (Route 6) detailed in North of Luton and Sundon Rail Freight Interchange Framework Plan subject to extensive consultation with adoption in 2015. Single option appraised in 2016 using DfT's WebTAG guidance to inform SEMLEP Local Growth Fund Proforma. Prioritised for funding by SEMLEP as part of the Local Growth Fund 3 determination.
2017-2018	Local Plan developed and includes North of Luton and Sundon Rail Freight Interchange Strategic Allocations with provision for M1-A6 Link. Local Plan subject to Examination in 2018. Preferred alignment taken as the basis for the SOBC development. Option assessment to determine its suitable form and function to meet scheme objectives and Government's value for money framework.

9.2.3 Initial option generation and sifting (1980-2006)

Three potential options for alignment were identified in 1980 as part of the then Government plans for the wider Thame – Stevenage route. Bedfordshire County Council then published a proposed route 1 as the preferred alignment for the M1-A6 Link in 1994, which was ultimately accorded safeguarded status in the Bedfordshire Structure Plan in March 1997.

Pressure to provide development land to meet the areas housing requirements and employment opportunities prompted developers to become involved and a North Luton Consortium comprising Taylor Wimpey, Martin Grant Homes and Persimmon appointed consultants to bring forward land to the north of Luton for development. This work included "potential highway mitigation measures" for the whole development and included the Luton Northern Bypass.

In September 2004, consultants Halcrow were appointed by Bedfordshire County Council, Luton Borough Council and Go-East[64] to undertake a feasibility study into potential route options for a link between the M1 and the A505 north of Luton. Route 1, along with four other alignments and a 'no bypass' alternative, were appraised.

The results of that technical work, together with the responses to initial community and stakeholder consultation were summarised in the report to the meeting of the Luton and South Bedfordshire Joint Committee on 24 November 2005. The report indicated that some of the route options should be discounted, in particular those routes which had a significant adverse impact on the Warden and Galley Hills Site of Special Scientific Interest (SSSI). In particular, it concluded that the feasibility of 'safeguarded' Route 1 was compromised by its severance of heritage and wildlife sites, and as a result it was discounted as an option.

A second stage of stakeholder consultation and community involvement took place in February 2006 which, together with further technical work, was reported to the Joint Committee on 16 June 2006. This was inconclusive as to whether to take forward an inner (route 3) or outer (route 2) and a further public and stakeholder consultation on the two routes was undertaken as part of the consultation on the then Local Development Framework (LDF) Core Strategy for Luton and South Bedfordshire.

9.2.4 Appraisal work and public consultation (2007-2009)

The Issues and Options consultation for the South Bedfordshire and Luton LDF Core Strategy took place between July and October 2007 and included questions about the routes for a Luton Northern Bypass. A consultation (2007) was undertaken to understand public preferences for an 'inner' or 'outer' bypass or a no bypass solution. The outcome of this consultation was inconclusive, with roughly equal numbers in favour of each of the three options.

The Issues and Options Consultation for the Core Strategy was focused on the spatial distribution of the development, and it was not possible to present the level of information to enable the local community to make a proper comparison of the route options. The Joint Committee therefore agreed at its meeting on 30 June 2008 to carry out a separate public consultation exercise into the route options.

A full public consultation based on the detailed appraisal work was carried out in January/February 2009 and identified the 'Green and Black' outer routes which was approved by the Joint Committee on 20 March 2009 along with the need for further work on these and a non-road option.

Bedfordshire County Council commissioned Peter Brett Consultants in 2009 to undertake a study of the non-bypass options which could be considered in place of the M1-A6-A505 Link, or Luton Northern Bypass as it was referred to at the time[65]. The study was based on the four key objectives of the road being to tackle town centre congestion, dealing with strategic through traffic, enable new development opportunities, and reducing lorry traffic in surrounding villages.

Conclusions from the assessment highlighted that:

[64] The former Government Office for the East of England
[65] Luton Northern Bypass – Non Bypass Option Appraisal; Peter Brett Associates, 2009

- **Town centre congestion:** The road option would provide no greater benefit than non-road options.
- **Strategic through traffic:** Provides an alternative route for strategic traffic.
- **Development opportunities:** The road could serve new development sites to the north of Luton but it may harm the benefits it provides as a strategic route for through traffic.
- **Volume of HGVs in surrounding villages:** Lorries will continue to use rural roads to reach rural destinations but although it will provide benefits in terms of reducing congestion on strategic through routes.

Separately the North Luton Consortium (NLC) (2009) considered that non-bypass related alternatives were not significant enough to be able to counteract future traffic trends, unless they were implemented in conjunction with an M1-A6 Link. This report considered alignment 6 of all routes assessed (2, 3, 6 and 7) the most suitable option for this.

At this time doubts started to surface as to whether the outer route was deliverable, taking into account changes in expectations on development within the Area of Outstanding Natural Beauty (AONB), and appropriate layout to support development of land north of Luton.

Responses to the consultation made by Hertfordshire County Council (2009) and consultants acting on behalf of the Highways Agency (2009) suggested that the consultation exercise was not comprehensive enough to determine a preferable route to the A505, and North Hertfordshire District Council (2009) considered that all Link road options to the A505 were 'unacceptable'.

A summary report suggested that the consultation demonstrated preferences towards Route 3.

At the same time proposals at Land North of Luton and Sundon RFI were identified as strategic allocations in the Joint Core Strategy for Luton and Southern Central Bedfordshire (2011). This document was prepared jointly by Central Bedfordshire Council and Luton Borough Council between 2007 and 2010 and was informed by four stages of extensive consultation.

9.2.5 Post public consultation (2011-2015)

Consultants Amey (2011) were commissioned to re-examine possible routes, the assessment being required to identify the environmental, engineering, economic and traffic advantages, disadvantage and constraints associated with broadly defined improvement strategies.

During this work it was clear that any development within the AONB would be opposed by the Chilterns Conservation Board (guardians of the AONB) and other environmental pressure groups. Constraints were identified on route alignment, from the fixed position of M1 junction 11a (part of the A5-M1 Link Road) and the presence of significant woodlands and heritage sites.

The work produced an appraisal of three previously considered route options (Routes 3, 5 and 6) and one new option (Route 8). This was a high level stage 1 assessment that considered engineering feasibility, performance against environmental criteria and broad value for money using the assumed benefits from the Halcrow study of 2006.

All of the routes examined were considered to be technically feasible from an engineering perspective with similar Benefit Cost Ratios (BCRs). This assessment determined that Routes 3 and 5 should be taken no further for the following principal reasons:

- Route 3 would have a high development impact, and if constructed would lead to a poor standard of future development. High heritage impacts were also noted.
- Route 5 would have a high landscape impact and could have difficulties with the statutory process because of the AONB.

Instead the following routes were recommended for further development as part of Stage 2:

- Route 8 was considered to be technically deliverable. It avoided the AONB and had a lower impact on heritage and future development.
- Route 6 had a high heritage and landscape impact, but lower than the other discounted options. Assuming that the AONB issue could be resolved it would offer an attractive option, providing the lowest impact on future development and offering a cost effective solution.

Table 9.3 : Summary of 2011 Stage 1 Option Appraisal

Criteria	Option			
	6 (Route W2)	3 (Route W3)	8 (Route W4)	5 (Route W6)
Estimate, construction (median)	£102M	£98M	£112M	£113M
Estimate, 60-year maintenance	£99M	£93M	£93M	£95M
Whole Life Cost	£201M	£191M	£205M	£208M
Benefit Cost Ratio	**3.0**	**3.1**	**2.9**	**2.9**
Landscape & AONB	High adverse	Moderate adverse	Moderate adverse	High adverse
Ecology	Moderate adverse	Moderate adverse	Moderate adverse	Moderate adverse
Heritage	High adverse	High adverse	Moderate adverse	High adverse
Development	Neutral	High adverse	Moderate adverse	Neutral
Overall environmental performance	Moderate to High adverse	Moderate to High adverse	Moderate adverse	High adverse
Recommendation	Stage 2	Discount	Stage 2	Discount

Amey (2011) also undertook a route assessment report for a further A6 to A505 section to the east. This concluded that all the basic route options had a very high impact on the AONB and landscape, with some impacting areas designated as SSSI or with high heritage value. Where it was possible to develop route variants that mitigated these constraints in whole or in part (e.g. through tunnels), these were financially undeliverable with BCRs below 1.5. The conclusion was that there was no clear route between the A6 and A505 that could be achieved in the short to medium term, recommending that the focus should be on the M1-A6 link and demand management measures within Luton.

9.2.6 Central Bedfordshire Development Strategy 2014 and North of Luton & Sundon Rail Freight Interchange Strategic Allocations Framework Plan 2015

The joint development plan was withdrawn in 2011 and instead the proposals to develop land north of Luton were subject to further robust assessment and consequently identified as allocations in the draft Development Strategy. The Development Strategy was Submitted in 2014 and the Public Examination commenced in February 2015. The Inspector at this time felt that the Council had not met the requirements of the Duty to Cooperate and recommended that the Plan be withdrawn. A decision was made to formally withdraw the Development Strategy in November 2015. The soundness of the North of Luton and Sundon RFI allocations described below and the subject of a Framework Plan were not formally tested through this process.

This Framework Plan was prepared by the Council in consultation with the North Luton Consortium[66] and Prologis to give further clarity and detail around the strategic allocations identified in the Central Bedfordshire Development Strategy. Its intention was to demonstrate how the draft policies would be delivered.

[66] The North Luton Consortium is a group of land owners and developers with land options who are working together to take forward the development.

It was also to act as a guide to inform future masterplans and planning applications for the site, with a vision for the creation of a series of developments separated by green corridors linking Luton with the wider countryside. The commercial area and Sundon RFI is identified at the western end of the development closest to the new M1 J11a. These areas of development will form distinctive places, whilst ensuring that they appropriately integrate and connect.

The Framework Plan was subject to extensive consultation and the Council actively engaged with technical specialists, stakeholders and officers in preparing the plan on specific areas such as transport, as well as Luton Borough Council in accordance with the Duty to Cooperate. This Plan detailed the preferred alignment of the M1-A6 route as a consequence of previous option assessment and studies undertaken by the Council and its predecessors. This was Route 6.

The Framework Plan was published for a formal period of public consultation and was formally adopted on 31 March 2015.

9.2.7 Development of Draft Strategic Outline Business Case and SEMLEP Local Growth Fund Proforma (2015-2016)

The preferred alignment Route 6 was taken forward for detailed modelling and environmental appraisal with this work undertaken by the Council's consultants AECOM and Amey. This work was undertaken using the 2009 Central Bedfordshire and Luton Transport Model, adjusted to 2015. This work helped to inform the successful bid for Local Growth Deal funding, although the Strategic Outline Business Case was not formally submitted to Government. The assessment was appropriate for the purpose, i.e. proving the case for development funding.

9.3 Overview of SOBC options

Option assessment at the SOBC stage has sought to be proportionate given the extensive work undertaken and the requirement to spend the LGF monies by 2021 but nevertheless provide a robust assessment on value for money grounds.

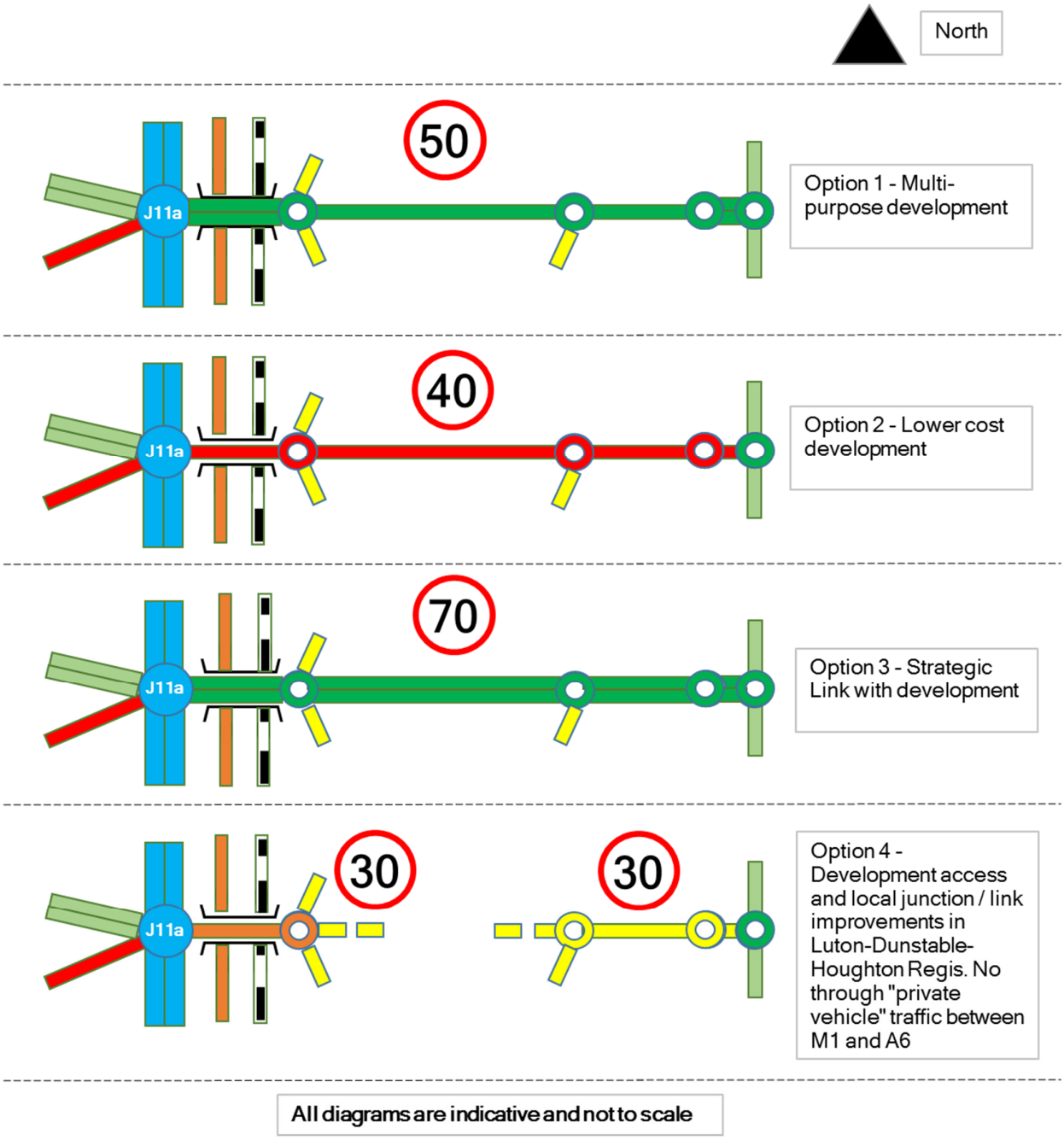
The option assessment has assumed a fixed alignment, namely the Route 6 previously adopted by the Council. In reviewing the previous option assessment, it has been clear that the form and function of the M1-A6 Link has varied between single and dual carriageway and so the option assessment has taken a step back to understand what type of road best delivers the blend of growth and transport objectives with environmental constraints in mind.

Four options have been developed with agreement from Central Bedfordshire Council. These include the scheme concept appraised as part of the LGF process, a strategic 70mph road akin to the A5-M1 Link, a lower cost secondary A road link with a primary emphasis on connecting the development to the M1 and A6, and finally a road that enables development to access either the M1 or the A6, but not be designed for through traffic. These are summarised below and illustrated in conceptual form over the page.

