Leicester Transport Plan (Draft)

Supporting Document:

Evidence Base

Leicester City Council

Draft Leicester Transport Plan 4 Evidence Base June 2021

1. Introduction

1.1 This document provides the evidence base to support the production of the draft Local Transport Plan (LTP 4) for Leicester. This Evidence Base draws on several sources from published data, forecasts and strategy documents as well as existing studies and surveys at a local, sub- regional and national level.

1.2 The evidence review is an important part of the LTP4 development process. It provides an opportunity to understand existing travel patterns and reasons why people travel in Leicester.

1.3 The findings of the evidence base have helped to inform the development and agenda of Leicester's LTP4. Many of the chapters are cross cutting and contain evidence relevant to more than one theme.

1.4 Structure of the report:

1. Introduction

2. Summary of Key Findings
   A summary of the key findings from the individual evidence chapters.

3. Demographic & Socio-economic review
   A review of the socio-economic activity and trends such as population, health and the economy

4. Transport and Travel
   A review of the travel patterns

5. Urban Development: Housing and Employment Growth
   A review of housing and employment growth projections

6. Environmental Issues
   A review of the environmental issues and considerations

7. Technology / Innovative / Future Transport
   A review of technology and innovation that may shape the future of transport.

2. A Summary of Key Findings:

2.1 Demographic and Socio-Economic Review

- Leicester is predominately an urban area and is the 9th largest city (in terms of population size)
- It is anticipated that there will be a year on year population increase - higher than is expected for England over the same period to 2041 – and a growing population will lead to an increase number of trips on the transport network.
- Leicester's population is relatively young compared with England – this reflects the student population attending Leicester's two universities
- Almost half of Leicester's residents classify themselves as belonging to an ethnic group that is not white
- Leicester has a high level of deprivation compared to England and is ranked 32nd out of 317 local authority areas in England on the 2019 national Index of Deprivation
- Leicester records educational attainment below the UK average with 28% of Leicester's residents having no qualifications against a figure of 22% for Great Britain. Leicester's low average attainment is likely attributable to higher levels of deprivation.
- The local economy is characterised by a very strong and diverse small business community. It has a larger manufacturing sector than the national average.
- There is growing confidence and strength of the city economy which is well evidenced through major inward investment and a significant number of new jobs including Hastings Insurance and Mattioli Woods, together with other new office-based businesses
- In January 2019, 2.4% of the working age (16-64) population for Leicester, claiming out of work benefits, compared to 2% in the East Midlands and 2.4% in the UK.
- Leicester sees a large inflow of commuters (highest in the LLEP area) – more workforce jobs than residents in employment. Leicester has a workday population of 641,000
- Life expectancy in Leicester is lower than the England average
- High levels of inactivity (less than 150 minutes per week) are more common in older age groups and black ethnic groups.

2.2 Transport and Travel

- Leicester is ranked as the 11th & 13th most congested UK city by TomTom and INRIX respectively (2019) - this creates an opportunity to manage the demand for road space.
- Leicester has a relatively low level of car ownership, providing both an opportunity for and a reliance on public transport and other modes of travel. Lowest income households have higher levels of non-car ownership – young people and Black Minority Ethnic group are concentrated in this quintile
- The modal share in Leicester differs greatly across cordons (Inner Ring Road, Central Transport Zone, Outer Ring Road) - Outside of the city centre the car is very much the dominant mode for the vast majority of travellers.
- Congestion causes delay and can have a significant impact on the local economy. The environmental impacts of stationary or slow moving traffic is felt in terms of poor air quality, leading to associated health problems.
- Within Leicester, 25% of all car journeys are under 2km, the average trip in Leicester is 5km and some 93% of Leicester's households are within 400 m of a bus stop,

mostly linking to the city centre – providing an opportunity to convert journeys by car to sustainable modes of transport.

- The council's ongoing Connecting Leicester programme has seen substantial investment in public and sustainable transport amounting to over £100m - from a base of 2,813 in 2014 cycling trips have doubled to 5,870, an increase of 3,057 or 109%. Continued investment in the network and behaviour change will help to further accelerate this trend.
- However, the number of public transport trips starting or ending in Leicester has declined by 9%, or 2.6m since 2011/12 – indicating a need to promote public transport and remove barriers to use.
- Rail usage at Leicester has grown by 4.8m (2012) to 5.3m (2019/20).
- However, Leicester Rail Station is a key transport hub for the city but has received little investment in recent years compared with other comparable stations and last received a major overhaul in 1974. It is very poor compared with others of a similar size - It has the potential to play a much greater role, particularly to serve and support planned housing and employment growth.
- We need to rebalance people's travel behaviour, where possible, reducing the amount people travelling by car and by prioritising travel by more sustainable alternatives.
- The location, amount, quality and type of parking provision can influence travel behaviour and it is important that we carefully manage the provision of new parking.
- Covid 19 has resulted in significant impacts on travel. As of June 2021:
    - total car usage has broadly returned to near pre-covid levels albeit that the morning peak is far less evident pending the return of office based workers in larger numbers. The afternoon peak appears spread across the whole afternoon rather than concentrated at the end of the working day.
    - Car parking levels are starting to recover from a low base.
    - Bus patronage has been substantially reduced during covid but has reached as high as 80-90% of pre-covid levels since the opening of retail on 12th April 2021.
    - Park and ride levels are recovering slowly from a very low base.
    - Rail station activity dipped substantially under lockdown but has recovered significantly.
    - Cycling and walking in outer areas was particularly strong during Covid although levels in the city centre had fallen due to retail and leisure lockdowns. Cyclist numbers are recovering strongly in the centre as lockdown has been released, but pedestrian numbers are still below pre-covid levels.

2.3 Urban Development: Housing and Employment Growth

- The plan is for the continued growth of Leicester, regenerating its central areas and complementing this with strategic extensions beyond the established urban area
- The Draft Local Plan states that provision needs to be made for a minimum of 29,104 dwellings during the plan period 2019 - 2036 (1,712 dwellings per year). There is an unmet need (of 7,742 homes) and the distribution of housing will be met by the HMA partners under Duty to Cooperate. The 20 largest cities in the UK (including Leicester) have been asked by the Government to increase their housing targets by 35%.
- Major housing growth is planned for the Central Development Area (CDA) with nearly 5,000 new homes by 2036 - creating a more sustainable settlement where

residents can take advantage of the excellent public and active travel options available

- To the North and West of the city, major housing growth through sustainable urban extensions is underway which will require a focus of transport interventions
- Post-2031, proposed future housing growth through the Strategic Growth Plan will require local authorities to co-ordinate land use and transport planning - new park and ride sites are likely to be required serving the south and east of the city.
- Strong journey to work movements from the county into Leicester to employment areas in the city, combined with city centre movements already create significant congestion problems on the main corridors into Leicester – future housing growth will only exacerbate this problem further – this provides an opportunity to provide high quality integrated transport hubs to move people quickly and efficiently between different sustainable transport modes.
- Additional public transport capacity may be required on key Leicester radials to minimise the impact of increased patronage on journey ambiance and quality.

2.4 Environmental issues

- Leicester City Council declared a Climate Emergency in February 2019 and a Climate Emergency Strategy 2020-23 has now been adopted by the Council. It has an ambition to become carbon neutral by 2030 or sooner.
- The LTP needs to deliver more sustainable transport options to respond to this challenge.
- 25% of Leicester's CO_2 from emissions from energy use are from transport and transport emissions have fallen by 11 per cent since 2005.
- 80% of NO_2 emissions is from road traffic emissions - air pollution affects people's health. It is responsible for an increased number of adults dying from stroke, heart disease and lung cancer and for more people being admitted to hospital with breathing and circulatory problems. In 2010 there were an estimated 162 premature deaths where air pollution was a contributory factor in Leicester, or 6.6% of all adult deaths.
- People who live in more deprived areas are more affected than people living in less deprived areas even if they are exposed to the same levels of pollution. Those who are already in poor health are more affected by pollution than those who are healthy. Air pollution is thus an equality issue and tackling it will help to address Leicester's health inequalities.
- ULEVs are expected to increase their market share more rapidly as technology improves, prices come down and we approach the government's proposed date of 2030 when new petrol, diesel and hybrid cars will no longer be available. Nonetheless, there are likely to remain a number of petrol and diesel vehicles on the roads by 2030.
- Bus priority helps address climate change. If everyone switched just one car journey a month to bus that would mean one billion fewer car journeys in the UK, saving 2 million tonnes of CO_2 a year

2.5 Technology / Innovative / Future Transport

- A Mobility as a Service concept is a relatively new innovation. The use of smartphones has provided opportunities to engage with travellers and to influence the demand on the highway / transport network. Therefore, it is important for

Leicester to monitor national developments in these emerging new areas as they could realise any opportunities for improved efficiency and mobility.

- The use of Ultra Low Emission Vehicles (ULEV) is rising and Leicester needs to support the anticipated growth to ensure that there is adequate infrastructure (in Leicester, half of the petrol and diesel car commuters surveyed would be encouraged to change to an Electric Vehicle if their company installed charging points at work). Developments in vehicle technology will contribute towards the reduction of transport related pollution in Leicester
- Electric cars will cost the same to make as conventional cars, with internal combustion engines, by 2024, but there will have to be a major investment in supporting infrastructure to also support the required uptake.
- Since the COVID pandemic has broken out, this has resulted in many changes to people's lives and possibly accelerated the changes such as more home working.

3.Demographic & Socio-Economic review

3.1 Population

Leicester is predominately an urban area and is the 9th largest city (in terms of population size)[1] and the largest city in the East Midlands (ONS 2018 mid-year estimate). The Leicester urban area covers the administrative area of the city and other settlements such as Thurmaston, Birstall, Glenfield, Leicester Forest East, Braunstone Town, Syston, Anstey, Glen Parva, Oadby, Wigston and Scraptoft. The population of the area is approximately 650,000. Leicestershire County covers an area of 215,600 hectares and has a population of just over 1 million. However, whilst Leicester is predominantly an urban area, some wards on the outskirts of the city fall under the rural classification; in 2017, 79% of the people in Leicester lived in urban areas.[2]

The administrative area of the City Council covers nearly 7,500 hectares with a population of about 355, 218. The usual resident population has increased by around 25,600 since the 2011 Census[3]. This could be partly due to its continued ability to attracts migrants, with a high student population likely to be a key factor as well as the city's attractiveness to those moving from abroad. The in-flow of long-term international migrants to Leicester ranks 19th across all local authorities within the UK, or eight highest when excluding London boroughs.[4]

Leicester's population is relatively young compared with England; a third of all city households include dependent children, 20% of Leicester's population (72,600) are aged 20-29 years old (13% in England) and 12% of the population (42,300) are aged over 65 (18% in England). The large proportion of younger people in Leicester reflects the student population attending Leicester's two universities and inward migration to the city.[5]

The population over the age of 65 is forecast to increase in all local authorities in the Leicester and Leicestershire Economic Partnership (LLEP). In 2018, Leicester had the largest 65-and-over population with 42,000 residents, but this represented the lowest share across the LLEP local authority areas, at just 11.8 percent.[6]

3.2 Population Projections

Figure 1 shows the projected population growth in Leicester compared to England. The figure anticipates a year on year population increase in Leicester over the next 25 years. It estimates a 7.5% increase between 2016 and 2026. In the longer term, a 16% increase is estimated by 2041. This rate is higher than that expected for England (12%) over the same period. Additionally, predicted populations for age groups estimate that older persons will account for increasingly large proportion of Leicester's population. By 2041 over 65's will make up an estimated 15.9% of the population, compared to 11.9% in 2018, representing a net increase of 23,700. Over the same period, Leicester's under 20s will increase by 9,200, and 20–64 year olds will increase by 19,200.

[1] https://www.leicester.gov.uk/media/186489/living-in-leicester-adults-jsna-2020.pdf

[2] https://llep.org.uk/app/uploads/2020/11/Local-Industrial-Strategy-Economic-Review-June-2019.pdf

[3] https://www.leicester.gov.uk/media/186489/living-in-leicester-adults-jsna-2020.pdf

[4] https://llep.org.uk/app/uploads/2020/11/Local-Industrial-Strategy-Economic-Review-June-2019.pdf

[5] https://www.leicester.gov.uk/media/186489/living-in-leicester-adults-jsna-2020.pdf

[6] https://llep.org.uk/app/uploads/2020/11/Local-Industrial-Strategy-Economic-Review-June-2019.pdf

3.2.1 An Ageing Population

The overall population will age at a faster rate than we have observed historically.[7] The possible implications on an ageing population is that when older people give up driving, their self-reported quality of life is reduced, reflecting the affective and aesthetic qualities of mobility that a car affords that walking and public transport lack. Giving up car use can lead to reduced independent mobility and significant lifestyle change[8] . Possible difficulties can occur in accessing key services (e.g., shops, hospitals).