Table 9.4 : Description of options assessed as part of the SOBC

Option	Description
1	A multi-purpose development consisting of a part dual-carriageway primary road, with a speed limit of 50mph.
2	A lower cost development consisting of a single-carriageway local road and a speed limit of 40mph.
3	A strategic link road with accompanying development, which would be dual-carriageway for its entirety, and have a speed limit of 70mph.
4	This option would provide development access, and local junction and link road improvements in the Luton-Dunstable-Houghton Regis conurbation. There would be no through traffic for private vehicles between the M1 and A6. Speed limit: 30mph.

Figure 9.2: M1-A6 Link scheme concepts



9.4 Qualitative appraisal vs. objectives

9.4.1 Results

This *Strategic Outline Business Case* has appraised these potential options for the M1-A6 link road. A workshop was held at Jacobs' London New City Court Office involving transport planners, transport modellers and traffic engineers, in which a qualitative scoring system was devised to measure each option's fulfilment of the overall aim, core and wider objectives. The results of this appraisal are shown below. The scoring criteria are shown over the next page. It should be noted that each objective is weighted equally.

Table 9.5: Option appraisal vs. the Objectives, Transport Investment Strategy and Deliverability Criteria

	Option 1 (50mph S2/Short D2)	Option 2 (40 mph S2)	Option 3 (70mph D2)	Option 4 (Access only and North Luton Junction Improvements)
Overall aim				
To provide infrastructure to facilitate growth	2	2	0	0
Core Objectives				
Provide increased capacity: Reduce congestion and journey times	2	1	2	0
Improve connectivity to socio-economic opportunities	1	1	1	1
Create safe communities that are attractive to both residents and businesses	1	1	0	2
Wider Objectives				
Improve competitiveness of businesses.	1	1	1	1
Improve east-west connectivity within the region	2	1	2	0
Facilitate jobs and business scale up	1	1	1	1
Enable housing growth by opening up land for development.	2	2	1	1
Reduce carbon emissions and noise impacts and improve local air quality	1	1	-1	0
Encourage more walking, cycling and public transport trips (to improve the environment, people's health and wellbeing and their access to education, skills, employment, healthcare, retail and leisure opportunities).	1	1	0	2
Total	14	12	7	8
Ranking	***1***	***2***	***4***	***3***
Transport Investment Strategy Objectives				
Create a transport network that works for users, wherever they live	2	2	0	1
Improve productivity and rebalance growth across the UK	1	1	1	1
Enhance our global competitiveness by making Britain a more attractive place to invest	1	1	2	0
Support the creation of new housing.	2	2	1	1
Sub-Total	6	6	4	3
Ranking	***=1***	***=1***	***3***	***4***
Overall				
Fit with Scheme Objectives	G	G	A	A
Fit with DfT Transport Investment Strategy Objectives	G	G	A	A
Deliverable / Acceptable	A	A	R	R
Feasible	G	G	G	A
Affordable / Commercially Viable	A	G	R	A

Total	20	18	11	11
Ranking	*1*	*2*	*=3*	*=3*

Table 9.6 : Scoring criteria for objectives and deliverability appraisal

Criteria	Score
Strong alignment with objective	2
Moderate alignment with objective	1
Neutral alignment with objective	0
Negative alignment with objective	-1
Relatively low risk, proven solution. Likely to have strong stakeholder support. Likely to be affordable within known funding parameters	G (Green)
Some issues, but not expected to be insurmountable with further work	A (Amber)
Major issues with funding requirements, stakeholder support or technical delivery	R (Red)

9.5 Preferred option

From a purely strategic case perspective the consensus from this exercise is that the hybrid 50mph scheme (option 1) best meets the objectives and is considered deliverable. It provides both development access and provides east-west connectivity through a mix of dual and single carriageway.

Option 2 delivers a similar output at a lower cost and is the next best option from a purely objective basis.

Option 3 whilst expecting to provide significant journey time savings is not considered in keeping with the development ethos and could reduce the amount of development contributions because of land take and so create a further funding gap. This resulted in its red rating for deliverability and acceptability and affordability. However, a dual carriageway would be in keeping with the A5-M1 Link and is something that some stakeholders have proposed, and therefore despite its lower performance against objectives has been retained for economic assessment.

Option 4 would not address some of the key east-west connectivity issues for all vehicular modes in the study area. It would not allow sub-standard routes to be managed effectively to limit their use by freight traffic and would not support the connectivity and agglomeration of businesses in the study area. It was also not considered to be in accordance with the Local Plan submitted for examination, resulting in its red rating for deliverability and acceptability. As such it was not recommended for further economic appraisal.

10. Strategic fit

10.1 Strategic fit with the Transport Investment Strategy objectives

This section has been produced with reference to the Strategic Case Supplementary Guidance.[67] Section 10.1 provides an overview of how the preferred scheme aligns with relevant national strategic priorities identified by the DfT within the Transport Investment Strategy as important to Government:

- Create a transport network that works for users, wherever they live
- Improve productivity and rebalance growth across the UK
- Enhance our global competitiveness by making Britain a more attractive place to invest
- Support the creation of new housing.

Section 10.2 then provides a summary of the performance of the preferred scheme against relevant policies and strategies at a national, regional and local scale. Comprehensive detail on these documents is provided in the supporting Appendix B.

The reference point for this assessment is the preferred option from the strategic case perspective – Option 1. It will evolve as the Business Case develops and more information is available following consultation, the Local Plan Examination, planning and development of the Economic Case for the FBC.

10.1.1 Create a transport network that works for users, wherever they live

Table 10 1 provides a brief overview of the groups/ communities / users affected by the project, the impacts and potential mitigation measures. It considers impacts both during construction and operation where relevant. It considers both direct transport impacts (such as safety, reliability, congestion) as well as the indirect impacts (such as access to employment centres and vital services and the flow of skills, services and products). It focusses on the transport impacts, rather than the perceived impacts of additional housing and employment land on existing communities which will be considered in the forthcoming Local Plan Examination.

This table has been produced following public drop in sessions over the summer of 2018 where communities in the North Luton area, Chalton, Streatley and Houghton Regis were able to find out more about the project and share their ideas, concerns and feedback. This built on previous consultation undertaken during the preparation of the Local Plan and North of Luton Framework Plan. The preliminary design is now underway and taking these points of feedback into consideration.

Table 10 1: Impacts of the Preferred Option on Groups, Communities and Users

Groups	Impacts	Potential mitigation
Keech Hospice	The hospice is located to the south of the road – residents concern associated with noise and visual impact	Landscaping and noise attenuation to be considered in the ongoing design
Sundon Church users	Residents of Sundon Park have noted concerned about the directness of proposed road links between Sundon Park and Sundon Church (including its cemetery) given the plan to divert Sundon Park Road, which would add to journey times	The preliminary design is seeking to maintain the existing desire line for pedestrians and cyclists

[67] DfT (2017): Strategic Case Supplementary Guidance – Transport Investment Strategy - https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/669041/strategic-case-supplementary-guidance.pdf

Communities	Potential impacts	Potential mitigation
Streatley	Reduction in traffic through village and this section of the AONB	Lorry signing strategy and relevant traffic regulation orders to be developed to ensure use of the new road over less suitable alternatives
Lower and Upper Sundon	Residents were concerned about the increase in journey times to their existing shopping and services provision in Sundon Park associated with the diversion of Sundon Park Road Reduction in traffic through village although some residents concerned about noise impacts from the M1-A6 drifting north	The preliminary design is seeking to maintain the existing desire line for pedestrians and cyclists Residents of Lower and Upper Sundon would also have access to new retail facilities expected within the North of Luton Sustainable Urban Extension. Noise attenuation to be considered in the preliminary design
North of Luton Sustainable Urban Extension	Access to the M1 and A6 from development access points. Public rights of way connections to open space to the north of the road.	Access points, landscaping and noise attenuation measures to be developed in conjunction with the North of Luton Development Consortium
Sundon Park and A6 south of the M1-A6 Link	Residents of Sundon Park have noted concerned about the directness of proposed road links between Sundon Park and Sundon Church (including its cemetery) given the plan to divert Sundon Park Road, which would add to journey times Reduction in HGVs on unsuitable roads within the urban area Concern about an increase in traffic on the A6 into Luton and on the A5228 to/from Hitchin and Luton Airport	The preliminary design is seeking to maintain the existing desire line for pedestrians and cyclists Other impacts and mitigation to be determined through the Transport Assessment
Dunstable – Houghton Regis	Access to further employment opportunities Potential increase in traffic on Woodside Link Potential decrease in traffic on the A505 to/from Luton	To be determined through the Transport Assessment
Hockliffe	Local concern about increase in traffic. The A5 Dunstable Northern Bypass has resulted in an increase	To be determined through the Transport Assessment
Villages to the east of the A6 (Barton, Lilley, Hexton, Pegsdon)	Local concern about an in increase / re-routeing in east-west traffic on the B655 and unclassified roads to/from the A505 at Hitchin	To be determined through the Transport Assessment
Flitwick and Westoning	Likely reduction in traffic using the A5120 to reach the A507 to travel east-west	Route signing strategy and relevant traffic regulation orders to be developed to ensure use of the new road over less suitable alternatives

Users	Potential impacts	Potential mitigation (where relevant)
Commuters	Net reduction in journey times as demonstrated in the Economic Case	N/A
Businesses and hauliers	Net reduction in journey times as demonstrated in the Economic Case Dedicated all-purpose road between the M1 and A6 which also serves HGV intensive industries on the Sundon Park Road. This will reduce congestion and journey times and improve safety compared to the largely unsuitable routes through the Luton urban area or along Sundon Road / Manor Road / Streatley Road to reach the M1 or A6. Facilitate access to new employment land which is well located to strategic road and rail (via the Sundon Rail Freight Interchange) networks for efficient movement of goods Improved access to labour markets	Route signing strategy and relevant traffic regulation orders to be developed to ensure use of the new road over less suitable alternatives
Midland Mainline Rail Users	Potential impacts during construction in relation to rail possessions	A basic asset protection agreement is being developed with Network Rail to ensure the safe construction, operation and maintenance of the structure over the Midland Mainline Maximise use of existing planned possessions where possible to minimise impacts of construction
Bus users	The road does not impact the route of any existing services. The route 78 to Streatley and Upper Sundon currently uses the A6 rather than Sundon Park Road.	
Pedestrians, Cyclists and Non-Motorised Road Users	Provision of a dedicated east-west cycle route to the south of the M1-A6 link Provision of connections between public rights of way and open space to the north of the road with the sustainable urban extension Provision of crossing facilities along the current Sundon Park Road desire line for non-motorised users	The incorporation of a direct route for non-motorised road users is a direct result of feedback from the public drop in sessions Opportunities to incorporate further facilities for cyclists along the A6 Barton Road Walking, Cycling and Horse Riding Assessment to be further updated as the preliminary design develops

10.1.2 Improve productivity and rebalance growth across the UK

The Strategic Economic Plan and emerging Local Industrial Strategy note that the South East Midlands is one of the strongest and most dynamic parts of the UK. Investing here is investing in success and providing the means for government money to support further growth and generate benefits to reinvest elsewhere. Despite this success not all parts of the region are as productive. As Section 3.8.3 has shown, productivity within Central Bedfordshire and Luton remains below the England average. The real potential of new and upscaling firms is constrained by both access to labour markets and high quality employment land. There is a need to plan for the homes that all groups of people can afford to buy or rent to help employers grow their businesses and then

provide the platforms for firms to continue to create more skilled jobs to grow the local economy. All of this requires improved and efficient transport networks connecting the region's major settlements and growth opportunities.

Considering each of these points in turn, the road helps open up 20ha of employment land on the western edge of the SA1 allocation and 40ha of employment land within the SE1 allocation. SEMLEP's Strategic Economic Plan has highlighted the need for additional employment land for existing firms to expand and become more productive. At the same time this releases land and premises for smaller firms to expand. Land vacancies are low in Luton, and the quality of employment land is significantly aged – new allocations will provide both land for cost-conscious firms and also the incentive to improve the existing stock. Both strategic allocations are estimated to support 3,000 jobs in total.

Access to labour markets for firms has not been helped by the housing challenge. Across the South East Midlands housing completions have not matched demand and affordability if a general problem throughout the region. The Luton functional housing market is experiencing significant growth pressures, given its prime location and relative affordability. The sustainable urban extension unlocked by the M1-A6 helps to meet some of this unmet demand and provide high quality homes, attractive to skilled labour that is well located to strategic transport links and employment.

The Strategic Economic Plan also highlights that freight and trade is hampered by east-west connectivity which has constrained economic competitiveness and growth in the past. The M1-A6 link will address east-west connectivity in the north of Luton, providing enhanced connectivity for existing industrial premises to the M1, avoiding the need to use unsuitable roads through the Luton area. The road also improves east-west connectivity to growing communities and clusters of employment in the north east of Central Bedfordshire via the A6 and A507. The Local Industrial Strategy has highlighted food tech industries as a particular industrial cluster that spans this east-west geography.

Policy SE1 allocates a new Rail Freight Interchange at Sundon. This facility will be accessed off the M1-A6 Link and will provide a realistic alternative to the road based haulage of freight for logistics companies in the wider sub-region. It aligns with the national approach to freight and rail movements detailed within the DfT's Strategic Rail Freight Interchange Policy Guidance[68], but is only possible with the provision of the M1-A6 link.

10.1.3 Enhance our global competitiveness

The project supports improved trade flows through the following:

- Facilitating the Sundon Rail Freight Interchange and related intermodal terminal and employment land – this provides the means for the more efficient handling of goods for specific supply chains and markets.
- SEMLEP's Strategic Economic Plan reports that there is a strong demand for warehousing land well located to strategic transport networks, such as the M1. Previous investment in the Woodside Link and the A5-M1 Link has already led to 50 specific deals coming forward for industrial and distribution units across Dunstable, Houghton Regis and Leighton Buzzard. The improved connectivity and land allocations associated with the M1-A6 Link should support the expansion of this industry further.
- Greater east-west connectivity within the South East Midlands supporting identified industrial clusters of importance to the emerging Local Industrial Strategy such as the logistics industry
- More reliable and resilient journeys to Luton Airport allowing strategic traffic and imports / exports to bypass Luton town centre.

10.1.4 Enable the delivery of new housing developments

What does the project do to address constraints on housing? Are any new housing developments dependent on the project? For example, does it open up access to new pieces of land?

Section 3.2 and 3.5 have presented a summary picture of the demand for housing growth in the South East Midlands and specifically the Luton Housing Market Area. Unmet demand and housing affordability is a problem

[68] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/4377/strategic-rail-freight-interchange.pdf

across the area and Central Bedfordshire's Local Plan summarised in Section 4.3.2 provides a means to meet some of this unmet demand in an area that is relatively affordable compared to the South East Midlands.

The construction of the M1-A6 Link would fundamentally deliver up to 4,000 new dwellings on land associated with the North of Luton Strategic Allocation within the pre-submission Central Bedfordshire Local Plan. The Local Plan makes clear that a M1-A6 Link Road is an essential component of a development at this location and on this scale. This level of growth could not be released without the Link Road.

Plans for development in the north of Luton have been around since the mid 1990s yet these have not materialised in the absence of a link road from the M1 and/or A6. One of the constraints for this is the Midland Mainline. There are limited crossings under or over the railway line in the Luton area. The M1-A6 Link in bridging the railway would remove this barrier to development.

In what other ways will the project help to unlock housing development, for example by connecting housing or land to employment centres and services or accommodating demand?

The scheme not only facilitates land being more accessible and suitable for development. It also connects these homes to strategic transport corridors – the M1, A5 and A6. Public transport connections provided by the development also integrates the homes with Leagrave railway station for Thameslink services to Bedford, London, Gatwick and Brighton. This works in two ways – it provides homes for people to provide skilled labour to firms both locally and within the South East Midlands; it also provides a wide catchment area for firms locating in the strategic employment allocations associated with the North of Luton and Sundon Rail Freight Interchange to draw upon from homes elsewhere in Bedfordshire, Hertfordshire and the South East Midlands.

What evidence of commitment is there from developers to the new housing? For example, have developers provided funding for the scheme? How does the project align with housing plans?

Developers are committed to providing appropriate funding to the scheme having previously supported the LGF Proforma submitted to SEMLEP. Central Bedfordshire Council has a stake in the North Luton Consortium and is working with developers to agree funding contributions and its underwriting. The M1-A6 Project Team meet with the North Luton Consortium on a quarterly basis to share progress and help plan both the link road and development in a co-ordinated and integrated manner.

Does it contribute to 'placemaking'?

Within this context there is a recognition that many highways schemes delivered elsewhere in the UK to unlock development have not necessarily contributed to a sense of place. As part of the options appraisal this has been explicitly considered to develop a preference for a scheme that provides a balance between development and movement at all scales. Dedicated provision is included in the scheme for walking and cycling with this provided not immediately adjacent to link road to provide an attractive environment, as well as one that is integrated with existing public rights of way and the open countryside through segregated links over and under the link road.

The scheme also provides indirect support to other initiatives being progressed by Luton Borough Council in its Marsh Farm regeneration in supporting new homes, walking and cycling links that will be integrated with the adjacent Luton area. The M1-A6 scheme also provides the opportunity for Central Bedfordshire Council and Luton Borough Council to manage the impact of HGVs on rural and urban neighbourhoods once the M1-A6 scheme is in place. There are few suitable routes across the Midland Mainline in and around Luton resulting in lorries using otherwise inappropriate roads.

What engagement has taken place with the relevant planning authorities?

Central Bedfordshire Council is a unitary authority with representatives from its place and planning teams key components of the M1-A6 Project Board and relevant progress meetings. It has also engaged with Luton Borough Council in the preparation of its Local Plan and how to meet Luton's unmet housing demand sustainably. Related to the business case is the preparation of the planning application and environmental statement. This has included ongoing liaison with Luton Borough Council in relation to the scoping of the

environmental statement and transport assessment. Similarly given the proximity of Hertfordshire, liaison is ongoing with Hertfordshire County Council in relation to the scope of the transport assessment.

10.2 Strategic fit against wider public policy objectives

In addition to the Transport Investment Strategy, the scheme is closely aligned with the outcomes sought by pertinent national, regional and local policy documents. Specific emphasis is drawn to the following points. Further detailed analysis of the scheme's strategic fit against national, regional and local policy objectives is found in Appendix B:

10.2.1 National policy

- ✓ The M1-A6 link road scheme supports the aims of the Industrial Strategy White Paper, Clean Growth Strategy, the Rail Freight Strategy and the National Infrastructure Delivery Plan, particularly in enhancing connectivity through strategic improvements to infrastructure, facilitating housing and employment provision locally, and aiding the effective and efficient transportation of goods between the M1 and the Midland Mainline and beyond. High performance technology, advanced manufacturing including the automotive industry, and logistics and transport are three key sectors for the wider SEMLEP area, which would benefit from the enhanced connectivity and greater job opportunities afforded by M1-A6 Link.

- ✓ The study area lies is in a strategic location near to London and near to the Oxford-Milton Keynes-Cambridge corridor. This region is a driver of population growth in the UK in terms of population, yet housing affordability remains a major issue in the region. With better affordability in the study area compared to the study area as a whole the scheme is well placed to support Government's housing aims articulated in its Housing White Paper and key policy outcomes espoused by the National Infrastructure Commission in its various documents associated with the Oxford-Milton Keynes and Cambridge Arc.

- ✓ The scheme will also support the aims of the National Policy Planning Framework in facilitating sustainable development; creating a more reliable, less congested, and better connected transport network; enhancing productivity and responding to local growth priorities; and supporting the creation of new housing.

- ✓ While the scheme does not directly link to London Luton Airport, it will help to provide general relief for traffic in Luton benefitting both local private and public transport links to the airport, and so support Government aims regarding surface transport to airports and its global connectivity agenda. It also provides an opportunity for new employment associated with aerospace, engineering and logistics to locate near to the airport, SRN and Midland Mainline delivering agglomeration benefits.

10.2.2 Regional policy

- ✓ The scheme also directly accords the goals of the South East Midlands Strategic Economic Plan (2017) The Strategic Economic Plan is built around growing business, growing people and growing places. There is a strong demand for employment and warehousing space along the Oxford-Milton Keynes-Cambridge growth corridor and the M1 more widely, with demand in excess of supply. Business needs the space to grow and upscale. Housing and the infrastructure to support its sustainable delivery is also essential to tackle a general affordability and under supply issue. The Strategic Economic Plan references the M1-A6 scheme as one of the region's scheme to support these goals.

- ✓ Moreover, SEMLEP's Transport Strategy aims to provide "high quality, safe access to services and opportunity", identifying transport investment as being key to "economic vitality and wellbeing" in the area.
- ✓ The emerging themes and findings within the South East Midlands Local Industrial Strategy also provide further support to the scheme, highlighting clusters of high tech industry north-south from Luton and east-west from Luton. In addition to transport connectivity, tackling the shortage of good quality

employment premises and space, particularly for smaller, expanding businesses is critical to the region's supply chain and sector strengths. This scheme in its facilitation of the development of employment land adjacent to the M1 and the proposed Sundon Rail Freight Interchange supports these goals well.

- ✓ England's Economic Heartland Planning for Growth and its Strategic Road Investment Priorities names the M1 to A6 Link and strategic east-west links such as the A505 as a priority for funding and support.

10.2.3 Local policy

- ✓ The Central Bedfordshire Pre-Submission Local Plan contemplates a vision for North Luton being "an extension to Luton that will provide a mix of uses necessary to achieve a sustainable and vibrant community". The scheme would therefore mitigate the impact of the development near the existing transport network in this part of Luton.

- ✓ The Luton Local Plan requires Central Bedfordshire Council to help it meet its unmet housing demand as close to Luton as sustainably possible given the close economic geography relationships.

- ✓ The Central Bedfordshire Local Transport Plan 4 aims to 1) alleviate pressures on the existing transport network, 2) improve connectivity to enable access to new opportunities, and 3) create "attractive and inclusive" new communities to attract new settles and investors. The scheme therefore complements the three broad areas for delivering sustainable growth.

11. Conclusion

11.1 Principal findings

The Strategic Case has concluded that the preferred option from a purely strategic fit perspective is Option 1. This option best meets the objectives by delivering both development access and provides east-west connectivity through a mix of dual and single carriageway at 50mph operation. It is considered deliverable in terms of engineering feasibility and its potential cost.

The Strategic Case has provided a comprehensive overview of the existing situation in the study area. This has demonstrated that the South East Midlands is a fast growing region, already making a strong contribution to the UK economy, the Industrial Strategy and Housing Strategy. There has been a substantial increase in business start-up activity in Luton and Central Bedfordshire since 2012, including 50 deals for industrial and distribution units in Luton, Dunstable and Houghton Regis associated with the delivery of the Woodside Link and A5-M1 Link to the west of this scheme. This alongside improving business perceptions suggest that the area is a good place for firms to start and grow their business. Yet it can do even more.

Productivity within Central Bedfordshire and Luton still remains below the England and South East Midlands average. The real potential of new and upscaling firms is constrained by both access to labour markets and high quality employment land. There is a need to plan for the homes that all groups of people can afford to buy or rent to help employers grow their businesses, and also provide the platforms for firms to continue to create more skilled jobs to grow the local economy. All of this requires improved and efficient transport networks connecting the region's major settlements and growth opportunities.

The scheme will make a strong contribution to this need. The Local Plan provides for two strategic allocations for a sustainable urban extension (4,000 homes, 20 ha of employment land) and a rail freight interchange incorporating an additional 40 ha of employment land, north of Luton. In addition to the road, proposed walking, cycling and public transport links will integrate these employment, education, leisure and healthcare opportunities with the wider Luton urban area to ensure that the benefits are widespread, helping to make a positive contribution to existing regeneration initiatives within the Marsh Farm area of Luton. Without a road connecting these sites with the M1 and A6, the Local Plan is clear that these sites cannot be delivered.

These allocations should be seen in the context of wider housing affordability and unmet demand across the South East Midlands and Hertfordshire, and the need for additional and replacement employment land to enable growing firms to upscale to reach their potential in the region. Luton's employment land is significantly ageing The replacement and renewal of this industrial land is happening but lags behind the rest of the region especially for completed new modern office space.

The South East Midlands and Hertfordshire is characterised by a polycentric geography of medium sized settlements. The region currently enjoys good north-south links via the M1, A6, A6, A1 and West Coast, Midland and East Coast Mainlines. Yet for these agglomeration economies to be more productive these need both east-west as well as north-south connectivity. This concept is supported by the National Infrastructure Commission work and early work by England's Economic Heartland on its transport strategy. The DfT's consultation on the MRN has also indicated that there is a case to be made for east-west routes in the study area to play a vital role for movement in the study area.

SEMLEP's Strategic Economic Plan notes the importance of the logistics industry to the region's economy, with the growing London Luton Airport important. However increased congestion, a lack of suitable routes and competition from other areas is a challenge for the sector to overcome. A specific problem related to east-west connectivity is the lack of suitable east-west routes for HGV traffic between the M1, A6 and existing businesses in and around the Luton urban area. This is exacerbated by notable clusters of HGV orientated manufacturing and distribution industries in the Luton alongside corridors such as the B579 and Sundon Park Road. While these firms have been attracted to the area because of the strong north-south links provided by the M1, customers and suppliers are also located to the east and north east of Luton.

The Midland Mainline constrains east-west travel with a limited number of height cleared routes suitable for heavy goods vehicles to access the M1 from the east. The Midland Mainline presents a notable constraint with a series of height limited bridges north of Luton town centre, resulting in HGVs being permitted to use otherwise substandard routes in the Luton urban area and Sundon. This contributes to significant HGV volumes as a percentage of overall traffic on roads such as Icknield Way in Luton (15-18%) and within the Area of Outstanding Natural Beauty – Streatley Road / Manor Road (23-26%). Neither road's form or function is designed for this use, and this has contributed to safety issues on both roads.

There are environmental considerations including impacts on the area of outstanding natural beauty which will be documented in the Environmental Assessment accompanying the planning application. Noise and air quality considerations are also important in view of the proximity of the road to the planned sustainable urban extension and impacts on existing communities. These considerations will continue to inform the design as it develops.

This assessment has helped to guide the need for intervention and identification of objectives, outputs and outcomes which have continued to drive the scheme development and option appraisal. This has built on a long history of option development summarised in Chapter 9 including the selection of a preferred alignment as part of the North of Luton Framework Plan in 2015, and prioritisation of the scheme for Local Growth Funding in 2015/16.

Lastly the scheme has been assessed against the Transport Investment Strategy and wider policy objectives at a national, regional and local level. This has demonstrated a good strategic fit, in particular the Housing White Paper and Industrial Strategy.

11.3 Expected updates at Outline Business Case stage

The Strategic Case presented is comprehensive in its breadth and depth across all the relevant areas expected of the Strategic Case at SOBC stage. With the Full Business Case for DfT final sign off not expected until 2020 it is expected that principal updates for the Outline Business Case will focus on:

Outline Business Case Update

- *Chapter 3 – Existing situation*
  - *Update of any key policy changes at a national, regional or local level*
  - *Use of Teltrac™ data to analyse journey time delay and reliability following the opening of the A5-M1 Link*
  - *Further analysis of road safety issues*
  - *Update of Environment section following conclusion of the Environmental Impact Assessment to support Planning in 2019*
  - *Consolidation of contextual material between the Strategic Case and Option Assessment Report to provide more of the background detail in the latter document where relevant.*
- *Chapter 4 – Future situation*
  - *Update of any assumptions around forecast growth within the traffic modelling*
  - *Update of the Local Plan context following its examination and adoption.*
- *Chapter 5 – Need for Intervention*
  - *Update as required depending on the further refinement of Chapters 3 and 4.*
- *Chapter 7 – Scheme scope*
  - *Further definition as the design moves into preliminary design.*
- *Chapter 8 - Constraints, interdependencies and stakeholders*
  - *Summary of the planning position*
  - *Overview of public and stakeholder consultation and feedback making use of detailed reports produced by CBC*
  - *Update of inter-relationship with the North of Luton development.*
- *Chapter 9 – Option assessment*
  - *Update on any relevant changes to the preferred scheme and its performance from the Economic Case.*
- *Chapter 10 – Strategic Fit*
  - *Further detail on how the scheme aligns with the Transport Investment Strategy or any updates to similar Government policy objectives where relevant*
  - *Update of alignment with any new pertinent policy documents at a national, regional or local level.*

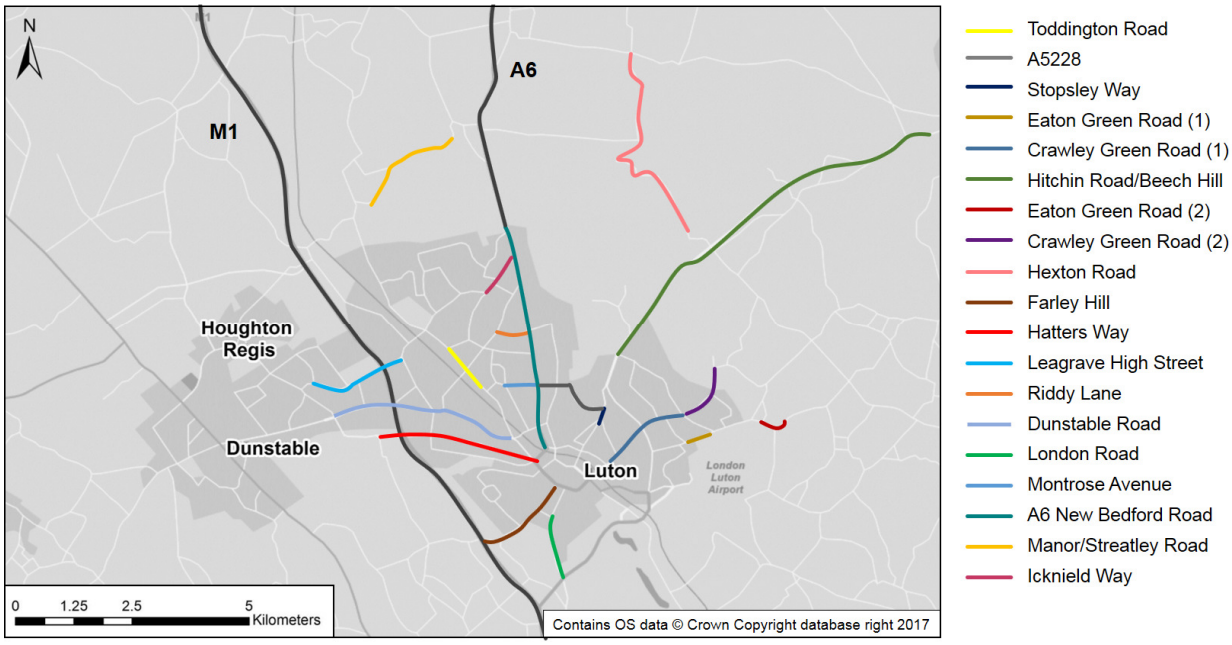
Appendix A. Traffic flow data and analysis

A.1 Introduction

It should be noted that this section provides a summary of the data currently available to the project team in May 2018. This data predates the opening of the A5-M1 Link to the west of the proposed M1-A6 road. This analysis will be updated as the Strategic Case develops and robust data becomes available.