Figure 1:

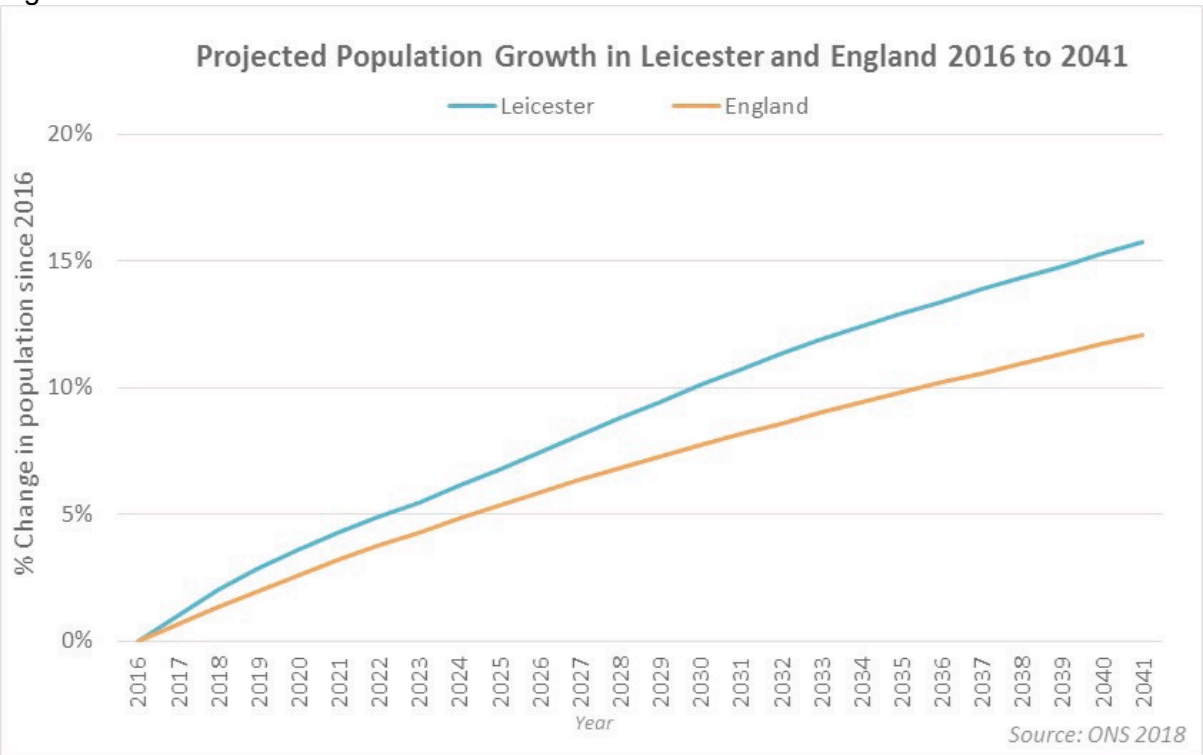


Figure 1 shows the projected population growth in Leicester compared to England. It is anticipated a year on year population increase in Leicester over the next 25 years. It is estimated that there will be a 7.5% increase between 2016 and 2026. In the longer term it is estimated that a 16% increase by 2041 – this rate is higher than that expected for England (12%) over the same period.[9]

3.3 Diversity

Leicester is one of the culturally diverse cities in the UK. An example of this, Narborough Road — running from the south west of Leicester to its city centre — was identified as one of only four 'super-diverse' high streets across the UK in a 2017 study. [10] Twenty-eight per cent of the population are born outside of the EU. Almost half of Leicester's residents classify themselves as belonging to an ethnic group that is not white[11]. It is the UK's most diverse city with 240 faith groups and more than 70 languages spoken by the residents. Almost half of Leicester's residents classify themselves as belonging to an ethnic group that is not white. Leicester has one of the country's largest Asian communities (37% of the population), with 28% of all residents defining themselves as of Indian heritage and 9% other Asian groups. At

[7] https://llep.org.uk/app/uploads/2020/11/Local-Industrial-Strategy-Economic-Review-June-2019.pdf

[8] https://www.researchgate.net/publication/247919951_Mobility_accessibility_and_quality_of_later_life

[9] https://www.leicester.gov.uk/media/186489/living-in-leicester-adults-jsna-2020.pdf

[10] https://llep.org.uk/app/uploads/2020/11/Local-Industrial-Strategy-Economic-Review-June-2019.pdf

[11] https://www.leicester.gov.uk/media/186489/living-in-leicester-adults-jsna-2020.pdf

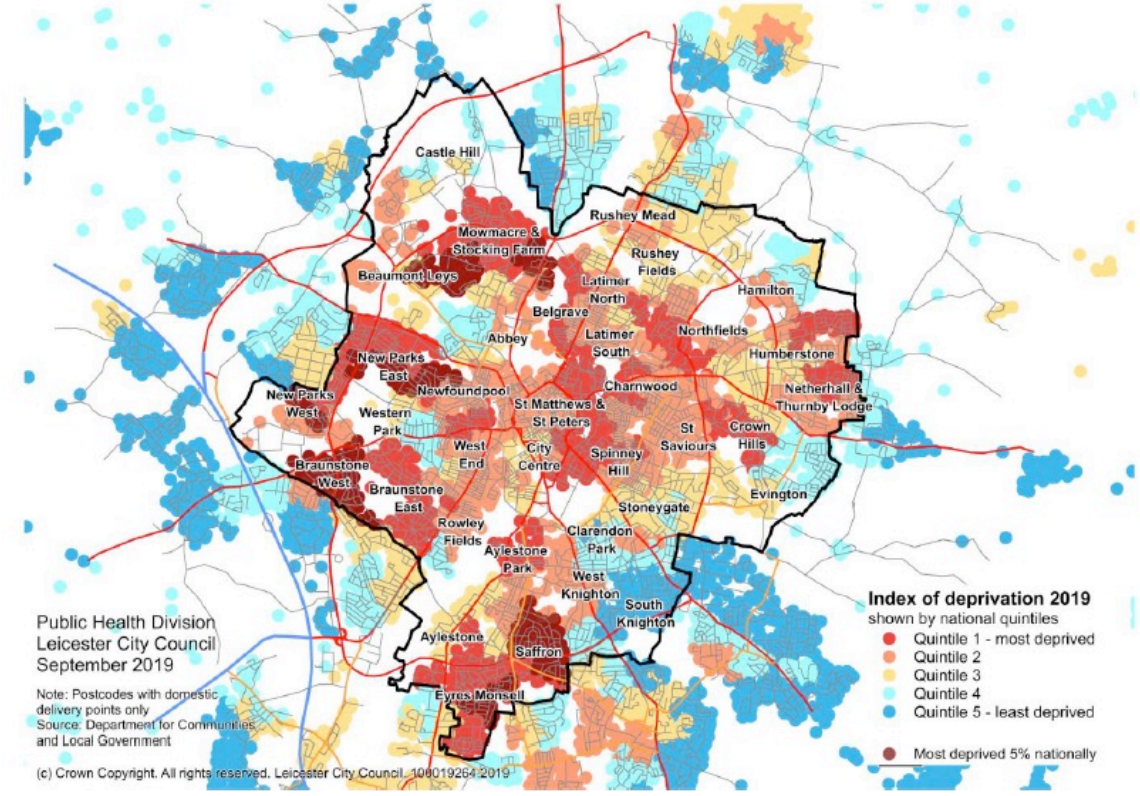
3.8%, Leicester's African community is a notably larger proportion of the population than that for England (1.8%).

3.4 Deprivation

Leicester has a high level of deprivation compared to England and is ranked 32nd out of 317 local authority areas in England on the 2019 national Index of Deprivation (where 1 is worst).[12]

In Leicester, 39 super output areas are in the 10% most deprived in the country. 35% of Leicester's population live in the most deprived in the country. 35% of Leicester's population live in the most deprived 20% of areas in England and a further 37% live in the 20-40% most deprived areas. Only 2% of the Leicester population live in the 20% least deprived areas (see Figure 2).

Figure 2: Index of Multiple Deprivation in Leicester, by national quintiles.



Source: Index of Deprivation, 2019

Furthermore, Leicester has the most deprived areas in the country for income (St Matthews) and education (Braunstone). Other areas of significant deprivation include Beaumont Leys, New Parks, St. Peters, St Marks, Mowmacre Hill and Stockling Farm.

3.5 Education

There is a well-established relationship between good academic attainment and good health and wellbeing among children. Nationally, children from low income backgrounds who go to school in areas of high deprivation do worse at school than their less deprived peers.[13] [14]

[12] https://www.leicester.gov.uk/media/186489/living-in-leicester-adults-jsna-2020.pdf

[13] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/379157/Unseen_20children_20-_20access_20and_20achievement_2020_20years_20on.pdf

Leicester records the educational attainment below the UK average with 28% of Leicester's residents having no qualifications against a figure of 22% for Great Britain. Leicester's low average attainment is likely attributable to high levels of deprivation. The percentage of people in Leicester with higher education qualifications is lower than in Great Britain. However, there is some evidence that this gap is reducing. Spatially, the areas with lowest educational attainment are the outer estates to the west of the city and the inner-city areas.

There is a wide range of early years care providers, schools, post-16 schools and sixth form colleges, along with further and higher educational settings within Leicester. For the academic year 2017/18, Leicester's average Key Stage 4 Attainment 8 score was 42.8, which is significantly lower than England (46.7). Leicester's low average attainment is likely attributable to high levels of deprivation.

The city's two universities, University of Leicester and De Montfort University, are highly acclaimed nationally and internationally and have a combined total of 43,100 student registered in the 2017/18 academic year. Also in Leicestershire there is Loughborough University.[15]

3.6 Local Economy Overview

Leicester & Leicestershire has huge potential for growth. Located at the very heart of the UK, with a population of over 1 million, a thriving and vibrant city, distinctive and characterful market towns, three universities and an international airport, our economy contributes some £24.5billion in GVA to the UK economy.[16]

3.7 Economic Productivity

The local economy is characterised by a very strong and diverse small business community. It has a larger manufacturing sector than the national average. The city has a high proportion of people employed in the public sector, which is understandable as the city is the natural focus in the sub region for education, health and local government.

There is growing confidence and strength of the city economy which is well evidenced through major inward investment and a significant number of new jobs including IBM, Hastings Insurance and Mattioli Woods, together with other new office-based businesses such as PPL PRS and Octopus Energy. In addition, the City Council developments. Dock, LCB Depot, Friars Mill, Food Park and Makers Yard have provided much needed new workspaces for small businesses. Just outside of the city administrative boundary, Fosse Park to the South West of the City continues to be one of the largest and best performing out of town retail parks in the country. A recently approved expansion is now under construction. Major office based business parks have been developed in this area in recent years due to its location on the M1.

The local economy is diverse, and the area is not overly dependent on any one sector or large employer. Tourism is also a growing area. In 2018 there were over 11.5 million visitors and over the last ten years the value of tourism has grown by 48% to £650m. The confidence in future growth is shared by the private sector and evidenced by the investment in new city hotels and tourism attractions.[17]

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[14] Factors associated with achievement: key stage 4 (publishing.service.gov.uk)

[15] https://consultations.leicester.gov.uk/sec/draft-local-plan/supporting_documents/Draft%20Local%20Plan.pdf

[16] https://llep.org.uk/app/uploads/2020/11/Local-Industrial-Strategy-Economic-Review-June-2019.pdf

[17] https://www.leicester.gov.uk/media/180622/tourism-action-plan-2020-2025.pdf

The economy is generally low waged[18] with a mismatch of skills and labour. Generally, higher skilled occupations tend to pay higher wages, which can help to improve the economic prosperity of workers in the long run. However, in the LLEP area, just 34.3 percent of Leicester's residents work across these occupations. Partly as a reflection of lower levels of productivity, residents of the LLEP typically earned less than those in both the wider East Midlands and across the UK. Looking at patterns within the LLEP area, Leicester is its only local authority area with resident earnings (£418 per week) below that of the workforce (£458).[19]

3.8 City Centre Economy

There has been substantial and continued investment in the main Highcross shopping centre from its owners Hammersons which has helped the retail sector to be remarkably resilient. Whilst retail is in decline nationally due to on-line offerings, Leicester city centre has recorded its lowest retail vacancy rate in April 2019 for 10 years down 6% to 12.2%. This is partly attributed to the retention or remodelling of large high street store units following closures.

However, the availability of good office space fallen by half to an all time low. We now have an acute shortage of good space within the city centre. The imbalance of supply and demand is starting to be evidenced through vacancy rates which are around 20% lower than the national average and rental inflation around 20% higher. The area immediately around the railway station is a major attractor for office occupiers and delivering more space here is a strategic priority for the Council and LLEP. More office space is important, both in its own right and because office worker incomes are an increasingly important driver of demand for City Centre shops and services and city centre living.