Annual, weekly and daily traffic flow trends are analysed in this section. Traffic count data collected over various periods of time has been used to produce this analysis. Throughout this section, data the links outlined in Figure A.1, have been used to inform discussion.

Figure A.1 Links Analysed in the Traffic Volumes part of the Road Performance section of the SOBC.



A.2 Annual variation in traffic flows

The purpose of this section is to highlight any trends in traffic count data (Annual Average Daily Flows (AADF)), using DfT datasets[69], to summarise the usage of the local highway network in the vicinity of the proposed M1-A6 Link, over 16 years (2000-2016). DfT counts for the following locations have been used to analyse annual variation in traffic flows in the study area:

- M1 (ID: 26001);
- A6 (ID: 73038);
- Toddington Road (ID: 86070);
- A5228 (ID: 6176);
- Stopsley Way (ID: 73632); and
- Hatters Way (ID: 73040).

Figure A.2 demonstrates the change in AADF on the M1 north of Luton and Figure A-3 outlines the variation in AADF on the A6, Toddington Road, the A5228, Stopsley Way and Hatters Way.

[69] Link Count Data, Department for Transport (2018) (Accessed: 01 May 2018)

Figure A.2 M1 North of Luton Traffic Volumes 2000-2016 (Source: DfT)

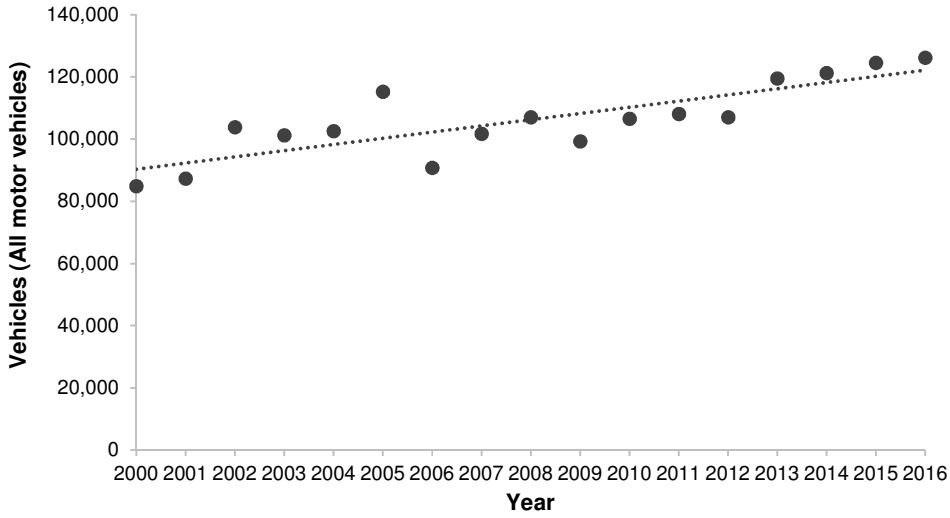
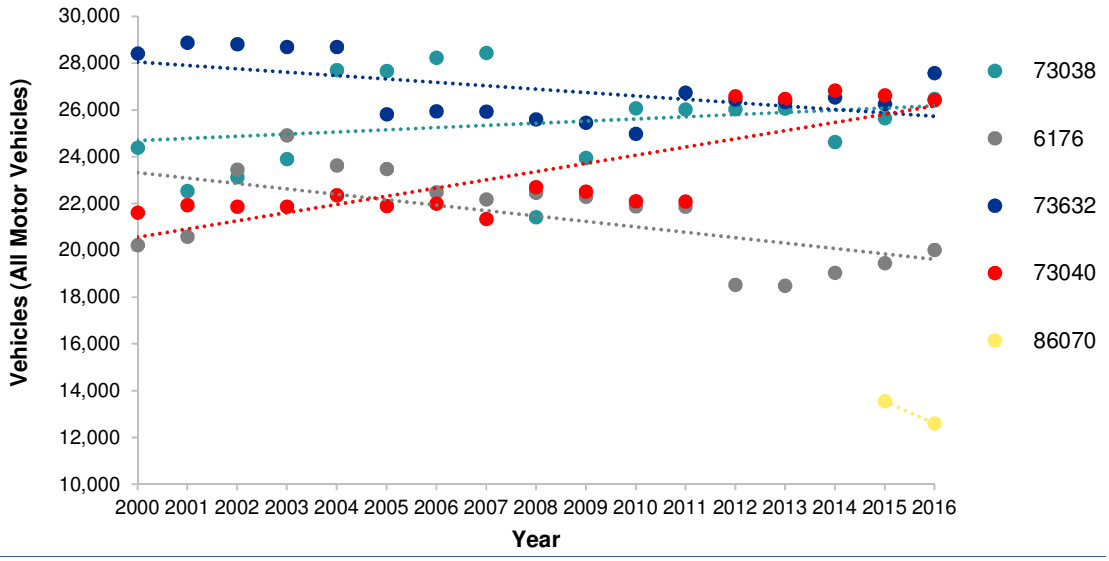


Figure A.3 Local Highway Network Traffic Volumes 2000-2016 (Source: DfT)



The following analysis points have been derived from Figure A-2 and Figure A-3:

- There has been considerable growth on the M1 north of Luton, from 84,778 and 126,144, representing a 49% increase between 2000 and 2016;
- The A6 (73038) and Hatters Way (73040) have seen increases in traffic volumes 2000-2016, to 26,000 vehicles daily – traffic flows were steady on Hatters Way until 2012 where the principal increase of 4,000 vehicles was experienced;
- Stopsley Way (73632) and the A5228 (6176) experienced decreases in AADF, by over 2,000 vehicles, over 16 years although this masks a fall in the mid 2000s and recent increases; and
- Toddington Road (86070) experienced decreases in AADF between 2015 and 2016 by 948 vehicles.

A.3 Weekly variation in traffic flows

Analysis has been undertaken to determine weekly variation in traffic flows on various routes in the study area, using locally collected traffic count data. Sixteen links have been analysed across the following three broad classifications by route type (Figure A.1):

- Rural East-West Roads: used to make east-west movements between Luton and towns east of Luton;
- Urban Unclassified Roads: local roads used to facilitate connectivity for residential areas and services;
- Main Radial Roads: used to facilitate strategic scale movements in or out of Luton.

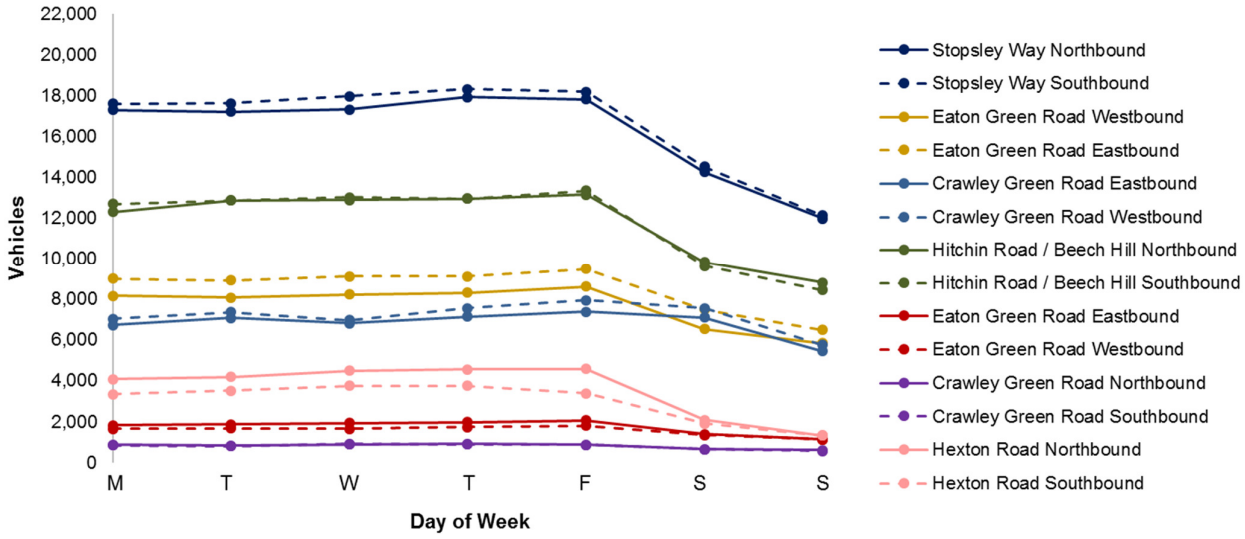
Weekly variation has been measured over average daily flows (7-day week), AM and PM peak hour flows.

Rural East-West Roads

The variation in average daily flows on rural east-west routes over a week is presented in Figure A.4. This highlights the following observations:

- There is a large range in daily traffic flows on the various east-west roads;
- Stopsley Way and Hitchin Road/Beech Hill (both A505) recorded the greatest daily flows during week days, at approximately 17,000 vehicles and 12,000 vehicles per direction respectively;
- There are significantly fewer vehicles using Stopsley Way and Hitchin Road/Beech Hill on weekends compared to weekdays, suggesting the A505's important role for commuting and employers' business between Luton and North Hertfordshire;
- Other rural east-west routes are not used to the same extent given their lower capacity and function, and also experience less variation in daily flows over the week.

Figure A.4 Weekly Variation in Daily Flows on Rural East-West Roads



Analysis of variation in the traffic flows recorded during the AM and PM peak provide more detail on the ways in which rural east-west routes east of Luton are used (Figure A.5; Figure A.6). This highlights:

- On weekdays, there is westbound demand on the A505 in the AM peak and eastbound demand in the PM peak: Approximately 1,500 vehicles use Stopsley Way Southbound in the morning and 1,500

vehicles use Stopsley Way Northbound. A similar pattern is observed north on the A505 at Hitchin Road/Beech Hill;

- Whilst peak hour flows are recorded much lower on Hexton Road (Lilley), a commuting pattern is identified from AM and PM peak hour traffic counts: During weekdays, there is a greater southbound flow towards Luton in the morning peak, and a greater northbound flow to the B655 in the evening peak. There are consistently lower flows recorded during the peak hours on the weekend; and

- Other rural east-west routes are used less, and likely used less for commuting, as there is little variation in AM and PM peak flows recorded throughout the week and weekend.

Figure A.5 Weekly variation in AM Peak flows on rural east-west roads

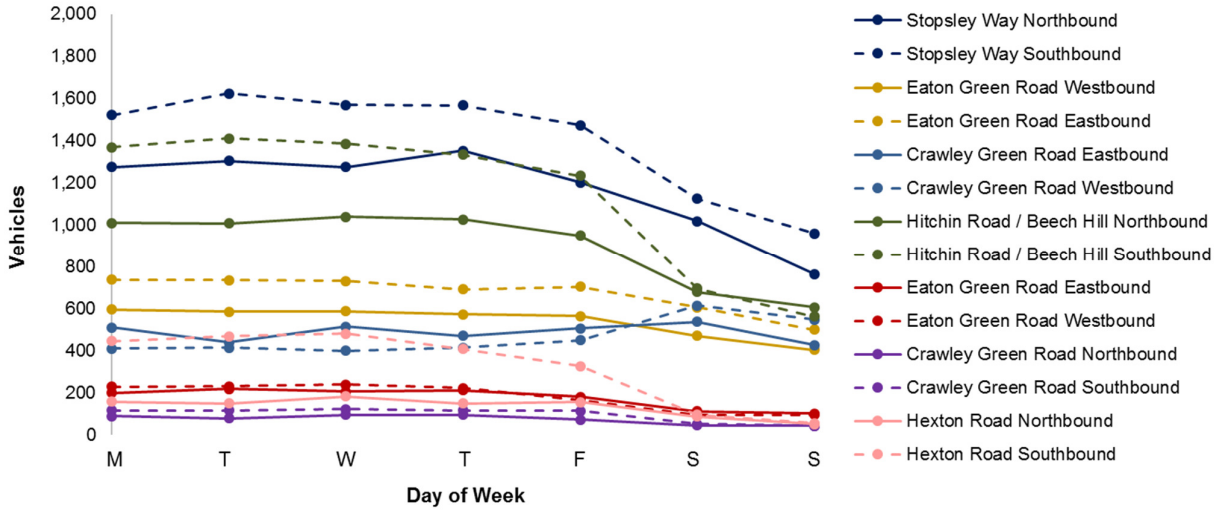
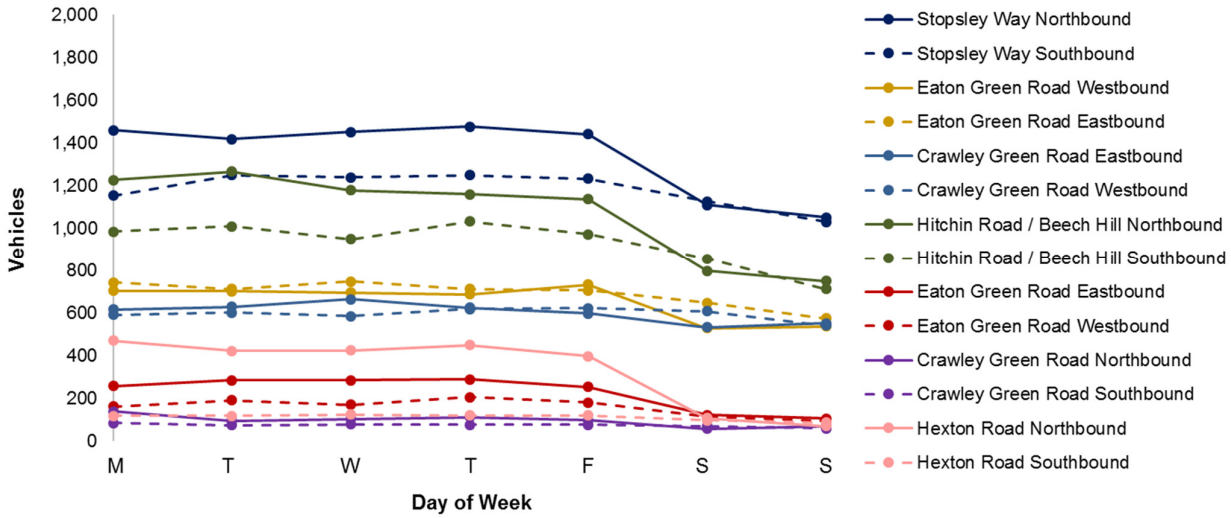


Figure A.6 Weekly variation in PM Peak flows on rural east-west roads

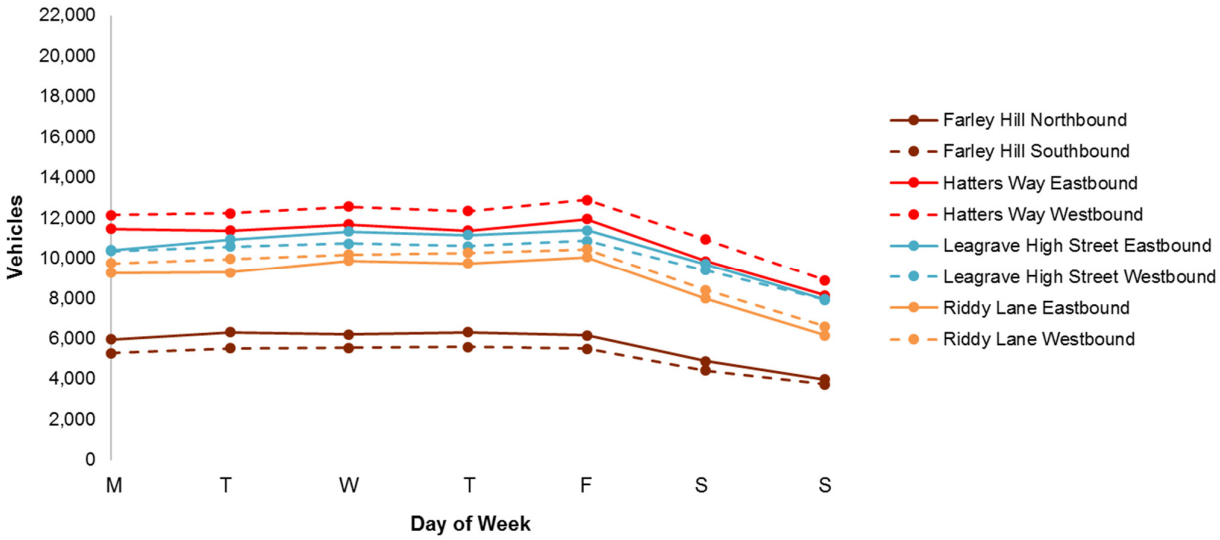


Urban Unclassified Roads

Analysis of weekly variation in daily traffic flows on urban unclassified roads in Luton, presented in Figure A.7, draws attention to the following routes:

- Most routes recorded daily flows of between 9,000 and 12,000 per direction on weekdays, the routes with the highest flows facilitate east-west routes through the north of Luton;
- Westbound flows on all east-west urban unclassified roads are consistently greater than eastbound flows; and
- Flows are consistently higher Monday to Friday, than on Saturday and Sunday, across all urban unclassified routes in Luton.

Figure A.7 Weekly variation in daily flows on urban unclassified roads



Further analysis of traffic count data across the AM and PM peak (Figure A-8; Figure A-9), demonstrates the following behaviours throughout the week:

- High flows on Hatters Way during the AM peak, as well as consistently throughout the day (see Figure A.14), indicates that this route which is situated in close proximity and with a similar alignment to the A505 (and on some maps also numbered the A505 instead of the A5065), will be used as an alternative to the A505 from Dunstable to Luton town centre as it avoids any congestion associated with M1 Junction 11; and
- In the PM peak, there is little variation in flows throughout the week. Flows on Hatters Way are similar at weekends to Monday to Friday.

Figure A.8 Weekly variation in AM peak flows on urban unclassified roads

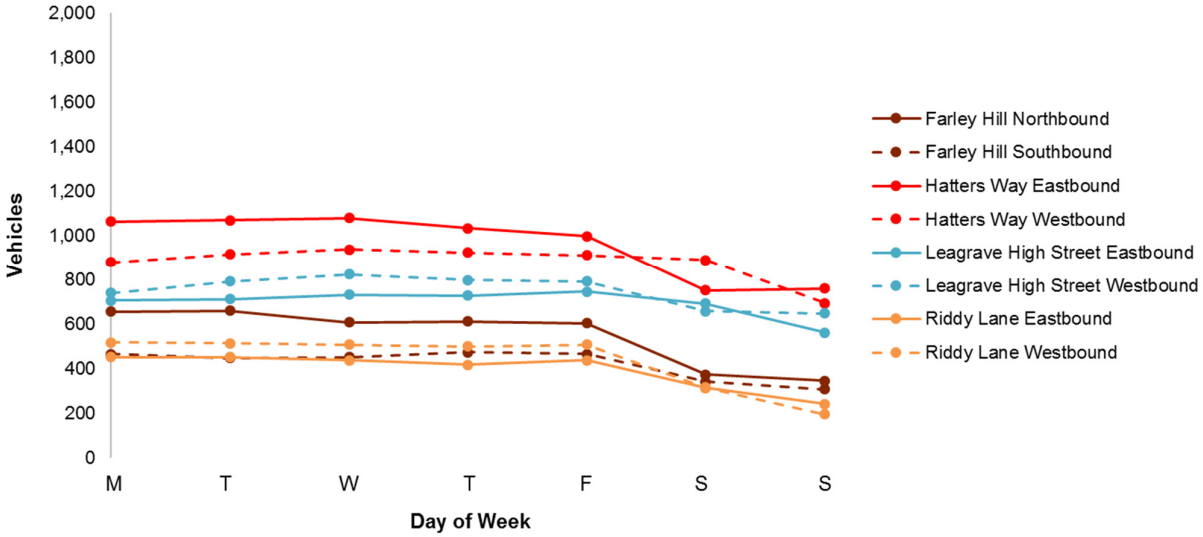
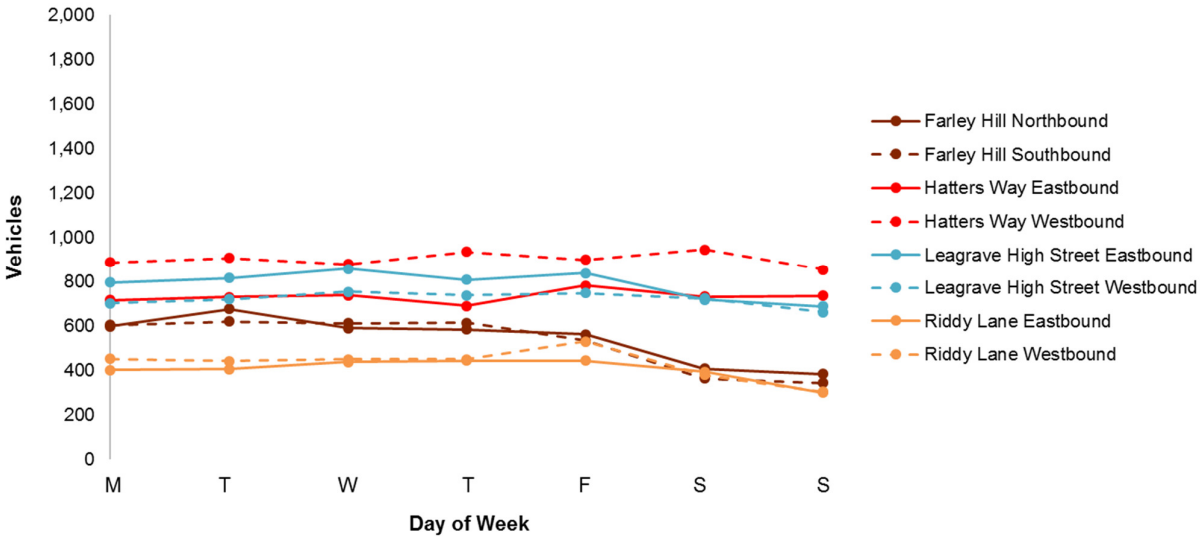


Figure A.9 Weekly variation in PM Peak flows on urban unclassified roads

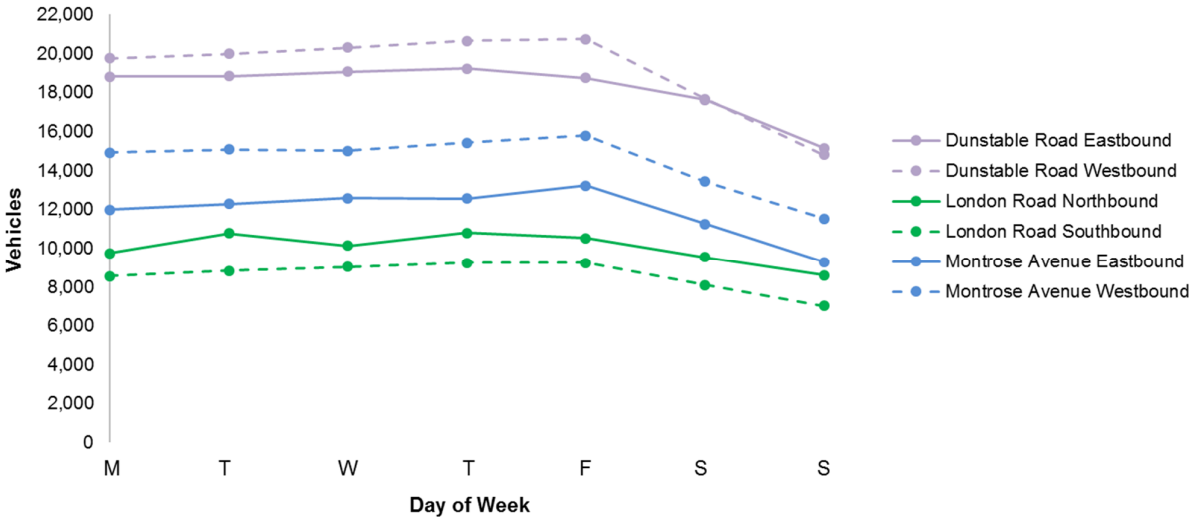


Main Radial Roads

Analysis of daily flows on main radial roads in Luton over seven days a week (Figure A.10), highlights:

- High traffic flows on Dunstable Road (A505): Daily flows are considerably higher on this route than any route studied, with over 18,000 vehicles in either direction on weekdays; and
- Higher flows recorded throughout the working week compared to the weekend on all radial routes.

Figure A.10 Weekly variation in daily flows on main radial roads in Luton



Analysis undertaken of AM and PM peak hour flows on main radial roads in Luton (Figure A-11; Figure A-12) demonstrates:

- Much higher flows on Dunstable Road Westbound during the week than on the weekend in the AM peak (300 and 400 less vehicles on Saturday and Sunday respectively). There is however, minimal variation in traffic flows across the 7-day week on Dunstable Road Eastbound during the AM peak;
- Commuting on Dunstable Road is indicated by the increased number of vehicles travelling eastbound in the PM, compared to the AM, Monday to Friday. Westbound Dunstable Road sees similar flows in the PM as it does in the AM peak, confirming this route as a key strategic east-west route in Luton;
- There is a commuting pattern identified on London Road during the weekdays: the AM and PM peak flows are greater during the week compared to the weekend; flows are higher travelling southbound on London Road during the AM peak and travelling northbound during the PM peak; and
- There is little variation throughout the week, in the AM and PM peak hour flows recorded on Montrose Avenue.

Figure A.11 Weekly variation in AM Peak flows on main radial roads in Luton

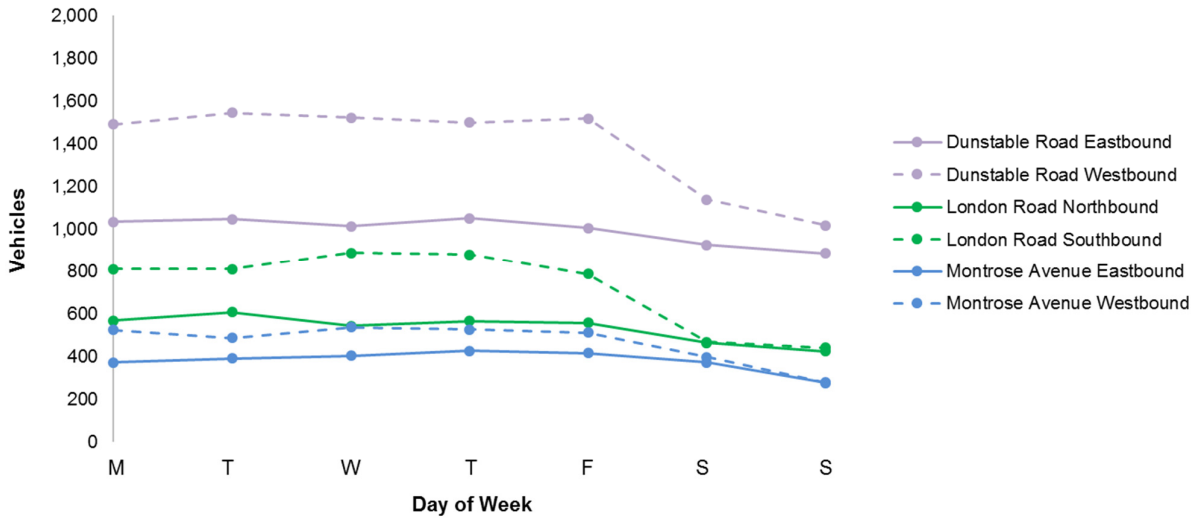
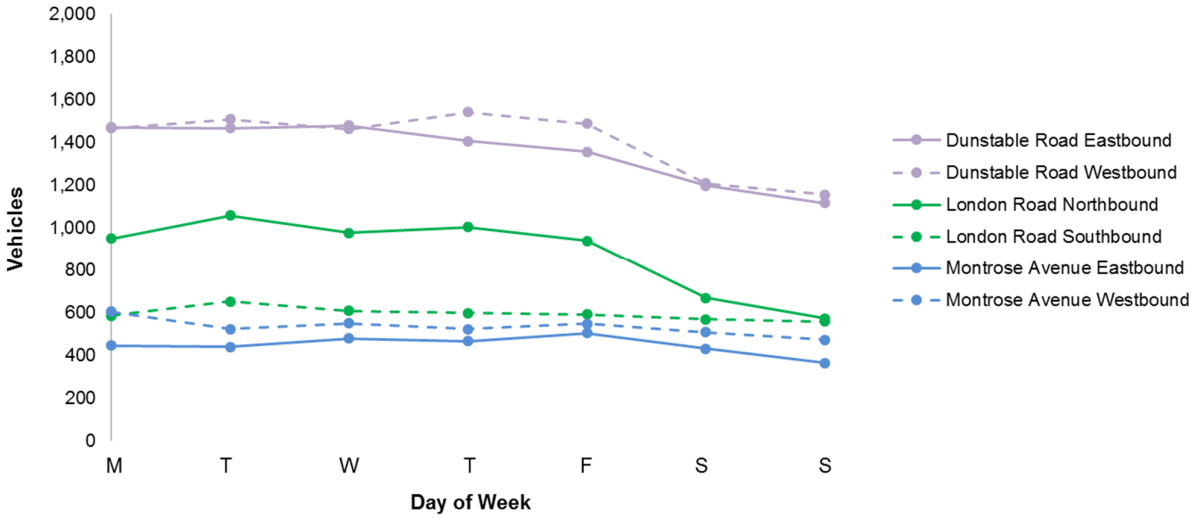


Figure A.12 Weekly variation in PM Peak flows on main radial roads in Luton



A.4 Network stress

In addition to the CBLTM network plots provided in the main report, an indication of network stress is provided through daily profiles of vehicle flows on rural east-west, urban unclassified and main radial roads (Figure A.11; Figure A.12; Figure A.13). This outlines the periods of the day in which routes experience the highest traffic flows and peak congestion. As previously indicated, larger flows are generally recorded on weekdays, therefore this analysis considers 'daily' flows as 5-day averages (Monday to Friday). In summary:

- Rural east-west roads generally experience two defined peak periods, between 07:00 and 09:00 and 16:00 and 17:00. It is assumed that these periods are when rural east-west roads are under greatest stress;

- Urban unclassified roads generally experience a defined peak in flows between 07:00 and 08:00. It is assumed that this period of the day is when the urban unclassified roads in the network are under the greatest stress. Farley Hill is the exception to this, which experiences a second peak in the evening at 17:00 and 18:00; and

- Main radial roads generally experience two defined peaks throughout the day between 07:30 and 09:00 and 15:00 and 18:00.