3.9 Economic Activity

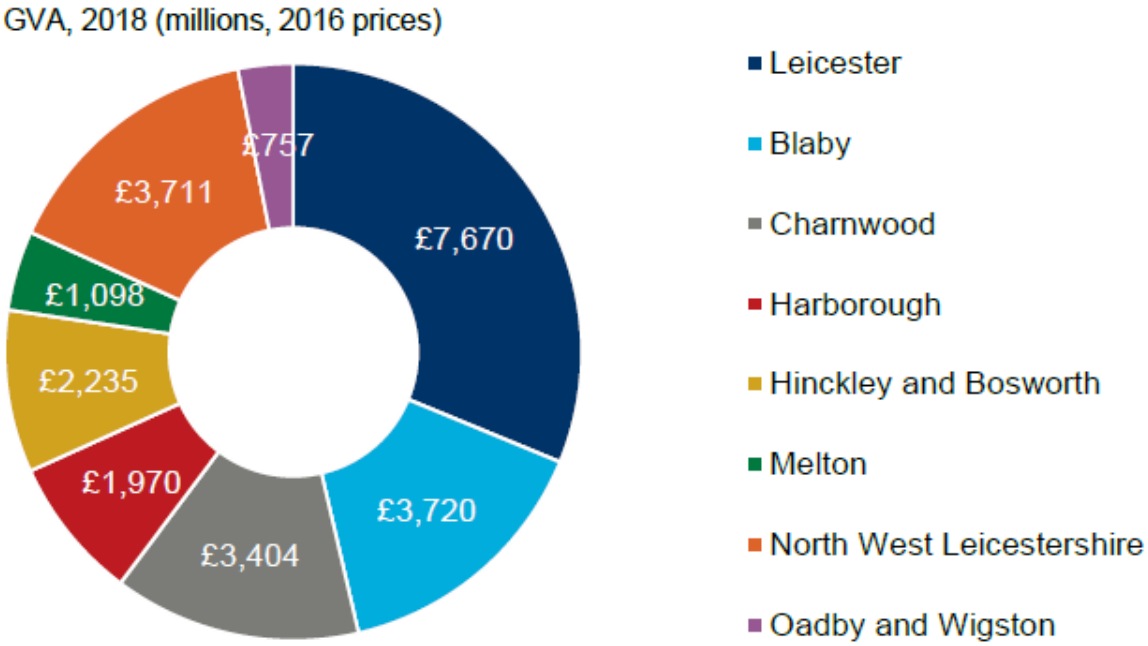
Leicester generates the largest share of economic activity across the LLEP, equally almost £7.7 billion, or a third of the total (see figure 3).[20]

[18] https://public.tableau.com/profile/r.i.team.leicestershire.county.council#!/vizhome/AnnualSurveyofHoursEarningsASHE/HeadlineData

[19] https://llep.org.uk/app/uploads/2020/11/Local-Industrial-Strategy-Economic-Review-June-2019.pdf

[20] https://llep.org.uk/app/uploads/2020/11/Local-Industrial-Strategy-Economic-Review-June-2019.pdf

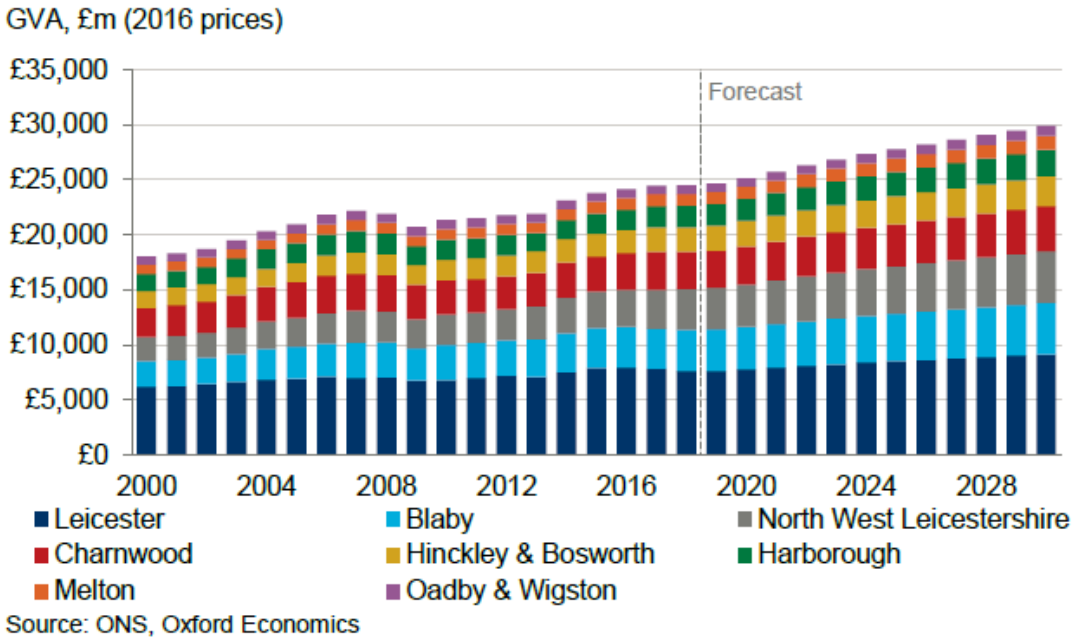
Figure 3:



Source: Oxford Economics

Leicester is forecast to grow at 1.5% per year (in GVA growth) – below both the LLEP wide average (1.7%) and the East Midlands as a whole (1.6%). However, owing to its relative size, the city will still capture over a quarter of the additional GVA generated by the LLEP area (£1.5 billion in 2016 prices), the largest share of any local authority area.

Figure 4: GVA growth within the LLEP 2008 to 2030



Source: ONS, Oxford Economics

3.10 Employment Activity

In 2018, employment across the LLEP totalled 538,100 workplace jobs. Leicester was the largest single employer, supporting 178,500 jobs (a third of the LLEP total). Charnwood is

the next largest employer (76,000 jobs) followed by North West Leicestershire (70,900 jobs) and Blaby (67,700 jobs)

Across the LLEP local authorities Leicester has the highest working age share of population, with 66.5 percent in 2018, seven percentage points higher than the lowest, Harborough, on 59.5 percent of resident population. This is forecast to fall across all local authorities by 2030. Leicester will continue to have the highest working age share but will fall 2.4 percentage points (to 64 percent). Despite a fall in share, the absolute level of working age population is forecast to increase in five of the eight local authorities (Leicester has the highest at 6.6%).

One way of assessing unemployment is by the claimant count. In January 2019. There were 5615 people of working age in Leicester claiming out of work benefits. This equates to 2.4% of the working age (16-64) population for Leicester, claiming out of work benefits, compared to 2% in the East Midlands and 2.4% in the UK.

In 2019, the estimated number of 16-17year olds not in education, employment or training (NEET) or whose activity Leicester City Council was not aware of was 510 (6%). This is higher than the England overall (5.5%) but has declined in recent years, due in part to higher participation in education among 16-17-year olds.

3.11 Commuting

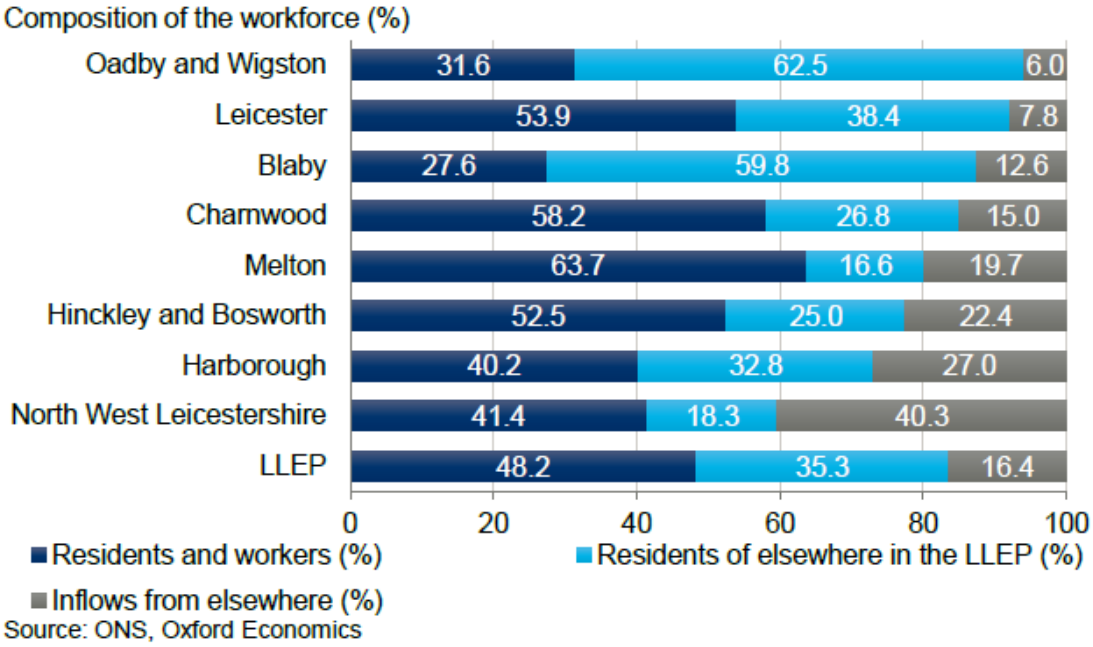
Analysis of data provided by the Census indicates the extent to which workers live either locally (i.e. in the same local authority area), in other local authority areas in the LLEP area or commute in from elsewhere. In 2011, 83 percent of the workforce of the LLEP also resided in the LLEP area. Oadby & Wigston (94 percent) and Leicester (92.2 percent) drew the largest share of workers from the LLEP area. 65.5% of residents in Leicester work in Leicester.

Staff are most likely to travel to work by private car (by far) (88%). As a percentage of the total workforce, 70% use a motor vehicle to travel to work, with a further 6% using a work-owned van or car to travel from their home to an off-site location. (These are employers' estimates and as such are subject to a measure of unreliability.) The survey responses suggest that 7% of the workforce uses public transport and this drops to just 1% in rural locations. Use of public transport may be under-stated but the difference between urban and rural locations in this respect is strongly indicated. [21]

[21] Leicester and Leicestershire Economic Partnership Business Survey 2017 Final Report (link not available).

Leicester has 53.9% of residents and workers and 38.4% of residents elsewhere in the LLEP area (see Figure 5):

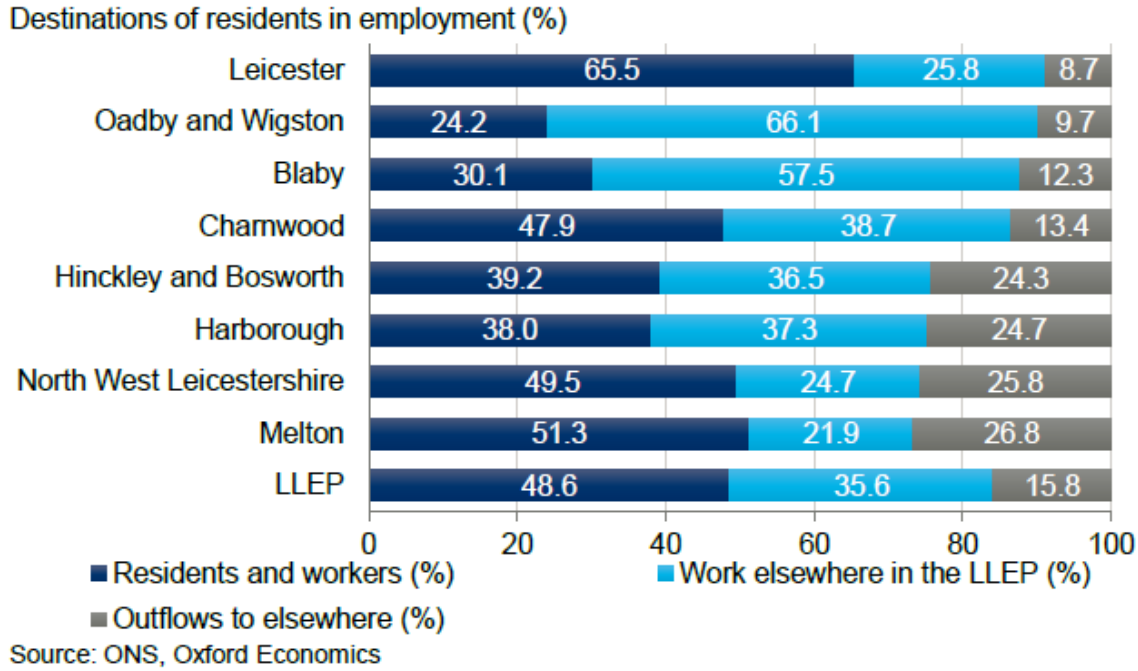
Figure 5: Travel to work patterns of the workforce, LLEP local authority areas, 2011.



Source: ONS, Oxford Economics

A similar pattern is observed when considering movements in the opposite direction: the workplace of those who reside in the LLEP area. Both Leicester and Oadby and Wigston retain over 90 per cent of residents within the LLEP area.

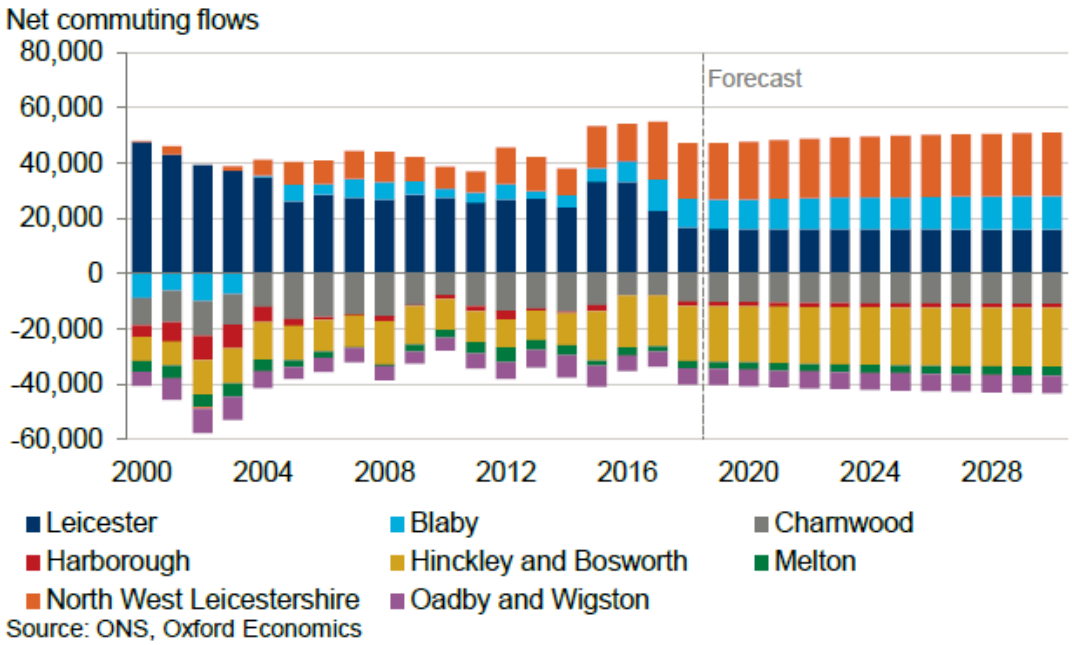
Figure 6: Travel to work patterns of residents, LLEP local authority areas, 2011



Source: ONS, Oxford Economics

Leicester sees a large inflow of commuters – more workforce jobs than residents in employment. However more recently it has been reported that levels of net inflows have fallen from 27,500 in 2011 to 16,800 in 2018 due to resident employment outstripping workforce creation. It is forecast that the current net commuting levels into Leicester remain largely unchanged in the future, as resident employment is due to increase in line with the city's workforce. [22]

Figure 7 Net Commuting Flows (LLEP Local Authority Areas) 2000 to 2030.