Figure A.13: Daily flows on rural east-west roads (Weekday Average)

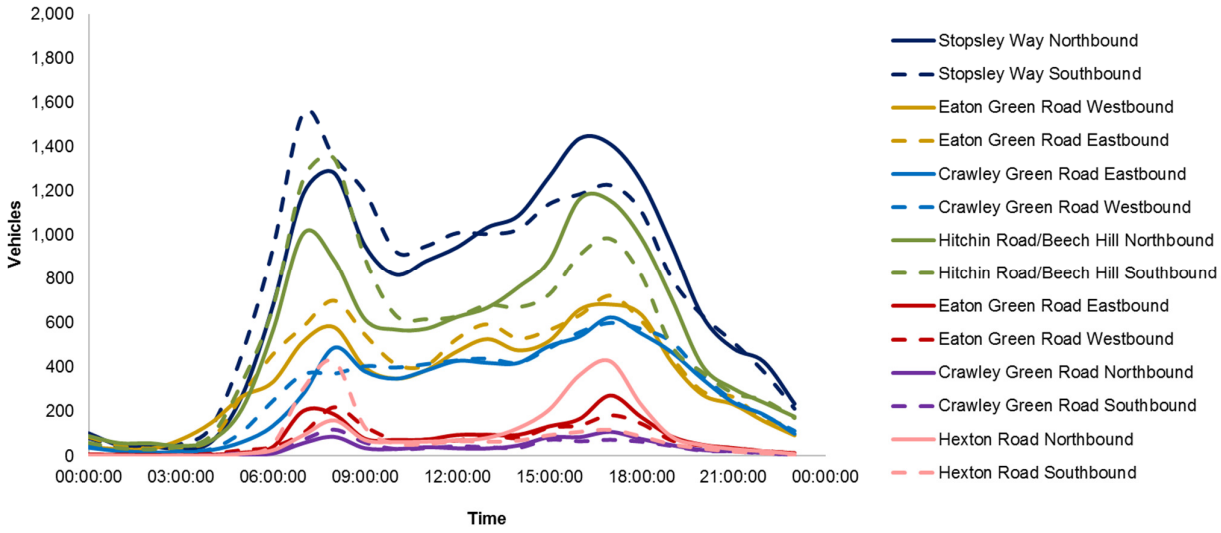


Figure A.14: Daily flows on urban unclassified roads (Weekday Average)

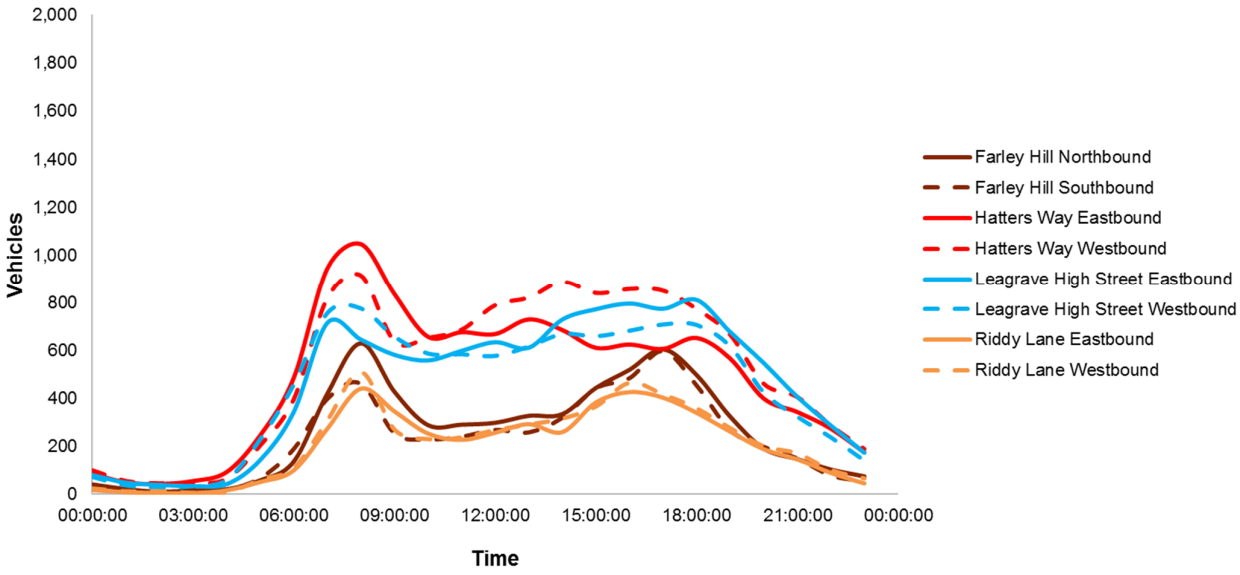
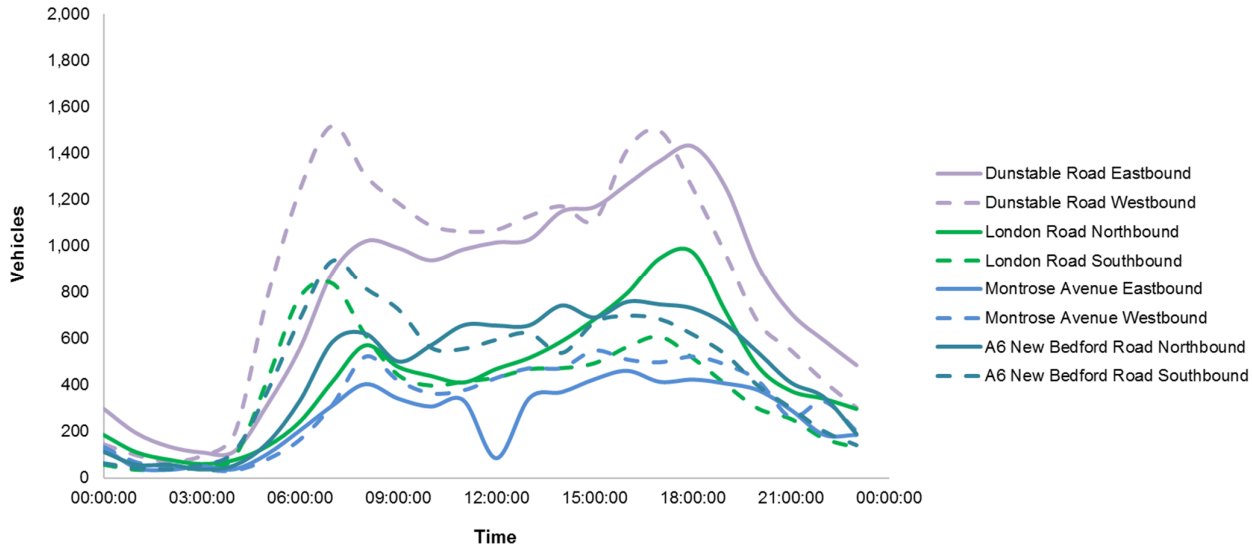


Figure A.15 Daily flows on main radial roads in Luton (Weekday Average)



A.5 Daily variation in traffic flows

Analysis of the variation in Passenger Car Units (PCUs) over a twelve-hour period (07:00-19:00) has also been undertaken for two unclassified roads which in effect provide substandard but well used east-west links between the M1 and the A6:

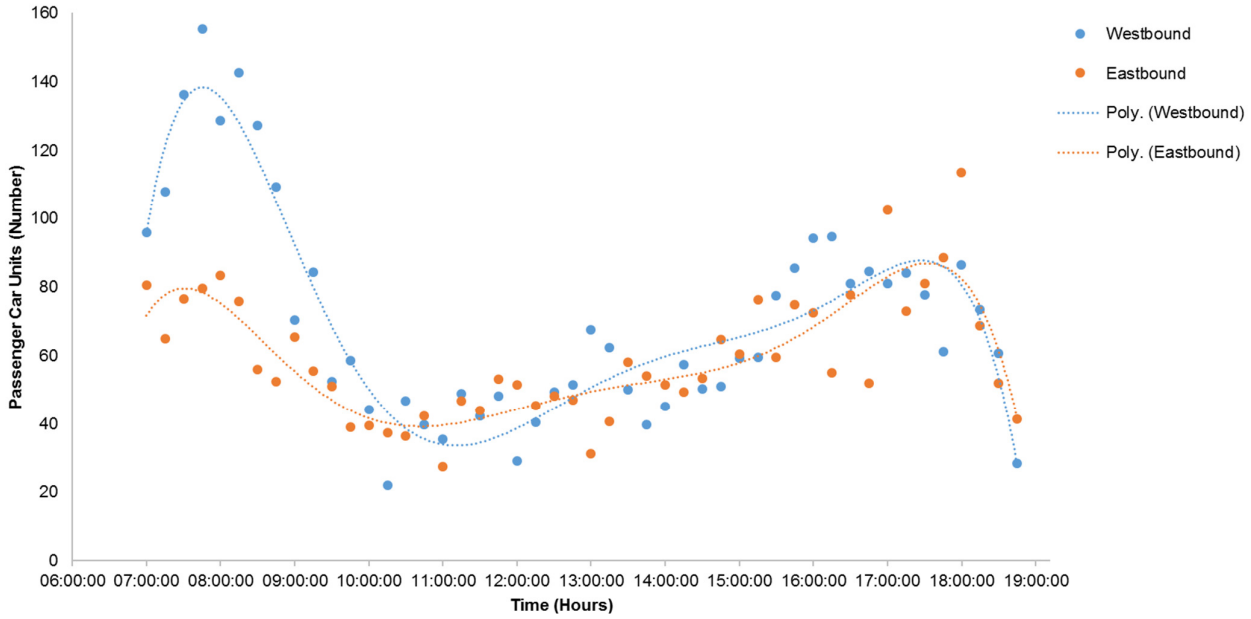
- Streatley Road/Manor Road (Figure A-16); and
- Icknield Way (Figure A-17).

PCUs have been used rather than vehicles to take into account the relatively strong use of these routes by Heavy Goods Vehicles as shown in the analysis in Section 3.10.6. Heavy Goods Vehicles account for multiple PCUs depending on their length.

Manor Road / Streatley Road

Figure A.16 demonstrates the daily variation in flows on Manor Road/Streatley Road per 15-minute period.

Figure A.16 Daily variation in traffic flows on Manor Road / Streatley Road per 15-minute period



This analysis shows a higher volume of PCUs travelling westbound towards the M1 (over 120 PCUs every 15 minutes), than travelling eastbound towards the A6 during the AM peak. During the PM peak, however, there is a similar volume of PCUs travelling westbound as there is travelling eastbound (around 80 PCUs every 15 minutes).

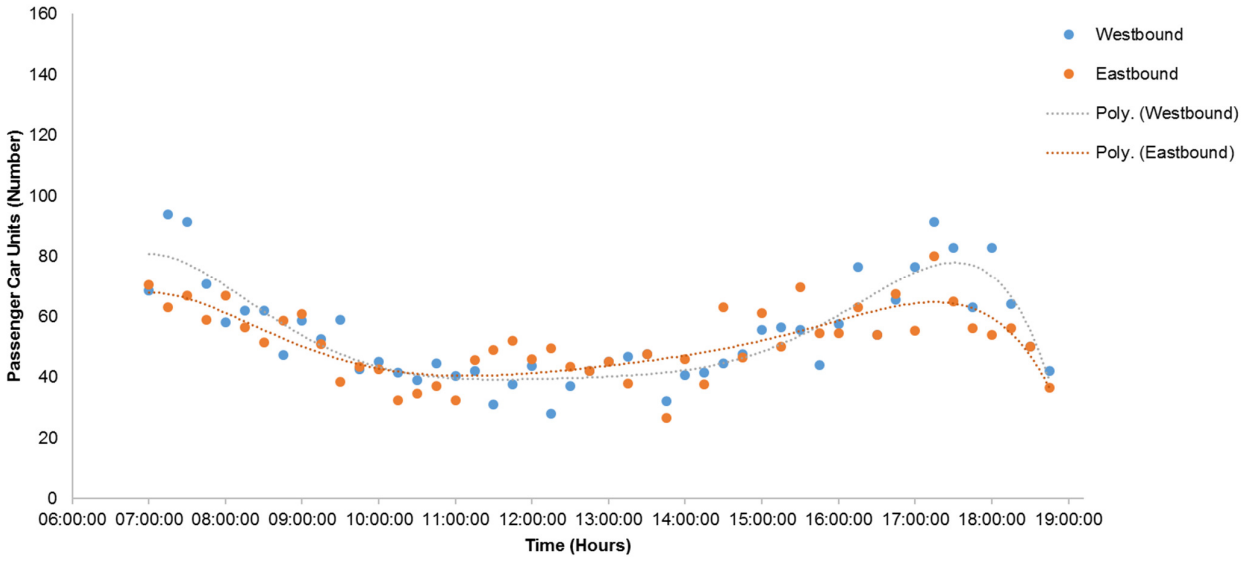
This analysis also indicates that there is an elevated number of people using this Manor Road/Streatley Road to travel between the M1 and the A6 during peak hours. Flows in the afternoon gradually increase until the PM peak for westbound and eastbound traffic, whereas a high volume of westbound flows in the morning are concentrated over a shorter period of time.

The lowest number of flows over the 12-hour period are recorded for traffic in both directions between 10:00-11:30 and after 18:00. After 18:00, eastbound and westbound the number of PCUs recorded decreased quickly. This suggests that this link is primarily used for commuting and employers' business purposes, although, as already stated, the link is not suited to this function.

Icknield Way

Figure A.17 outlines the daily variation of PCU flows on Icknield Way in east and westbound directions per 15-minute period.

Figure A.17 Daily variation in traffic flows on Icknield Way per 15-minute period



This analysis demonstrates that there is a similar usage throughout the day, for eastbound and westbound traffic on Icknield Way. During the AM and PM peaks, there is a slightly higher volume of PCUs travelling westbound than those travelling onto the A6. The AM peak for eastbound and westbound traffic is earlier than the network AM peak, at around 07:00.

Comparing use of both roads, flows on Icknield Way are more consistent throughout the day at an average in the inter peak slightly higher than Streatley Road / Manor Road. However, the marked peak usage of Streatley Road / Manor Road is a consequence of congestion in Luton and the limited suitable routes for HGVs to cross the Midland Mainline.

Appendix B. Detailed analysis of the scheme's strategic fit

B.1 National policy

The following national documents are currently relevant and have been reviewed:

- Department for Transport: Proposals for the Creation of a Major Road Network Consultation, December 2017
- Department for Business, Energy & Industrial Strategy: Industrial Strategy – Building a Britain fit for the future, November 2017;
- Clean Growth Strategy, October 2017
- Department for Transport: Transport Investment Strategy, July 2017
- Department for Communities and Local Government: Housing White Paper, February 2017
- National Infrastructure Commission: Congestion, Capacity, Carbon: Priorities for National Infrastructure, November 2017
- Partnering for Prosperity: A new deal for the Cambridge-Milton Keynes-Oxford Arc, November 2017
- National Infrastructure Commission: Cambridge-Milton Keynes-Oxford Corridor: Interim Report, November 2016;
- Department for Transport: Single Departmental Plan 2015 to 2020, October 2016;
- Rail Freight Strategy, September 2016;
- National Planning Policy Framework, July 2018;
- National Infrastructure Delivery Plan 2016 to 2021, March 2016; and
- Surface transport to airports – House of Commons Transport Committee, February 2016.