The concentration of trips being made in the traditional morning and evening peak periods (along with trips to/from school), and the fact that most journeys are made by car, makes them a major cause of congestion. Leicester has a workday population of 641,000[23]. Nearly half of the workforce commutes into Leicester daily, with over 30,000 travelling into the city centre in peak hours[24]. Many people who work in Leicester live outside the city's administrative boundary but may still only commute a relatively short distance, for example from Birstall to Hamilton Industrial Estate with larger numbers travelling from Blaby and Charnwood. Even though it can take 50 minutes to drive a journey that would take 30 minutes with no congestion[25].

Local and regional transport infrastructure is critical to maintaining and improving productivity levels within the LLEP. With a heavy reliance on motor vehicles the road network is especially critical to economic productivity. Congestion at peak times in Leicester may be a contributing factor to lower productivity.[26]

[22] Local Industrial Strategy Economic Review (llep.org.uk)

[23] https://www.leicester.gov.uk/media/xkhfuzsk/transforming-cities-fund-strategic-outline-business-case-2019.pdf

[24] https://www.leicester.gov.uk/media/xkhfuzsk/transforming-cities-fund-strategic-outline-business-case-2019.pdf

[25] Internal Leicester City Council data

[26] Local Industrial Strategy Economic Review (llep.org.uk)

The LLEP undertook a business survey in 2017 asking what local transport network improvements are likely to have the most benefits (see figure 8).

Figure 8: Benefits of local transport measures[27]

	LLEP survey 2017	LLEP survey 2014	Leicester	Leicestershire
% citing significant benefits of...				
Reducing traffic congestion	28	37	36	24
More access to car parking	25	31	38	19
Improving access for employees travelling by car	20	22	29	15
Improving access for customers travelling by car	20	26	31	14
Improving access for suppliers	16	17	25	12
Improving access for customers travelling by sustainable modes (walking, cycling, bus)	15	18	31	14
Improving access for employees travelling by sustainable modes (walking, cycling, bus)	14	17	19	12
Unweighted sample bases	*1,021*	*1027*	*300*	*721*

In terms of local transport network improvements likely to have the most benefit to businesses, reducing traffic congestion ranks highest (28% citing as a significant benefit), followed by more access to car parking (25%).

3.12 Health and Wellbeing

3.13 Life Expectancy

Life expectancy in Leicester is lower than the England average and although it has continued to improve over the past decade it has shown a slower improvement than England overall. The average man in Leicester can expect to live to 77 years less and a woman 81.9 years (nationally it is 79.6 for men and 83.1 for women). This gap is even wider for people in deprived parts of the city.[28]

There is a persistent gap in health between Leicester and England overall and the health gap between the more deprived and the more affluent communities within Leicester has remained unequal. New and existing communities need the appropriate health and community infrastructure to support their needs and wellbeing. This will be an important issue for the new Local Plan. Environmental issues such as air quality, the provision of open spaces and leisure opportunities and access to education and employment can all affect health and wellbeing.

Although life expectancy is increasing, many do not experience long and healthy lives. Healthy life expectancy in Leicester is around 60 years for men and 59 years for women in

[27] Leicester and Leicestershire Economic Partnership Business Survey 2017 Final Report (link not available).

[28] https://www.leicester.gov.uk/media/186489/living-in-leicester-adults-jsna-2020.pdf

2015-17. This means men average 17 years and women and have 22 years of their overall life expectancy where it is not in good health.

3.14 Physical Activity

Participating in regular physical activity has many benefits in keeping healthy and preventing long term conditions such as stroke, obesity, cancer, diabetes and mental health. According to the Leicester Health and Wellbeing Survey 2018, 62% of men and 56% of women complete the recommended 150 minutes of physical activity per week (two in five do less than the recommended 150 minutes of exercise a week[29]). A third (33%) of Leicester residents are physically inactive compared to the UK average of 26%[30]. High levels of inactivity (less than 150 minutes per week) are more common in older age groups and Black ethnic groups. Regular cycling to work is associated with a 45% lower risk of developing cancer, and a 46% risk of lower risk of developing heart disease compared to commuting by car or public transport[31].

3.15 Obesity

In terms of health, levels of obesity are high in the city and physical activity levels are comparatively low. Obesity is associated with a range of health problems including type 2 diabetes, cardiovascular disease and cancer. The Leicester Health and Wellbeing Survey 2018 reports that just under half (46%) of adults have healthy weight, and half are overweight or obese. The Survey reports high level of overweight / obesity in 45 to 64 year olds.

Heart disease and respiratory problems in the city and deaths attributable to air quality present an ongoing challenge.

One of the five themes of the Leicester Joint Health and Wellbeing Strategy and Action Plan 2019-2024[32] is 'Healthy Places', with the ambition 'To make Leicester the healthiest possible environment in which to live and work'. There are four objectives attached to this ambition, all of which are supported in this plan:

- Influence the environment to make healthier choices more accessible.
- Ensure decent homes are within the reach of all citizens;
- Improve air quality; and
- Develop and encourage healthy neighbourhoods and a sense of community. The Strategy and Action Plan emphasises that the local areas in which people live, work and play can support improvements in physical and mental health and wellbeing issues described, by affecting the degree to which people are able to access healthy lifestyles and enjoy happy, productive and satisfying lives.

Healthy, functional design also supports and delivers accessible, healthy and sustainable food choices and food growing opportunities; greater social cohesion and community support systems, with residents both feeling and being safer; positive work and educational opportunities, particularly through allocation of land for employment in areas of socioeconomic deprivation and low employment; greater opportunities for incidental physical activity and other life-enhancing leisure activities.

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[29] https://www.leicester.gov.uk/media/185984/joint-health-and-wellbeing-strategy-2019-2024.pdf

[30] https://www.leicester.gov.uk/media/xkhfuzsk/transforming-cities-fund-strategic-outline-business-case-2019.pdf

[31] Association between active commuting and incident cardiovascular disease, cancer, and mortality: prospective cohort study | The BMJ

[32] https://www.leicester.gov.uk/media/185984/joint-health-and-wellbeing-strategy-2019-2024.pdf

3.16 Mental Health & Wellbeing

Poor mental health is the most common condition affecting people in the UK. According to the Leicester Health and Wellbeing Survey 2018, 17% of Leicester's 16+ population report a poor mental health and wellbeing score. The unemployed, long term sick / disabled and social renters are more likely to report poor mental health. There is a link between those who report poor mental health and wellbeing and those who are socially isolated.

The Leicester Health and Wellbeing Survey 2018 found that 83% of residents were satisfied with their local area as a place to live. Residents in the North-west of the city were slightly less likely to be satisfied with their local area (76%). 77% of people with long-term limiting conditions and 73% of those who rate their health as bad or very bad were also dissatisfied with their local area. These groups were also more likely to feel safe in their local area only rarely or some of the time, suggesting a link between health and an ability to feel safe and happy in a neighbourhood.[33]

3.17 Disability

In 2011, over a quarter (32, 447) of city households included a person with a long-term health problem or disability that limits the person's day-to-day activities, and has lasted, or is expected to last, at least 12 months. This includes problems that are related to old age. A quarter of Leicester households in which one person has a long term health problem or disability (7,909) also include dependent children. As expected, the incidence of disability in the City is highest in areas where the population is older (Thurncourt) and lower where the population is younger (for example the city centre).

According to Leicester's 2018 Health and Wellbeing Survey almost three in ten residents (28%) have a long-standing illness or disability. Of these, two thirds (66%) say this limits their daily activities in some way.

3.18 Crime and Safety

Crime deprivation measures the likelihood of being a victim of crime either to person or belongings in a given local area. Like overall deprivation this is most apparent in urban areas. 25.5% of LSOAs in Leicester fall in the most deprived decile compared to 10% in Melton and 7.1% in Charnwood.

3.19 What this means for LTP4

- Leicester will have an increased number of residents and this will bring further demand for travel, particularly with more pressure on people's mobility and the operation of the highway network.
- Leicester has the highest inflow of workforce residents in the LLEP area with a large amount of car based commuting. This provides an opportunity to convert private vehicle trips to sustainable modes of transport, particularly with plans to increase office space around the railway station. Furthermore the LTP4 will need to explore travel demand management measures to help manage the high volumes of workers accessing employment. This will also help with climate change targets and reducing air quality levels,

- As the economy is generally low waged, the LTP should seek to provide schemes that are accessible and affordable, particularly to deprived areas of Leicester to key employment and service destinations,

[33] https://www.leicester.gov.uk/media/185575/leicester-health-and-wellbeing-survey-2018.pdf

- The LTP should look at developing schemes to encourage an increase participation in active travel, even at an early age. This will help to encourage healthier lifestyles.

4. Transport and Travel

This section reviews past and existing transport and travel patterns in Leicester.

4.1 Introduction: Leicester's Transport System

Leicester has excellent road access to the rest of region and the UK via the M1 and M69 motorways, both parts of the UK's strategic road network.

The Midland Mainline railway passes through the city centre north to south and provides an excellent service to London, Loughborough, Nottingham and Derby. With the opening of the channel tunnel rail link to St. Pancras, Leicester has direct access to the European high speed rail network. There are also rail lines west to Birmingham and east to Peterborough and Stansted Airport. East Midlands Airport is located in the north west of Leicestershire, accessed via the M1 and is the largest UK freight airport for dedicated freight aircraft.

Leicester has a very tight and compact urban road system. There is an inner ring road (mainly dual carriageway) and an outer ring road (mainly single carriageway) which is incomplete in the south east of the city. Physical barriers such as rivers and at grade railways exist with limited opportunities to cross (via bridges or underpasses) in some parts of the city, This has influenced the development of the road network and impacts on capacity and performance. The urban network generally has frequent junctions and accesses, even on major routes. Much of the dual carriageway in Leicester makes up the city's inner ring road and radial approaches to it. These have closely spaced busy junctions which cause slow traffic speeds. These speeds are low compared with other English urban areas, a consequence, in part., of Leicester's very tight and compact urban road system. National cycle routes cross the city and it is on the national canal network.

4.2 Congestion

There is congestion on roads during peak hours and this is set to become worse as the city grows:

- Average speeds on Leicester local A roads (main radial and orbital routes) have declined by 0.6mph since 2015. This is reflected across the country with the average for England also down by 0.6mph. Average speeds for England as a whole (24.9mph) are higher than urban areas as they include more higher speed rural roads.
- The higher speeds in cities like Nottingham & Coventry are believed to be due, at least in part, to these cities having A roads and large volumes of higher-speed traffic that are just "passing through" their boundaries, such as the A52/A60 in Nottingham, and the A45 and M6 in Coventry. In Leicester the through traffic using the M1 & A46 are just outside its boundary.
- Congestion costs the UK nearly £8 billion in 2018*. On average, road users lost 178 hours in congestion, costing £1,137

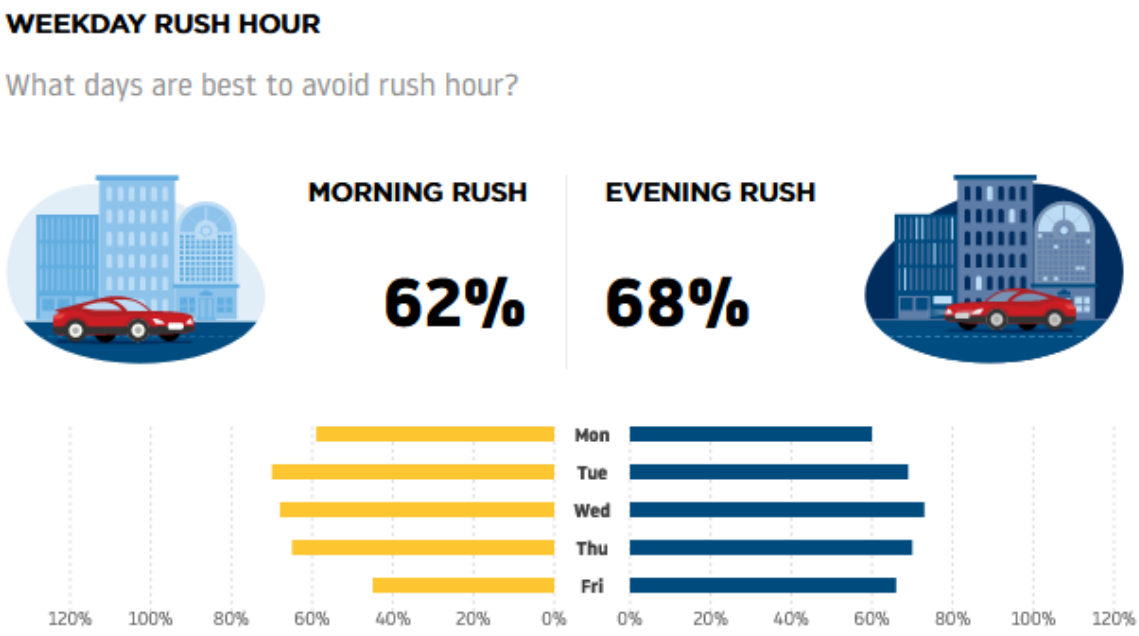
TomTom is a well-known SatNav producer and provider, and their index statistics are calculated from anonymised GPS data collected via navigation devices, in-dash systems and smartphones.

- Leicester was placed 11th in the top 25 Most Congested UK cities in 2019. It was 9th in 2018.
- Congestion level percentage represents the amount of extra travel time across the whole year compared to free flow conditions.
- Edinburgh is the highest ranked UK city with 41% congestion (up 1% on 2018).