Table B.1 summarises key national policies/objectives to which the M1-A6 link would help contribute and why.

Table B.1 : Key national policies and objectives

Policy	Key extracts
Proposals for the Creation of a Major Road Network Consultation (December 2017)	The government has put forward proposals for creation of a Major Road Network following its Transport Investment Strategy earlier in 2017, with five main policy objectives: • Reducing congestion; • Supporting economic growth and rebalancing; • Supporting housing delivery; • Supporting all road users; and • Supporting the current Strategic Road Network (SRN) The MRN will aim to provide increased funding certainty, a consistent network and a coordinated investment programme across the country. *The proposed M1-A6 link would form a strategic connection with the SRN at the M1 and provide an important east-west link with the A505 and A6, both of which are proposed to form part of the new MRN. It is considered that any future link would also likely form part of the proposed MRN.*
Industrial Strategy – Building a Britain fit for the future (November 2017)	The Industrial Strategy White Paper sets out Government's long-term plan to improve living standards and stimulate economic growth through targeted investment in the wake of the UK's vote to leave the European Union. Through science, research and innovation; skills; infrastructure; business growth; procurement; trade; affordable energy; policymaking and institutions, Government frames its nationwide industrial

Policy	Key extracts
	strategy. *The White Paper makes specific mention to five foundations, which the Government believes drives productivity and earning power. The following are of relevance to the M1-A6 link scheme:* 1. Ideas – "We need to do more to ensure our excellence in discovery translates into its application in industrial and commercial practices, and so into increased productivity." (p58) The paper states that an increase in public and private research and development (R&D) holds the key to transforming the UK into the most innovative country in the world, "revolutionis[ing] productivity in all sectors from construction and agriculture to manufacturing and the creative industries" (p66). 3. Infrastructure – "We must make sure our infrastructure choices not only provide the basics for the economy, they must actively support our long-term productivity, providing greater certainty and clear strategic direction. Our investment decisions need to be more geographically balanced and include more local voices." (p128) Recognising that increased connectivity brings a wider variety of jobs within people's reach, Government expects the current £600bn of National Infrastructure and Construction Pipeline funding to be doubled by 2022/23 (p129). 4. Business Environment – "Our Industrial Strategy aims to make Britain the best place to start and grow a business, and a global draw for innovators. We will drive productivity in businesses of all sizes by increasing collaboration, building skills and ensuring everyone has the opportunity of good work and high-paying jobs." (p164) 5. Places – "We will build on the strong foundations of our city, growth and devolution deals and continue to work in partnership with local leaders to drive productivity." (p216) The report specifically notes the potential of the Cambridge-Milton Keynes-Oxford corridor (which the proposed scheme would benefit) to become the UKs answer to Silicon Valley, noting the "nationally significant industry concentrations such as information technology…automotive engineering and professional services." It specifically references £6.9m worth of government funding for autonomous vehicle infrastructure testing shared by the Millbrook proving ground, approximately 10-15 miles north of the proposed M1-A6 link. (p232) *This link would facilitate better east west connectivity of this region and enable housing development to support required homes for growth. The Government has noted a target of 1 million new homes across the Cambridge-Milton Keynes-Oxford corridor by 2020, which this scheme could help facilitate.* Government will also increase the National Productivity Investment Fund to £31bn to support investments in transport, housing and digital infrastructure. The White Paper also commits to working with new technologies and business models in order to tackle mobility-related issues, notably congestion and air pollution. *The M1-A6 scheme is well placed to support many of the governments aims, in delivering enhanced connectivity through strategic improvements to infrastructure, facilitating business growth in key sectors (given the strong presence of technology, airport and aerospace, automotive and engineering) and facilitating the housing required to support job growth in these sectors. The scheme's proximity to the Cambridge-Milton Keynes-Oxford Corridor is of particular importance.*
Clean Growth Strategy (October 2017)	This strategy sets out a comprehensive set of policies and proposals that aim to accelerate the pace of 'clean growth', i.e. deliver increased economic growth and decreased emissions. It sits alongside the Industrial Strategy and a forthcoming Environment Strategy. "Clean growth means growing our national income while cutting greenhouse gas emissions. Achieving clean growth, while ensuring an affordable energy supply for

Policy	Key extracts
	businesses and consumers, is at the heart of the UK's Industrial Strategy. It will increase the UK's productivity, create good jobs, boost earning power for people right across the country, and help protect the climate and environment upon which we and future generations depend." The paper notes that the UK is well placed to take advantage of this economic opportunity clean growth provides, due to its position at the forefront of low carbon industries, including some sectors in which we have world leading positions. It notes the leading position of the countries scientific research base and excellence in the design and manufacturing of leading edge technology. *High performance technology and advanced manufacturing are two key sectors for the wider SEMLEP area, which would benefit from the enhanced connectivity and greater job opportunities afforded by the link road.* In order to meet the fourth and fifth carbon budgets (covering the periods 2023 to 2027 and 2028 to 2032) the UK will need to drive a significant acceleration in the pace of decarbonisation and in this strategy Government has set out stretching domestic policies that keep the country on track to meet our carbon budgets. Specific measures associated with Accelerating the Shift to Low Carbon Transport which represents 24% of UK Emissions include: 29) Work to enable cost-effective options for shifting more freight from road to rail 30) Position the UK at the forefront of research, development and demonstration of Connected and Autonomous Vehicle technologies 31) Innovation: Invest around £841 million of public funds in innovation in low carbon transport technology and fuels. *These are all considered specialist clean growth sectors for the region, which need to be supported with key targeted infrastructure improvements such as the proposed M1-A6 link road to enable future growth.*
Transport Investment Strategy – Moving Britain Ahead (July 2017)	The Transport investment strategy sets out a new long-term approach for government infrastructure spending — meaning cash will be targeted at projects that help rebalance the economy. The strategy aims to help people get to work or school by better connecting towns and cities, unlock land for new homes, and improve business links — forming a crucial strand of the government's strategy to rebalance the economy by ensuring wealth is spread across the UK. *Specific aims that the M1-A6 scheme can help contribute to include:* • Create a more reliable, less congested, and better connected transport network that works for the users who rely on it; • Build a stronger, more balanced economy by enhancing productivity and responding to local growth priorities; • Enhance our global competitiveness by making Britain a more attractive place to trade and invest - long term success in a globalised world depends on our ability to attract job creating investment in our industrial strengths and to trade as frictionlessly as possible with partners. • Support the creation of new housing. As the Government's Housing White Paper recognises below, transport infrastructure is one of the keys to unlocking development and delivering places people want to live.
Housing White Paper – Fixing our Broken Housing Market (February 2017)	The housing market in the UK is not delivering the homes that people need. The ratio of average house prices to average earnings has more than doubled since 1998, making it harder for millions of people to afford their own home. At the root of this lies a failure to build enough homes. Since the 1970s, there have been on average 160,000 new homes built each year in England. This is well below the estimated 225,000 to 275,000 homes per year needed to keep up with population

Policy	Key extracts
	growth and tackle years of under-supply. The Government's Housing White Paper sets out a range of proposals to boost housing supply and create a more efficient housing market (p. 14). It recognises the need to: • "Plan for the right homes in the right places. This is critical to the success of our modern industrial strategy. Growing businesses need a skilled workforce living nearby, and employees should be able to move easily to where jobs are without being forced into long commutes." • "Build homes faster. We will invest in making the planning system more open and accessible, and tackle unnecessary delays. Development is about far more than just building homes. Without the right infrastructure, no new community will thrive – and no existing community will welcome new housing if it places further strain on already stretched local resources." Transport investment can play a key role in helping unlock a housing development. As residential areas expand and new areas develop, we need to ensure there is enough capacity to accommodate demand, that existing residents are well catered for, and that new residents are easily connected to centres of employment and services. *The study area lies is in a strategic location near to London and near to the Oxford-Milton Keynes-Cambridge corridor. This region is a driver of population growth in the UK in terms of population, yet housing affordability remains a major issue in the region. With better affordability in the study area compared to the study area as a whole the scheme is well placed to support Government aims.*
National Infrastructure Commission Report – Congestion, Capacity, Carbon: Priorities for National Infrastructure (November 2017)	The role of the National Infrastructure Commission (NIC) is to take a long-term perspective to 2050 across infrastructure sectors and make independent recommendations based on its world leading experience and expertise and best available evidence. It recognises the need for a transformational response to energy generation and transport by 2050 to meet climate change challenges. Continuing investment will be needed in transport capacity whether to alleviate bottlenecks or to enhance connectivity. It references the high percentage of electricity generating capacity reaching the end of its lifespan over the next 15 years, resulting in a need for an ambitious response. The NIC identified seven priority areas in which it believes current plans and policy frameworks fall well short of what will be required if the UK is to have the infrastructure it requires. • Connected, liveable city-regions: linking homes and jobs. • New homes and communities: supporting delivery of new homes. • Low-cost, low-carbon: ending emissions from power, heat and waste. • Revolutionising road transport: seizing the opportunities of electric and autonomous vehicles. • Financing infrastructure in efficient ways: getting the right balance between public and private sectors. *The proposed M1-A6 Link would assist with many of these aims, facilitating large numbers of new homes and jobs in key sectors such as transportation, manufacturing and R&D and enhancing connectivity across a region which is vital to the UK's economy.*
Partnering for Prosperity: A new deal for the Cambridge-Milton Keynes-Oxford Arc	This updated study by the National Infrastructure Commission for the Cambridge-Milton Keynes-Oxford arc notes that it contains some of the UK's most productive and innovative places, delivering growth and prosperity for the whole country. The study states that the arcs world-class research, innovation and technology can help the UK prosper in a changing global economy.

Policy	Key extracts
(November 2017)	The paper identifies an urgent requirement for improved east-west connectivity and a chronic undersupply of homes as risks to the success of the corridor. It identifies the importance of a new deal for the corridor between the Government, local areas and communities based on: • Improved transport infrastructure to unlock opportunities • Doubling the rate of house building along the corridor • Well connected thriving local communities *The close proximity of the proposed M1-A6 link to the corridor, its importance in enhancing vital east-west connectivity and delivering housing needed for growth, means it is a priority in enabling the proposed new deal to succeed.*
Cambridge-Milton Keynes-Oxford Corridor: Interim Report (November 2016)	The study by the National Infrastructure Commission notes that the Cambridge-Milton Keynes-Oxford corridor could become the UK's centre for science, technology and innovation. The area includes complementary skills and high value industries yet these generally operate in isolation with a series of distinct travel to work markets. "New east-west transport links present a once-in-a-generation opportunity to secure the area's future success" (p5). The paper identifies the success of the corridor as being at risk due to "poor east-west transport connectivity and limited 'last mile' capacity into certain centres and other employment locations" (p9). *The Cambridge-Milton Keynes-Oxford corridor includes the study area for the M1-A6 scheme. The scheme is well placed to complement other initiatives in the corridor by improving east-west connectivity and realise inward investment that provides the affordable and accessible homes the region's growing and high value businesses need.*
DfT Single Departmental Plan 2015 to 2020 (October 2016)	The Government's vision is to invest in order to make journeys "simpler, faster and more reliable". This will support jobs, business growth and bringing the country closer together. The level of investment in transport is to increase by 50% by 2020 to boost productivity, market competitiveness, employment opportunities and innovation. The Plan recognises that the Midlands is at the centre of our transport networks. Investment there is fundamental to creating a modern, inter-connected transport network nationwide. *The scheme supports this plan through the support it will provide businesses in this part of the Midlands and further afield. The study area as with other parts of the Midlands plays an important role in logistics and distribution, with an efficient and reliable road network critical to the productivity of the businesses reliant on the movement of goods.*
Rail Freight Strategy (September 2016)	The rail freight industry brings significant benefits to the UK including increased productivity, reduced road congestion and environmental benefits. "Rail freight has real potential to contribute to reducing UK emissions as well as building a stronger economy and improving safety by reducing lorry miles". "Shifting more freight from road to rail therefore has the potential to make a real contribution to meeting the UK's emissions reduction targets" (p6). The paper identifies the development of high capacity Rail Freight Interchanges (RFIs) as a priority issue which should be considered to support rail freight in achieving its growth and modal shift targets. *The scheme directly supports this goal through its facilitation of the development of a Strategic Rail Freight Interchange at Sundon accessed from a M1-A6 Link Road. This will be well placed to help transfer goods to/from the M1 to the Midland Mainline and beyond.*

Policy	Key extracts
National Planning Policy Framework (July 2018)	The planning system's purpose is to support the delivery of sustainable development at the economic, social and environmental levels. Sustainable economic development should be supported by the delivery of homes, business units, infrastructure and successful local places. The NPPF (para 72) notes that "the supply of large numbers of new homes can often be best achieved through planning for larger scale development, such as new settlements or significant extensions to existing villages and towns, provided they are well located and designed, and supported by the necessary infrastructure and facilities." Para 82 notes that "planning policies and decisions should recognise and address the specific locational requirements of different sectors. This includes making provision for clusters or networks of knowledge and data-driven, creative or high technology industries; and for storage and distribution operations at a variety of scales and in suitably accessible locations." *Central Bedfordshire Council has worked closely with the developers of the proposed North of Luton and Sundon Rail Freight Interchange Strategic Allocations, alongside Luton Borough Council to develop a concept for a scheme that provides the necessary infrastructure for its sustainable development by providing road links to the M1 and A6.*
National Infrastructure Delivery Plan 2016-2021 (March 2016)	Government has pledged to invest over £100bn on economic infrastructure by 2020-21. This is aimed at supporting growth and creating jobs in the short-term as projects are built, as well as support job creation and international competitiveness in the long-run as labour and product markets are better integrated. Local roads specifically will be provided with £5bn in the same time period. It is recognised that "over the decades, the quality of the network has declined and congestion, noise and poor air quality have become problems". Also, "poor or missing links mean cities which are close together do less business with one another" (p27). "To support its vision for a sustainable transport system, the government believes there is a need for an expanded network of Strategic Rail Freight Interchanges (SFRIs), to facilitate the transfer from road to rail" (p35). *The scheme supports these goals, helping to unlock land for housing, economic development and a rail freight interchange. It also helps to better connect growth north of Luton with the wider economy and play a full part in the success of the South East Midlands.*
Surface transport to airports – House of Commons Transport Committee (February 2016)	The paper notes the need for the Government to lead "integrated transport planning which will benefit airports and the country as a whole" (p3). "Not only can airports with good surface access make more of the opportunities they have to grow and contribute to the economy, but they can also play a part in achieving wider policy objectives such as reducing congestion and improving air quality" (p13). *While the scheme does not directly link to London Luton Airport, it will help to provide general relief for traffic in Luton benefitting both local private and public transport links to the airport. It also provides an opportunity for new employment associated with aerospace, engineering and logistics to locate near to the airport, SRN and Midland Mainline delivering agglomeration benefits.*

B.2 Sub-regional policy

The following sub-regional documents are currently relevant and have been reviewed:

- South East Midlands Local Enterprise Partnership (SEMLEP) Strategic Economic Plan, Autumn 2017;
- SEMLEP Local Industrial Strategy, Emerging Priorities July 2018;
- SEMLEP Industrial Strategy Consultation Response, April 2017;
- SEMLEP Transport Strategy, March 2014;
- England's Economic Heartland (EEH): Transport Priorities, September 2017
- England's Economic Heartland (EEH): Planning for Growth, October 2016; and
- Hertfordshire Local Enterprise Partnership Strategic Economic Plan 2017-2030, July 2017.

Table B.2 summarises key sub-regional policies/objectives to which the M1-A6 link would help contribute and why.

Table B.2 : Key sub-regional policies and objectives

Policy	Key extracts
South East Midlands Strategic Economic Plan (Autumn 2017)	SEMLEP is prioritising development of the Cambridge-Milton Keynes-Oxford growth corridor directly to the north of Luton, aiming to transform the region into 'a hub of knowledge-intensive industry that can compete on the world stage'. Two of their overarching priorities in achieving this which are relevant to the M1-A6 link scheme are to: *Grow business* – both in terms of growing private sector investment and deliver greater trading activity between companies the area and elsewhere. (p3) *Grow places* – "to deliver the infrastructure needed to achieve [the region's] full growth potential"; and "deliver sufficient homes to meet the housing needs of our ever-growing population." (p5) In relation to growing business, the Strategic Economic Plan notes that the supply of employment land across the Cambridge-Milton Keynes Oxford Growth Corridor and industrial and warehousing land is low relative to continually strong demand This represents a major challenge for the area. Savills writes ""On current projections demand for industrial and warehousing property in the corridor exceeds supply in the next three to eight years. This is most acute along the M11 and M1 corridors where demand has grown strongly over the past two years."[70] *The scheme directly accords SEMLEP's goals. The report notes that the proposed M1-A6 link will help "improve access and open up employment and housing land north of Luton" (p63)*

[70] Savills, (2016), The Property Market Within the Cambridge- Milton Keynes-Oxford Corridor in SEMLEP Strategic Economic Plan Autumn 2017

Policy	Key extracts
SEMLEP Local Industrial Strategy Emerging Priorities (July 2018) & Consultation Response to HM Government's Industrial Strategy (April, 2017)	The Industrial Strategy recognises the leading role that LEPs have in shaping and delivering locally-led economic growth. Local Enterprise Partnerships are tasked with developing Local Industrial Strategies. These strategies will align with the national industrial strategy and will be long-term. Government has identified the Oxford-Milton Keynes-Cambridge Growth Corridor area, which includes the South East Midlands, as one of three trailblazer areas for the first of the Local Industrial Strategies, due to be complete by March 2019. The area was chosen because of our potential to drive wider regional growth, focusing on clusters of expertise and centres of economic activity. Emerging priorities include a specific focus on: • Tackling the shortage of good quality employment premises and space, particularly for smaller, expanding businesses critical to the region's supply chain and sector strengths • Positioning the area as the central place to commercialise new technology, bringing in and generating more of the innovation, R&D strengths of the universities and businesses within the Oxford-Milton-Keynes-Cambridge Growth Corridor • Maximising and promoting high-tech development and high value specialisms – such as next generation vehicles and logistics • Specialist business support to those businesses who have the potential for rapid growth • Tackling issues that growing businesses have with access to energy and core utilities. In the 2017 response to HM Government's consultation, SEMPLEP welcomed the government's emphasis on anchoring economic development in local areas. SEMPLEP agreed with the principles advocated, which included strategic infrastructure investment.
SEMLEP Transport Strategy (March, 2014)	This strategy recognises that to enable growth "there is a need to strengthen east-west links" and that amongst others "the areas of Dunstable and Houghton Regis adjoining Luton offer the greatest potential for longer term growth" (p5). "It is clear that appropriate transport investment has a vital role to play in the economic vitality and wellbeing of the SEMPLEP area and that this can support the wider economy by both unlocking bottlenecks on the national strategic transport network and by improving linkages between these networks" (p6). The document identifies four main objectives: • "Protect and enhance the built and natural environment"; • "Provide high quality, safe access to services and opportunity"; • "Maintain and enhance the regions links with the wider economy"; and • "Build capacity to enable growth and economic development" (p30). *The scheme supports the strategy in maximising the potential of the Luton-Dunstable-Houghton Regis conurbation, by providing an east-west link between the A5 and A6 via M1 Junction 11a. This provides the capacity to enable growth in housing and economic development, and also provide better east-west connectivity in the region.*

Policy	Key extracts
England's Economic Heartland Strategic Road Investment Priorities (September 2017)	England's Economic Heartland (EEH) is a strategic transport forum bringing together local enterprise partnerships from an area wider than that covered by SEMLEP, including Central Bedfordshire, Luton, Milton Keynes, Northampton, Cambridge and Oxford amongst others. One of its objectives is to improve the operation and resilience of strategic and local road networks. An updated Strategic Road Investment Priorities Report was released by EEH in September 2017. It notes that the EEH supports the proposals for development of a Major Road Network (MRN) and delivery of Road Investment Strategy (RIS) goals, which include the Oxford to Cambridge Expressway strategic study, to report by 2018/2019. *The report also reiterates the importance of improved east-west connectivity as identified by the National Infrastructure Commission, with the M1-A6 link and east-west links such as the A505 considered a priority for the region.*
England's Economic Heartland Planning for Growth (October, 2016)	The EEH's vision is "to deliver a transport system that integrates infrastructure and services in support of both economic activity and place-shaping" (p2). The objectives include: • "Encourage investment to promote growth in markets and productivity"; • "Improve transport connectivity to support Enterprise Zones and growing businesses sectors" (p5). EEH recognises the importance of improving east-west and first mile/last mile connectivity in allowing transport networks to work properly, "providing improved connectivity to other major centres of growth for all localities throughout the Heartland" (p10). *The paper states the M1 to A6 link road to be one of the priorities for funding, forming a northern bypass for Luton.*
Hertfordshire Local Enterprise Partnership Strategic Economic Plan 2017-2030 (July 2017)	Titled "Perfectly Placed for Business", the paper details neighbouring Hertfordshire's medium term economic strategy. "Hertfordshire should share (and indeed drive) the agglomeration advantages deriving form a buoyant world city, whilst also valuing the strengths and character of some distinctive towns and the surrounding rural areas" (p15). The paper refers to the crucial need for infrastructure to be fit for purpose as demands on it increase while it states that their transport infrastructure is "chronically congested" (p15). It is stated that west Hertfordshire needs to respond appropriately and proactively to planned growth around Luton and Milton Keynes. The paper also recognises the importance of improved east-west connectivity. The document asks what might be achieved through enhanced east-west connectivity across Hertfordshire (p.27). "The planned growth at Stansted Airport is substantial and it will certainly affect north east Hertfordshire. Whilst Luton Airport cannot grow to the same extent, Luton itself will grow. The A120, A602, A505 and A414 all need to feature in improved east-west connectivity." No firm proposals are offered in terms of the A505, except to say that along with the other east-west roads its role will need consideration to enable the area to fulfil its medium-long term economic potential (p.29), with a strong economic narrative essential to any plans. *The M1-A6 scheme as proposed does not preclude potential longer term plans for the A505 in Hertfordshire.*

B.3 Local policy

The following Local documents are currently relevant and have been reviewed:

- Pre-submission Central Bedfordshire Local Plan 2015-2035, January 2018
- Luton Local Plan (2011-2031), November 2017;
- North of Luton Framework Plan, March 2015;
- Central Bedfordshire Local Transport Plan 4, April 2016; and
- Luton Local Transport Plan 2011-2026, March 2011.

Table B.3 summarises the key local policies/objectives to which the M1-A6 link would help contribute and why.

Table B.3 : Key local policies and objectives

Policy	Key extracts
Central Bedfordshire Local Plan 2015-2035, Pre-Submission (January 2018) – submitted to government on 20 April 2018	Central Bedfordshire Council has developed a new Local Plan for examination in 2018. Once adopted it will guide and support the delivery of new infrastructure, homes and jobs. In accordance with the Duty to Cooperate, Central Bedfordshire has helped plan for any unmet housing and employment needs from neighbouring Local Authorities, specifically Luton. The plan states that there is a need to improve existing transport networks and "ensure that growth is designed and delivered in ways which will benefit existing neighbouring communities" (p31). The strategic objectives for the plan include: • SO1: "Ensuring sustainable growth and associated infrastructure"; • SO2: "Delivering enough homes and jobs to meet our needs"; • SO4: "Create high quality neighbourhoods"; • SO5: "Provide a minimum of 24,000 jobs by 2035, accommodating new economic growth along strategic and sustainable transportation routes"; • SO7: "Link deprived areas with employment benefits"; • SO10: "Encouraging the shift from road to rail freight to reduce demands of the highway network"; • SO11: "Promote healthier and more active lifestyles by improving the quality of, and accessibility to, the area's open spaces"; and • SO13: "Support the necessary changes to adapt to climate change by minimising emissions of carbon and local air quality pollutants" (p24-25). Policy SA1 contemplates a vision for North Luton being "an extension to Luton that will provide a mix of uses necessary to achieve a sustainable and vibrant community". A road to link the M1 and M6 is proposed to mitigate the impacts of the development on the transport network. Policy SE1 identifies the M1 Junction 11a at Sundon as a site for an intermodal rail facility occupying 5 hectares, and another 40 hectares of new employment land accommodating B8 warehousing and distribution uses. This will be connected by a new strategic road between Sundon Park Road and the M1 Junction 11a.

Policy	Key extracts
Luton Local Plan 2011-2031 (November 2017)	The vision for Luton is to achieve economic prosperity and improved quality of life through an efficient and sustainable use of their economic, social and environmental assets. The plan's objectives include: • SO1: Retaining and enhancing economic growth and opportunity; • SO2: Utilising resources efficiently and sustainably; • SO3: Ensuring adequate provision of housing; • SO6: Reducing social, economic and environmental deprivation; • SO8: Improving accessibility, connectivity and ease of movement; and • SO11: Secure improvements in air and water quality. Key transport issues include "significant traffic congestion" in Luton and a lack of orbital routes (p90). Also, there is a need for "increasing road capacity, including improved access to the Airport" (p91). "The Council will encourage proposals for rail freight interchange… such as the freight consolidation centre proposed at the former Sundon Quarry" (p96). Furthermore, the Sundon area (Sundon Park) is seen as a potential location for a Business Park and an Industrial Estate. Land to the north of Luton, whilst within the administrative area of Central Bedfordshire, forms part of the wider Luton Housing Market Area. The Spatial Development Strategy section of the Plan states that: "Luton Borough Council will seek to ensure delivery of the housing need that cannot be met within the Borough within the wider Housing Market Area. As evidenced through the SHMA, Luton has the strongest functional links with Central Bedfordshire, therefore it is expected that a significant proportion of the Luton's unmet housing needs will be met in Central Bedfordshire." The Borough Council notes that in the interests of the town and sustainability it would best be served by meeting Luton's unmet housing needs as close as possible to the communities from which the need arises. Indeed, under the duty to cooperate and in response to neighbouring plan preparation, particular consideration should be given to this Council's policy supporting development to the west of Luton, with request of a thorough examination of strategic cross-boundary options around the town (i.e. that an assessment of options north, east, south and west of Luton should be examined)." *It is evident therefore that the M1-A6 Link directly supports the plans of the Authority in providing a northern radial link, facilitating its unmet housing need, additional employment and a rail freight interchange.*
North of Luton and Sundon Rail Freight Interchange Strategic Allocations Framework Plan (March 2015)	This Framework Plan was prepared by the Council in consultation with the North Luton Consortium and Prologis to give further clarity and detail around the strategic allocations identified in the Central Bedfordshire Development Strategy. The Framework Plan was subject to extensive consultation and the Council actively engaged with technical specialists, stakeholders and officers in preparing the plan on specific areas such as transport, as well as Luton Borough Council in accordance with the Duty to Cooperate. The Framework Plan was published for a formal period of public consultation and was formally adopted on 31 March 2015. The planned development (including residential, commercial and the RFI) are expected to "form distinctive places, whilst ensuring that they appropriately integrate and connect" (p10). Key points that the M1-A6 Link will need to help

Policy	Key extracts
	the new character areas achieve: • Connecting with their surroundings – through safe and convenient routes for all modes of travel • Help form new communities – where people will have a good quality of life • Contribute towards a sustainable future – with places with climate change mitigation built in, and with a low impact on or improvement on the environment, health and well-being of residents • An emphasis on good design • Provide for new businesses and employment opportunities • Conserve and enhance the Area of Outstanding Natural Beauty, countryside and local heritage, including people's access to it *These are aims that will continue to guide the detailed design of both the M1-A6 scheme and the Masterplan itself.* The plan details the provision of a new strategic link between the M1 and A6, which "will benefit the wider transport network and provide access to the development". The link "will also form part of a wider east-west orbital route around the Luton, Dunstable and Houghton Regis conurbation, linking to the A5-M1 link road scheme via the new M1 Junction 11A" (p20). A further link from the A6 to the A505 is not considered to be a requirement to support the planned developments.
Central Bedfordshire Local Transport Plan 4 (April 2016)	The focus of the authority's new emerging LTP is to deliver sustainable growth and it focuses on three broad areas: • Capacity: "New development will increase pressures on the transport network and the demand to travel in the local area". New capacity will be needed; • Connectivity: Improvements in connectivity will be needed so that communities can access new jobs and opportunities; and • Communities: "Safe, attractive and inclusive communities" should be achieved so that people want to live in them and businesses want to invest in them. The LTP lists a series of key issues that should be targeted, including congestion, missing links in the network, inappropriate routing of traffic, severance, movement of freight and air quality. *The scheme directly addresses the three broad areas by providing new capacity and journey opportunities, alongside the enhancement of existing communities through the removal of strategic trips and through traffic from the surrounding villages and northern suburbs of Luton by providing a more appropriate and safer alternative. The scheme will also need to support the delivery of a safe, attractive and inclusive community for the North of Luton and Sundon Strategic Allocations, which will be assured as the detail of the M1-A6 scheme is developed.*

Policy	Key extracts
Luton Local Transport Plan 2011-2026 (March 2011)	The aims of the Plan include, amongst others, generating "continued employment and prosperity", supporting the growth of Luton as "an international gateway" and laying the "foundations for future expansion" (p15). The Plan mentions that the main priority at the strategic level for Luton-Dunstable-Houghton Regis conurbation is improving east-west connectivity. It details the importance of the Luton Northern Bypass and the desire of the Borough Council to ultimately see it extended further eastwards to connect with the A505: "Public consultation on alternative routes for Luton Northern Bypass was presented at a public and stakeholder consultation in early 2009. The results of that consultation were reported to the Joint Committee that March, and the Committee resolved to support proposals for an outer bypass subject to the outcome of further more detailed work. A full northern bypass of Luton between the M1 and the A505 Hitchin Road will remove through traffic both from roads within Luton Dunstable and Houghton Regis and also from unsuitable minor roads outside the conurbation. The section between the M1 north of Luton and the A6 Barton Road will be designed as part of the master-planning for the North Luton SSSA (Strategic Site Specific Allocations) which is identified in the Luton and southern Central Bedfordshire Core Strategy and will be constructed as part of the that planned development (now referred to as the North of Luton and Sundon Strategic Allocations described above). East of the A6, proposals are for a link through to the A505 Hitchin Road" (p74). *The M1-A6 scheme as proposed does not preclude these aims.*

Appendix C. Scheme General Arrangement

The drawings that follow are best printed at A3 or on a plotter at larger print size.