* Inrix

- London has 38% with Brighton & Hove, Bournemouth, Hull, Belfast, Southampton, Bristol, Manchester & Reading appearing before Leicester. Southampton & Reading were not above Leicester in 2018.
- Leicester comes 98th in the World Ranking (the same ranking as 2018) with congestion at 32%, up 2% on 2018, which was 1% up on 2017.
- The next two UK cities are Cardiff at 125th (30%, up 2%) and Liverpool at 145th (28%, up 1%). These replace Coventry at 214th (25%, down 4%) and Nottingham at 166th (27%, down 1%) who were next below Leicester in 2018.
- Tues – Thurs 5-6pm were the most congested times of day (69-73%) followed by Tues & Weds 8-9am (65-70%).
- Saturdays were most congested 1-2pm (35%), compared with 24% on Sundays (1-2pm).
- Nottingham AM peak congestion seems to have fallen markedly, with Mon/Tues 8-9am 69% both days, 7-8am Mon 58% in 2018 now 53% & 60% and 38% respectively.
- Congestion causes delay and can have a significant impact on the local economy. The environmental impacts of stationary or slow moving traffic is felt in terms of poor air quality, leading to associated health problems.

Figure 9: Weekday Rush Hour – AM and PM peaks



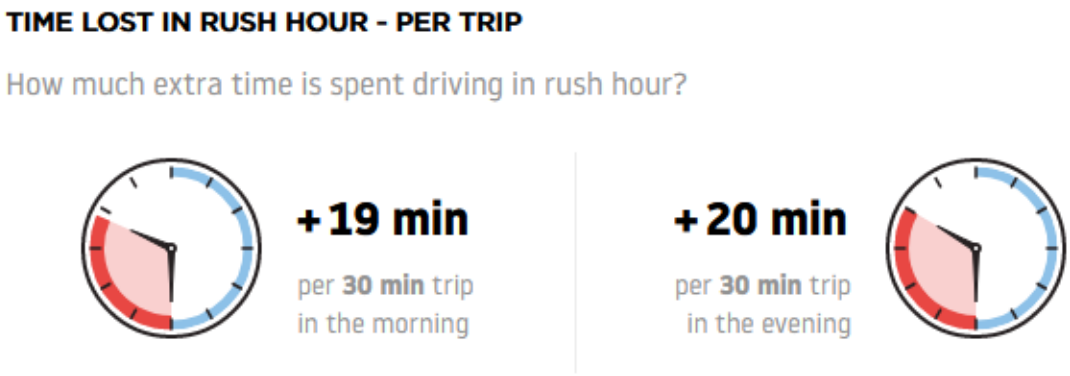


Figure 10: Time lost in rush hour – per trip

- 62% Morning Peak congestion is equivalent to an extra 19 minutes per 30m trip in the morning and 68% Evening Peak congestion is equivalent to an extra 20m per 30m trip.
- For the worst case in Leicester of an average 71% congestion between 5pm and 6pm Tues – Thurs that equates to an extra 21 minutes on a 30 minute trip.

4.2.1 Total vehicle miles travelled (DfT estimate)

- The total amount of all vehicle miles driven and total driven by cars and taxis nationally has finally returned to 2007 levels, albeit with a slight dip in 2018.
- 895 million vehicles miles (mvm) were travelled on roads in Leicester in 2018.
- This compares with 969 mvm in Nottingham, 1,088 mvm in Derby and 1,170 mvm in Coventry.
- These higher figures are believed to be due, at least in part, to these cities having A roads and large volumes of higher-speed traffic that is just “passing through” their boundaries such as the A38/A52 in Derby, the A45 and M6 in Coventry.

4.2.2 INRIX Congestion Index

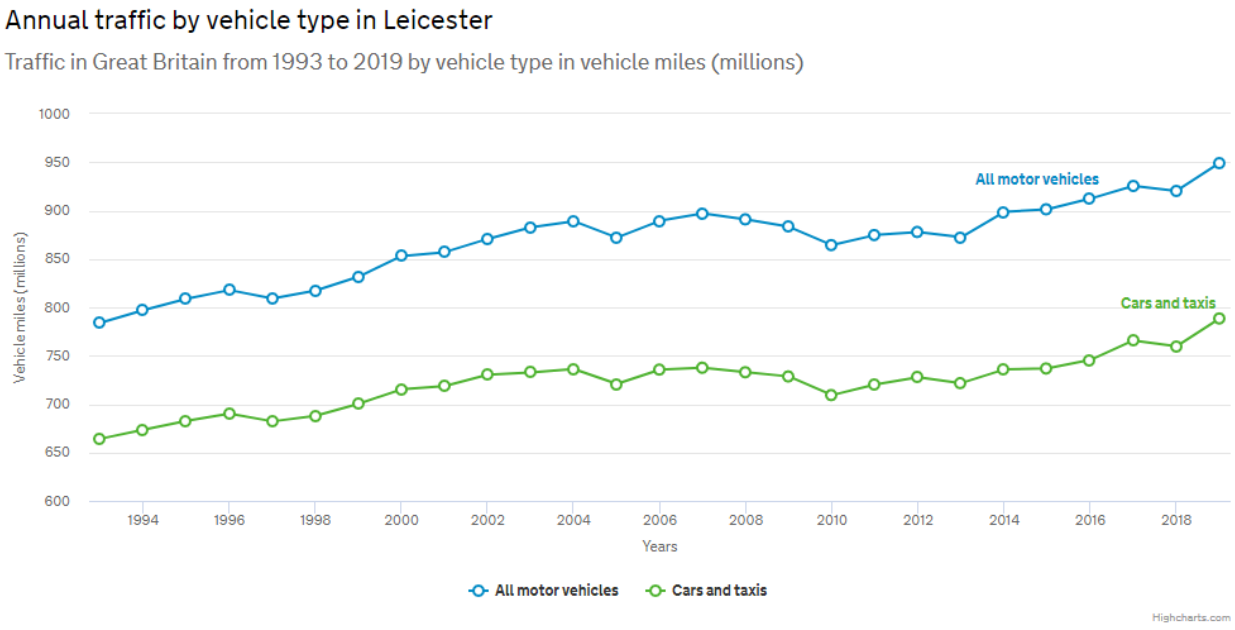
- INRIX produce a Global Traffic Scorecard analysing and ranking the impact of congestion in more than 975 cities across 43 countries, based on hours and money lost due to traffic annually, analysing 500 terabytes of data from 300 million different sources.
- INRIX use a blend of data, including satnavs and smartphones, similar to TomTom.
- In the 2019 rankings many of the same cities appear but with the inclusion of Birmingham (combined with Wolverhampton in the TomTom calculations), Cardiff, Lincoln, Aylesbury and Nottingham above Leicester, which is in 13th place in the UK
- Reading, Bournemouth and Brighton & Hove do not appear above Leicester in the INRIX Top 13.
- Leicester is ranked 92nd in the world, (it was 98th in 2018), and 6% more congested than in 2018. Nottingham shows a 17% improvement and has gone from 56th to 82nd in the world but is still above Leicester by this measure.

4.2.3 Total vehicle miles travelled (DfT estimate, TRA8901/2)

- The total amount of all vehicle miles driven in Leicester peaked in 2019 at 949 million vehicle miles (mvm) (having finally returned to 2007 levels in 2014).
- This compares with 1,050 mvm in Nottingham, 1,137 mvm in Derby and 1,354 mvm in Coventry in 2019.

- These higher figures are believed to be due, at least in part, to these cities having A roads and large volumes of higher-speed traffic that is just "passing through" their boundaries such as the A38/A52 in Derby, the A45 and M6 in Coventry.
- In 2020 Leicester's total fell to 817mvm, a return to 1998 levels.

Figure 11: Annual traffic by vehicle type in Leicester.



4.2 Traffic Growth Forecast

The LLEP's Strategic Economic Plan (2014-20) also identified that the transport network is expected to see a 20% growth in traffic over the next 15 years. This could present a substantial barrier to growth if not tackled through a range of major transport initiatives and smaller scale integrated transport interventions.

The City and County Councils have worked closely together and are continuing to do so to deliver major corridor improvements. This has been accompanied by the delivery of softer transport measures such as a Local Sustainable Transport Fund (LSTF) and the Access Fund programme. For example, the programmes aim to enable people travel to work by low carbon and active travel choices; working with communities, existing employers and employees to remove barriers to sustainable commuting.

Traffic is likely to continue to grow as a result of new development in Leicester and the Leicester Urban Area. The Leicester and Leicestershire Strategic Growth Plan (SGP) 2050 identifies a housing need of 90,500 between 2031-2050[34].

The Strategic Growth Plan identifies the following areas to focus future development:

- Leicester City, particularly the Strategic Regeneration Area;
- A46 Priority Growth Corridor to the south and east of Leicester;

[34] https://www.llstrategicgrowthplan.org.uk/wp-content/uploads/2019/01/Final-LL-SGP-December-2018-1.pdf

- Leicestershire International Gateway, including the Airport, East Midlands Gateway freight terminal and the proposed HS2 station at Toton;
- A5 Improvement Corridor; and
- Melton Mowbray centre for regeneration and growth.

A multi-modal transport model, Pan-Regional Transport Model (PRTM) can be used to predict what will happen to the road and transport network in Leicester, Leicestershire and the wider area. The emerging Local Plan will use the model to assess the impacts of travel and transport from proposed growth.

It is clear that significant new development cannot be accommodated within Leicester and Leicestershire without significant investment in infrastructure and services. The SGP's spatial strategy will enhance the role of Leicester at the heart of the county and maintain close relationships between the city, market towns and rural areas. It is recognised that given the scale of development on the fringes of Leicester, any growth would be needed to be accompanied by measures to increase capacity on the radial routes and improve public transport, cycling and walking capacity.[35]

The SGP mentions an expressway proposal for the A46 (as introduced in the Midlands Connect Strategy – latest update as of November 2020) to create an opportunity for significant development to the south and east of the city (it is estimated that the corridor could have the potential to accommodate about 38,000 new homes[36]). Improvements to railway lines and services between Coventry and Leicester and Birmingham are also proposed.

The combination of new and improved roads and railways in this area creates the opportunity for major development along the corridor extending around the southern and eastern fringes of Leicester. It is estimated that this corridor has the potential to accommodate about 38,000 new homes and additional new jobs.

However there is also evidence that shows that increasing road capacity may only be a temporary solution as more people drive more, supply generating its own demand.[37] Solutions instead depend on making alternatives to the car more attractive and giving people better choices, at the same time managing the road network to prioritise necessary traffic and these alternatives – by making journeys more reliable and safer. In addition, innovation can replace some car journeys and replace them with more sustainable options e.g., zero emission vans or drone deliveries.

The Leicester De Montfort University has developed a new concept of 'Responsible Transport', which focuses on the need for the individual to make considered decisions about transport in the light of COVID-19 and the climate emergency[38].

4.3 Congestion Overview

There is congestion on roads during peak hours and without significant investment in sustainable transport this is set to become worse as the city grows. Particular areas of concern include important sections of the outer and city centre ring roads and key junctions and sections on the radial routes which link the city centre to the suburbs.

[35] https://www.llstrategicgrowthplan.org.uk/wp-content/uploads/2019/01/Final-LL-SGP-December-2018-1.pdf

[36] https://www.llstrategicgrowthplan.org.uk/wp-content/uploads/2019/01/Final-LL-SGP-December-2018-1.pdf

[37] New roads create new traffic | Campaign For Better Transport

[38] Responsible Transport: A post-COVID agenda for transport policy and practice - ScienceDirect

Leicester is ranked as the 11th & 13th most congested UK city by TomTom and INRIX respectively (2019), while being the 9th largest city in England (in terms of population).

One thing Leicester does not have is a bypass or multiple lane (3+) A road of any length inside its boundary, which many cities do have and which could be raising their average A road speeds (especially in the DfT indicator).

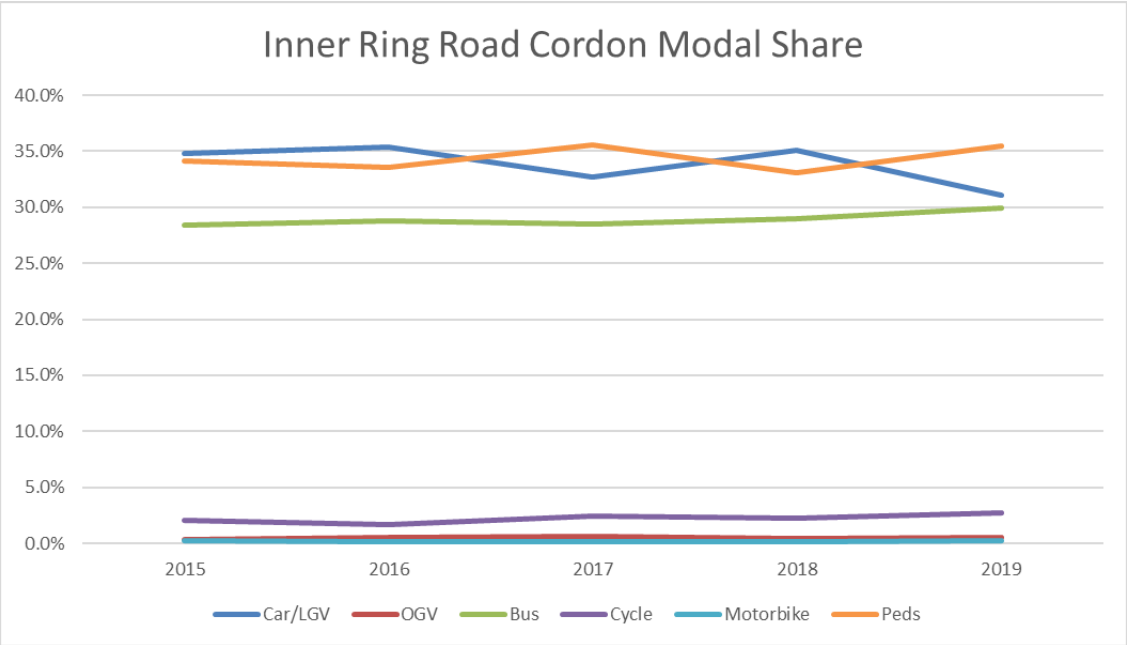
Annual traffic levels were only just returning to pre-Credit Crunch (2007) levels before the Covid-19 lockdown. Traffic volumes have not been relentlessly increasing year after year as is often assumed.

Leicester has a relatively low level of car ownership, providing both an opportunity for and a reliance on public transport and other modes of travel. Lowest income households have higher levels of non-car ownership – young people and Black Minority Ethnic group are concentrated in this quintile[39]

The modal share in Leicester differs greatly across cordons (Inner Ring Road, Central Transport Zone, Outer Ring Road). Outside of the city centre the car is very much the dominant mode for the vast majority of travellers. In a recent national survey, a third of motorists said they had become more dependent on their car over the last year and more than half said they would use their car less if public transport were better[40]

4.4 Modal Share

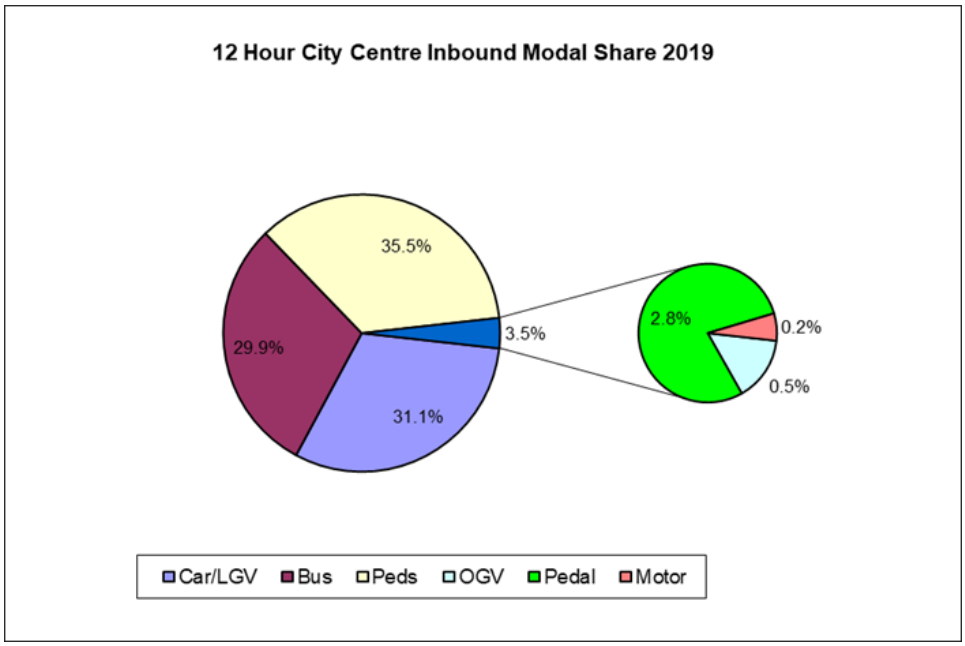
Figure 12: City centre (Inner Ring Road) Modal Share (based on annual one-day LCC surveys)



[39] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/784685/future_of_mobility_access.pdf

[40] Dependency on the car is increasing | RAC Drive

Figure 13: 12 Hour city centre inbound modal share 2019



Car/LGV modal share is down markedly in 2019, but this is not due to a drop in the number of vehicles but a significant drop in recorded occupancy rates (from a consistent 10 year average of 1.43 to 1.27 in 2019). We cannot find any obvious errors, but this may be a one-off. Using 1.43 occupancy in 2019 Car /LGV = 39,189 or 33.9%, Bus = 30.3% and Peds = 33.3%.

Table 1: Vehicle Occupancy levels – Inner Ring Road

IRR	Car/LGV	Bus	Pedestrian	OGV	Pedal Cycle	Motor Cycle	Total
2018 actual	40,662	33,489	38,285	468	2,637	227	115,678
2019 actual	34,870	33,529	39,770	595	3,106	252	112,122

Central Transport Zone (CTZ) Modal Share (based on annual one-day LCC surveys)

12 hour CTZ Inbound Modal Share 2019

(not updated – 2020 surveys cancelled due to lockdown)

Figure 14: Central Transport Zone Modal Share (a)

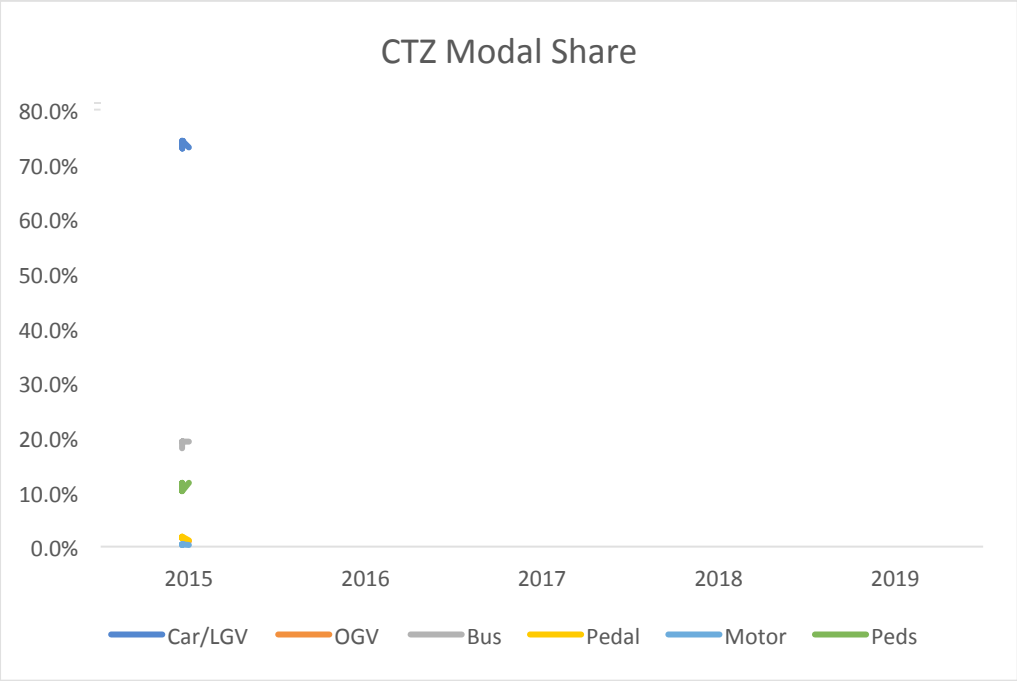


Figure 15: Central Transport Zone Modal Share (b)

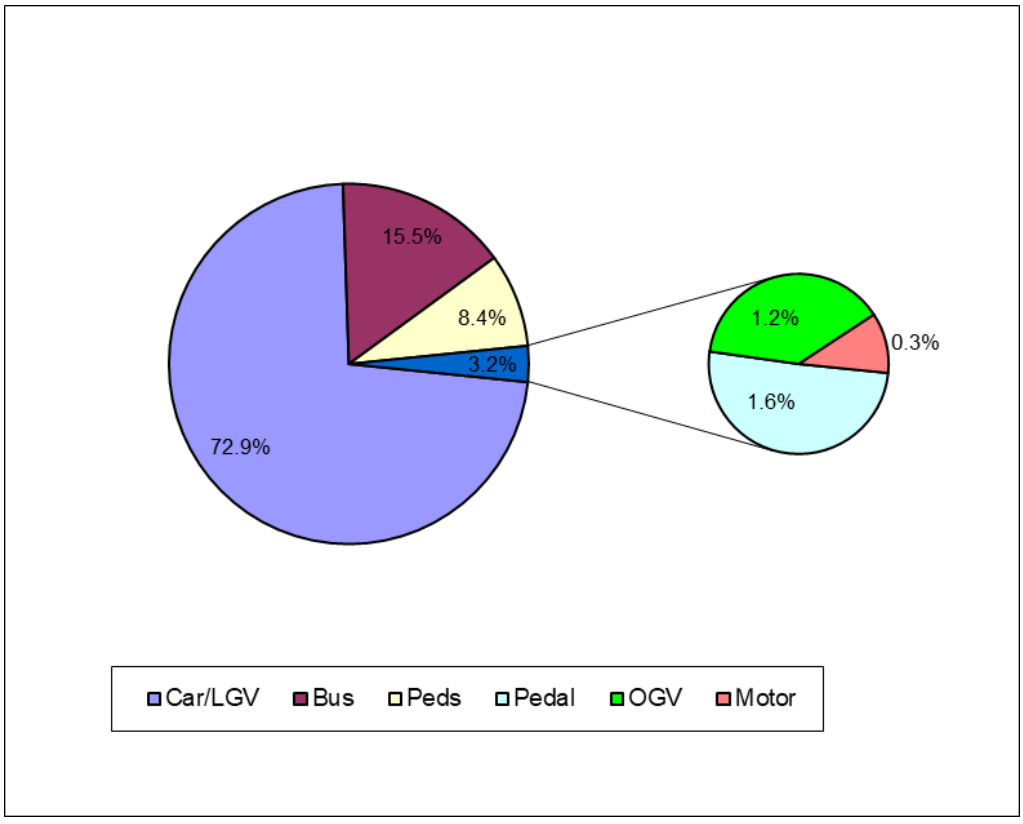


Figure 16: Leicester Strategic Cordon Surveys: Central Transport Zone sites

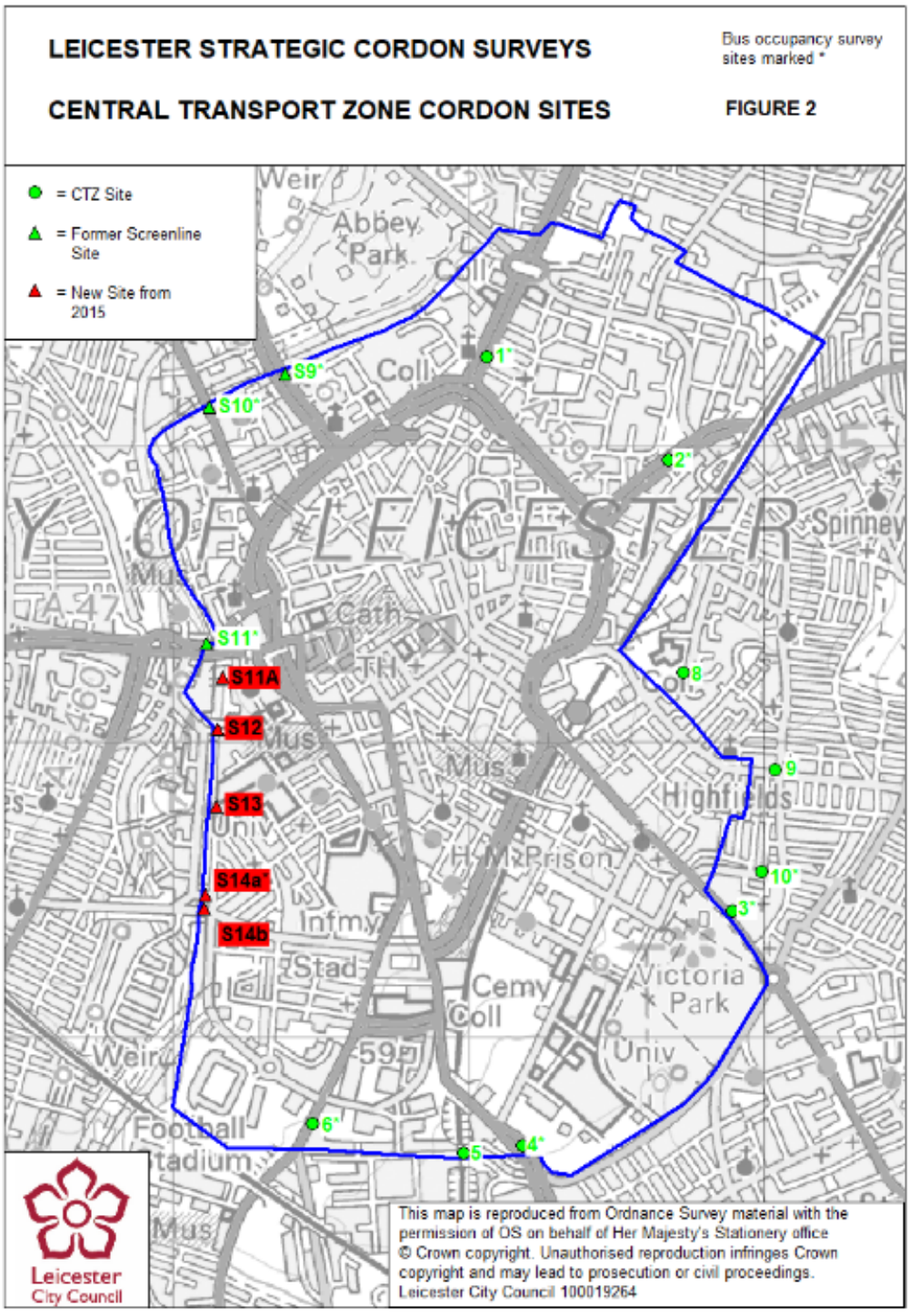


Table 2: Vehicle Occupancy Levels – Central Transport Zone

CTZ	Car/LGV	Bus	Pedestrian	OGV	Pedal Cycle	Motor Cycle	Total
2018 actual	161,858	34,418	18,692	2,760	3,621	776	222,125
2019 actual	158,728	41,974	24,356	3,846	3,884	858	233,646

Table 2: Vehicle Occupancy Levels – Central Transport Zone

With 2019 car/LGV occupancy of 1.26, lower than the usual average of 1.34 but very close to the 2019 IRR rate.

- Note that bus passenger and cyclist numbers are very similar to city centre, but modal share is much lower, due to the volume of car/LGV traffic being four times higher on the CTZ cordon.

4.4.1 Outer Ring Road (ORR) Modal Share (based on annual one-day LCC surveys)

Figure 17: 12 hour ORR Inbound Modal Share 2019 (2020 surveys cancelled due to lockdown)

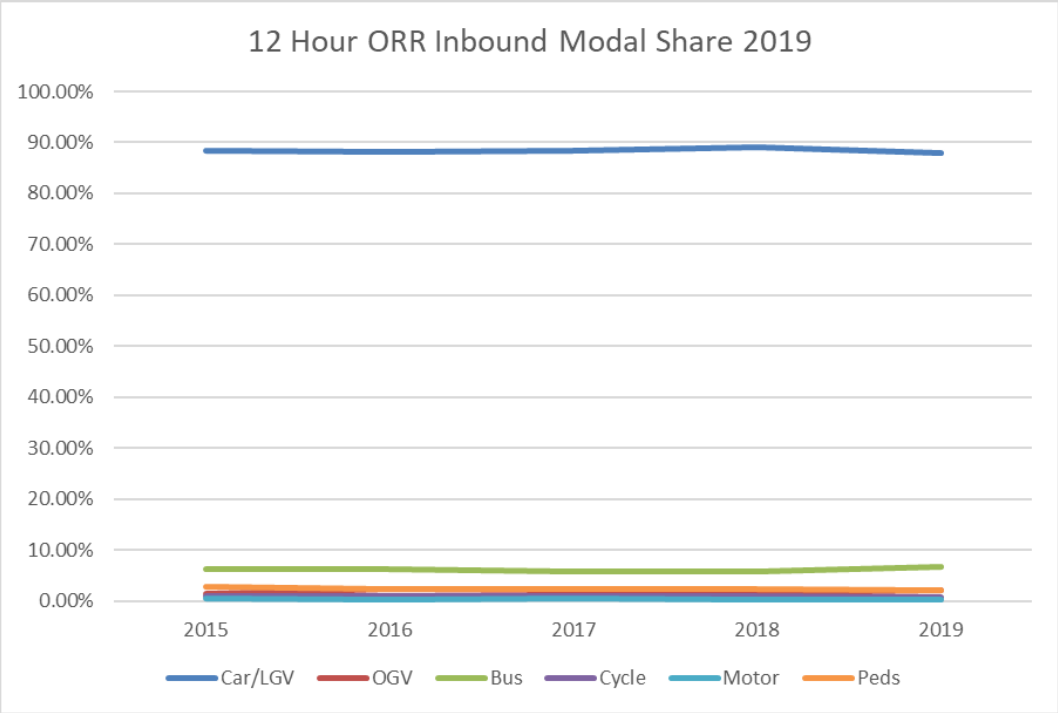


Figure 18: 12 Hour Outer Ring Road inbound modal share 2019

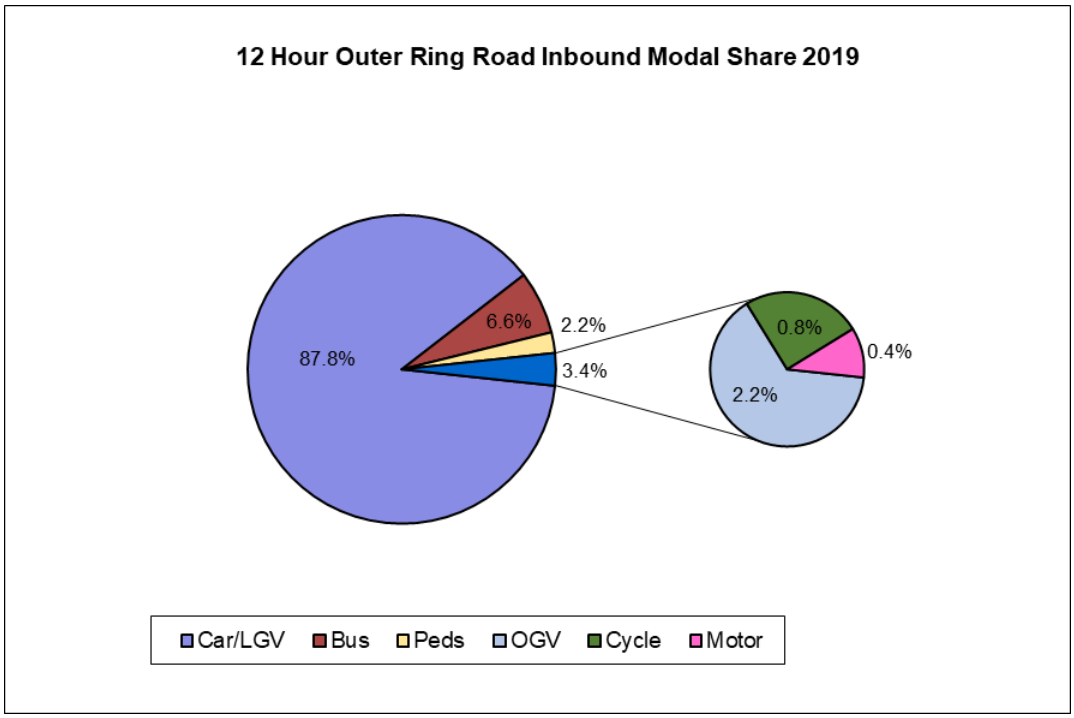


Table 3: Vehicle Occupancy Levels – Outer Ring Road

ORR	Car/LGV	Bus	Pedestrian	OGV	Pedal Cycle	Motor Cycle	Total
2018 actual	233,946	15,223	5,806	4,427	2,418	882	262,702
2019 actual	239,940	18,063	5,926	5,981	2,319	971	273,200

- 88-89% of traffic is now Cars & LGVs
- Overall traffic only around 40,000 vehicles higher than CTZ cordon, just over ¼ million total.

Within Leicester, 25% of all car journeys are under 2km, the average trip in Leicester is 5km and some 93% of Leicester's households are within 400 m of a bus stop, mostly linking to the city centre. As such, there is a significant opportunity to encourage people to walk, cycle and take the bus more often. However modal change can only be achieved through improvements in our walking, cycling and bus provisions, to deliver comprehensive networks of services and infrastructure that are attractive to potential users.

Modal shift to sustainable transport options, together with localised improvements to support resilience of the main radial and orbital routes, is therefore key to managing travel growth in the city. Carefully targeted road and junction improvements, including smarter signalling and bus prioritisation, can assist in relieving congestion hot spots, supporting bus travel and improving air quality in a locality.

4.5 Car Ownership

- Leicester ranked in the lowest 10% of districts and Local Authorities for car ownership in the 2011 census, with only 63% of households owning a car or van. The low ownership level could create an issue for accessibility to job opportunities.
- This was an increase of 2.4% on the 2001 census figure.
- This compares with only 56% in Nottingham (the fourth lowest area that's not a London borough after the Isles of Scilly, (50%), Liverpool (54%) and Manchester (55.5%).
- In Coventry the figure was 68% and 71% in Derby.
- The average for England was 74%. Source: Table KS404EW (DfT)

A low car ownership provides both an opportunity for and a reliance on public transport and other modes of travel. Lowest income households have higher levels of non-car ownership – young people and Black Minority Ethnic group are concentrated in this quintile[41]

4.6 Demand Management Measures for Car Use

This chapter has highlighted that congestion is worsening and it represents a critical challenge to LTP delivery. The impacts include increased business cost; falling speeds and increase NOx emissions which damage health and wellbeing; delayed bus services which make public transport less attractive; poor air quality creating a less pleasant environment; and many more.

Faced with significant Climate Emergency, health and growth challenges, it is recognised that designing for continual growth in car use is not a practical or deliverable option. Therefore, the Council has been looking at ways to manage the demand for road space. This includes several measures such as:

- Fiscal measures
- Road pricing / congestion charging
- Rail capacity improvements
- Parking management
- Supporting commercial bus services
- Cycling and walking investment
- Behaviour change programmes

Workplace Parking Levy (WPL) and Road User Charging (RUC) are two options that have been considered. Both schemes have the potential to fund local mass transit improvements. WPL was introduced in Nottingham in 2012 and it charges employers with 11 or more parking spaces per space (£380 per space in 2017/18). The result of WPL is that it acts as a disincentive to car use and has raised revenue funding that is ring fenced by law to spend on transport improvements.

Nottingham City Council started charging a workplace parking levy in 2012. £75m has been invested so far, mostly in the NET tram network. Public transport use, cycling and walking have all increased and area-wide traffic has decreased. One study suggests that 8.6% of commuters currently travelling by sustainable modes switched from the car at least partly because of the workplace parking levy[42].

[41] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/784685/future_of_mobility_access.pdf

[42] The impact of the Nottingham Workplace Parking Levy on travel to work mode share (lboro.ac.uk)

The Council commissioned De Montfort University to undertake a study [43] that provided an academic evidence-based review on relevant demand management measures and specifically the role of a price mechanism for the possible introduction of a WPL in Leicester. The study concludes that WPL could form an important transport intervention supporting the delivery of Council objectives relating to tackling congestion, improving air quality, responding to the Climate Emergency and generally improving social equity and the quality of life in the City. It would be most effective if set in a holistic set of integrated transport policies and interventions planned for the future. The report proposes a number of recommendations.

4.7 Public Transport

Located in the centre of the county, Leicester also forms the focal point of the local public transport network. Most public transport routes are focused on connecting Leicester with its satellite towns, with fewer services also providing links between the city and other market towns and rural areas across Leicestershire.

Leicester has a dense, predominantly commercially provided, urban and interurban bus network, together with three subsidised park and ride services located close to the strategic road network. Accessibility levels to both the city centre and most employment, health and education sites is generally high but congestion is a significant barrier to improving patronage. Services are limited in the evenings and weekends and orbital services are weak. Our new Haymarket Bus Station performs well but the much older St Margaret's Bus Station does not provide an effective and welcoming travel experience, nor does it function well as an integrated transport interchange (NB: A major re-build commenced in January 2021.)

Buses are the main form of public transport within the Leicester Urban Area, with around 90% of routes commercially provided. Bus accessibility varies across the city. In general, access by bus into the city centre, is better than orbital services around Leicester which are partial and infrequent. The city centre is very accessible by bus during the daytime, albeit services are delayed by peak hour congestion, but less so during evenings and on Sundays.

There are also various local bus models that serve different purposes, such as demand responsive buses that vary their routes depending on requests, buses subsidised by the Council on local routes, and buses funded by hospitals or other services that enable people to attend health and other appointments. An example of a demand-responsive transport service is being trialled for the New Lubbesthorpe development[44].

There is significant potential to continue to provide further bus priority, walking and cycling facilities. Initial evidence from our Better Bus Area funded A426 Aylestone Bus Corridor Improvement Scheme has seen passenger growth of 13%.[45] Also, nationally buses contribute to £64billion of economic output each year[46] and bus passengers contribute around 1/3 of city spending. therefore, are vital in supporting shops in city centres[47]. Transport Focus found that bus passengers now want services running more often and going to more places that are on time at their bus stop. Better value for money is still important, as are buses arriving at their destination on time[48]. In Leicester, a third of car

[43] DMU Study

[44] ArrivaClick Leicester | On-Demand Minibus Service | Arriva Bus

[45] DfT Better Bus Area Fund A426 Quality Bus Corridor, Monitoring and Evaluation Report (August 2014).

[46] https://www.cpt-uk.org/news/buses-and-economic-growth-summary/

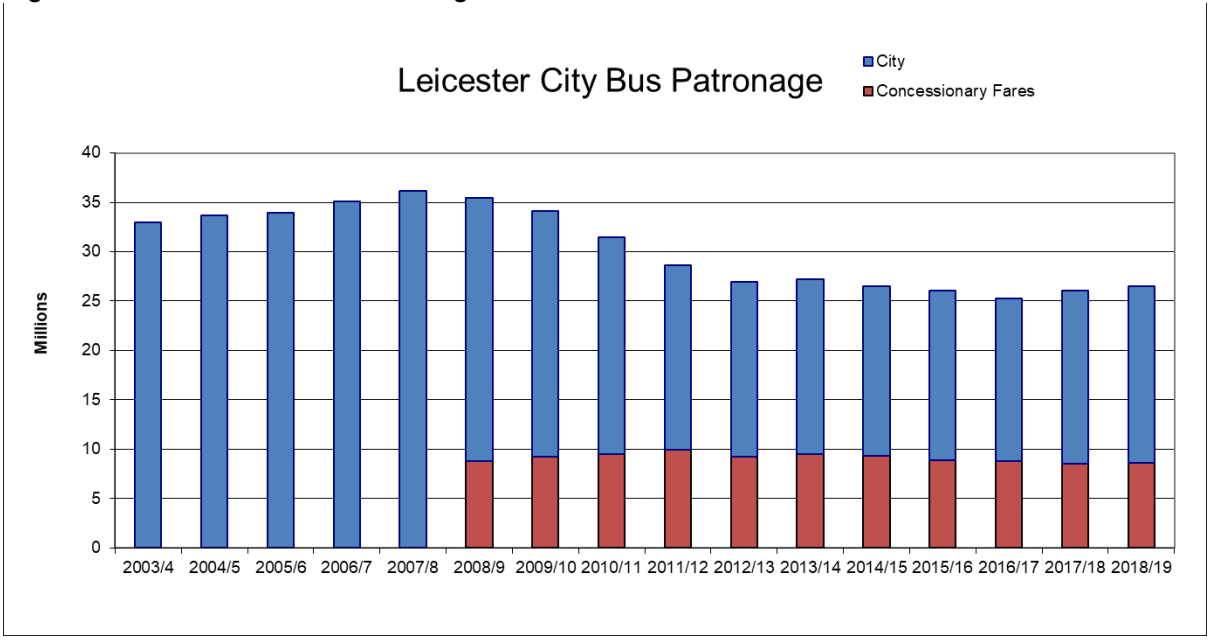
[47] A study of the value of local bus services to society | CPT (cpt-uk.org)

[48] Bus passengers' priorities for improvement - Transport Focus

commuters would be encouraged to catch the bus to work if they received discounts on tickets and over half would try to use the bus if they were offered a free 4-week bus ticket[49].

4.7.1 Bus Patronage

Figure 19: Leicester's Bus Patronage:



- The number of trips starting or ending in Leicester has declined by 9%, or 2.6m since 2011/12.
- A similar 8% decline was recorded in England as a whole (not including London) over the same period.
- Journey to work by public transport to non-central locations is significantly lower than to city centre locations (around 12% compared with 29%).

There are several possible reasons for this decline.

- As well as economic pressures bus fares have risen in real terms.
- Subsidisation of less profitable routes has declined as Local Government funding has been cut.
- Bus companies may be concentrating on their most profitable routes – mileage in the East Midlands fell 14% between 2008/09 and 2017/18 (Source: DfT BUS0206a)
- 2008 peak coincided with introduction of national concessionary scheme, the eligibility rules of which were later tightened
- The Bus Service Operators Grant (BSOG) was reduced by 20% in 2012
- Concessionary fares in 2018/19 were 8.6m or 32% of trips

[49] Leicester Business Engagement Survey (2020) Go Travel Solutions

4.7.2 Passenger Satisfaction:

4.7.2.1 Transport Focus Bus Passenger Survey Results

Transport Focus is an independent watchdog for transport users.

Almost 50,000 bus passengers a year are consulted to produce the Bus Passenger Survey.

This measures passengers' satisfaction with their local bus service for a representative sample of journeys.

Figure 20: Passenger Satisfaction Results

No. of people "Very satisfied" or "Fairly satisfied"

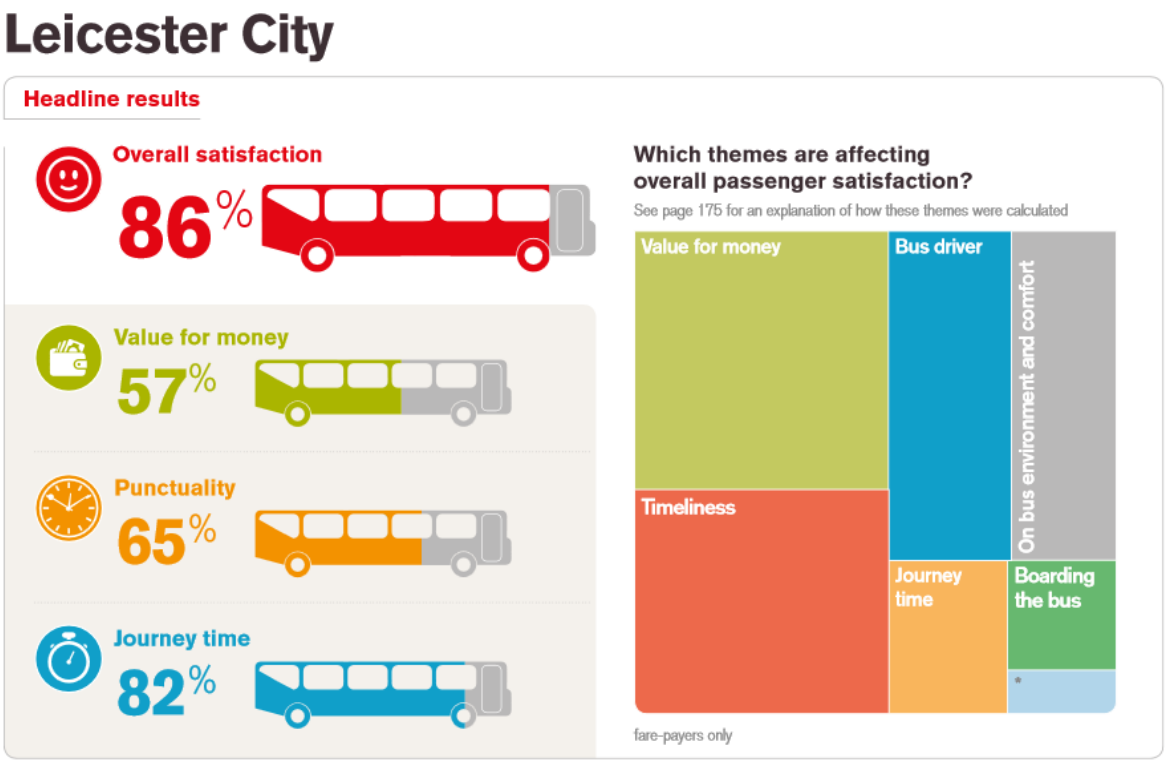
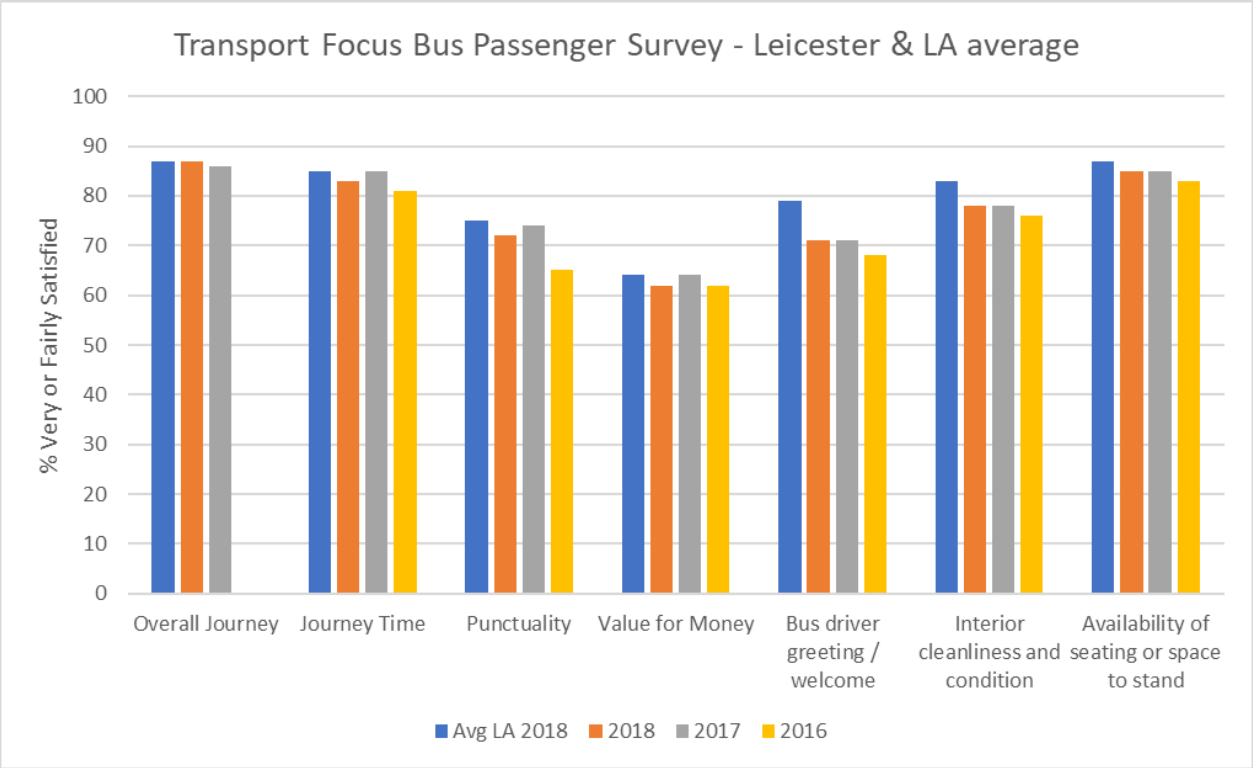


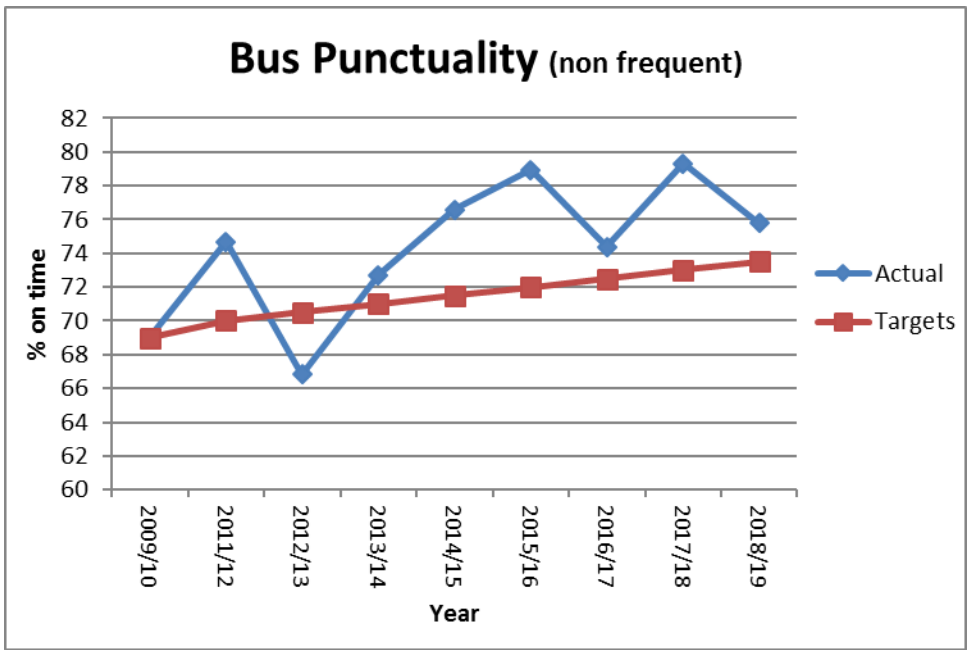
Figure 21: Transport Focus Bus Passenger Survey Results



- Leicester is close to the LA average in most cases, but always slightly lower
- Leicester is lower than the 2018 LA average in all cases, and apart from "Bus driver greeting/welcome" all indicators are lower in 2019 than in 2018.
- In many cases the 2019 score is now lower than in 2016, wiping out all gains.
- Bus Driver Greeting / Welcome is still notably lower than the LA average (73% in 2019 to an LA avg of 79% in 2018)
- In many key indicators Leicester has the lowest or 2nd lowest "Very Satisfied" score.
- Of 31 authority areas that took part in the surveys most were much larger areas (Passenger Transport Executives or PTEs, Combined authorities or County councils).
- Only Hull, Milton Keynes, Nottingham, Portsmouth and York are City Authorities like Leicester (there were only two other city authorities taking part in 2018).
- Public perception of bus punctuality is very close to our survey results (see below)

4.7.3 Bus Punctuality

Figure 22: Bus Punctuality (non-frequent definition – buses timetabled as more than 10 mins apart)

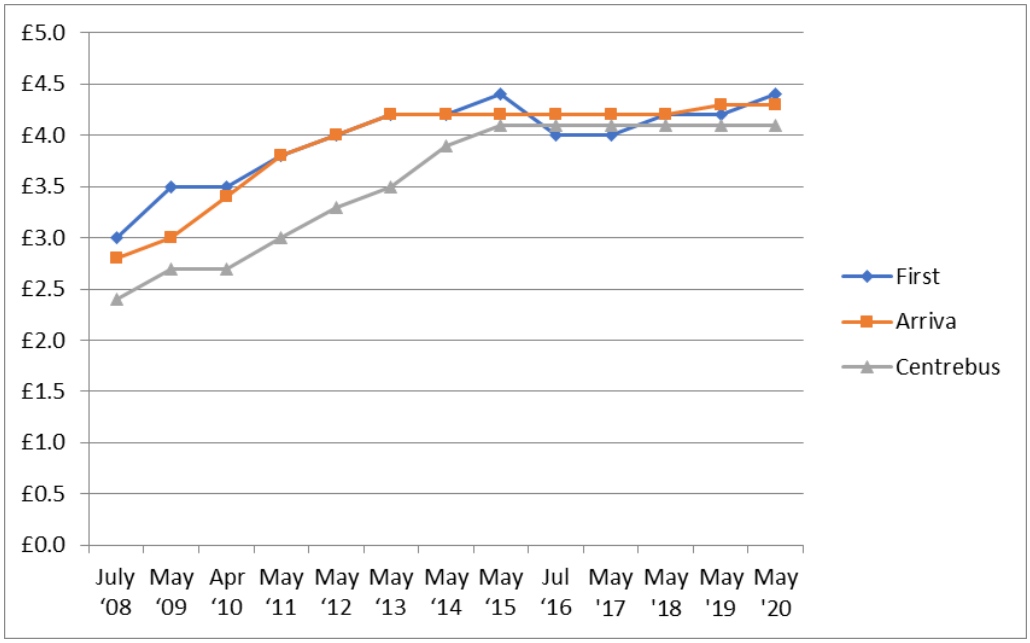


- In 2018/19 Nottingham reported 93%, compared to Leicester's 76%.
- In 2018/19 Derby posted a figure of 93%, the first reported figure in four years, from 86% in 2014/15.
- Coventry does not appear in the DfT data at all.
- Leicestershire was 65% in 2017/18 and 63% in 2018/19.
- Increasing the amount of bus priority offer greater reliability and journey time advantage over the car.

Source: DfT bus0902

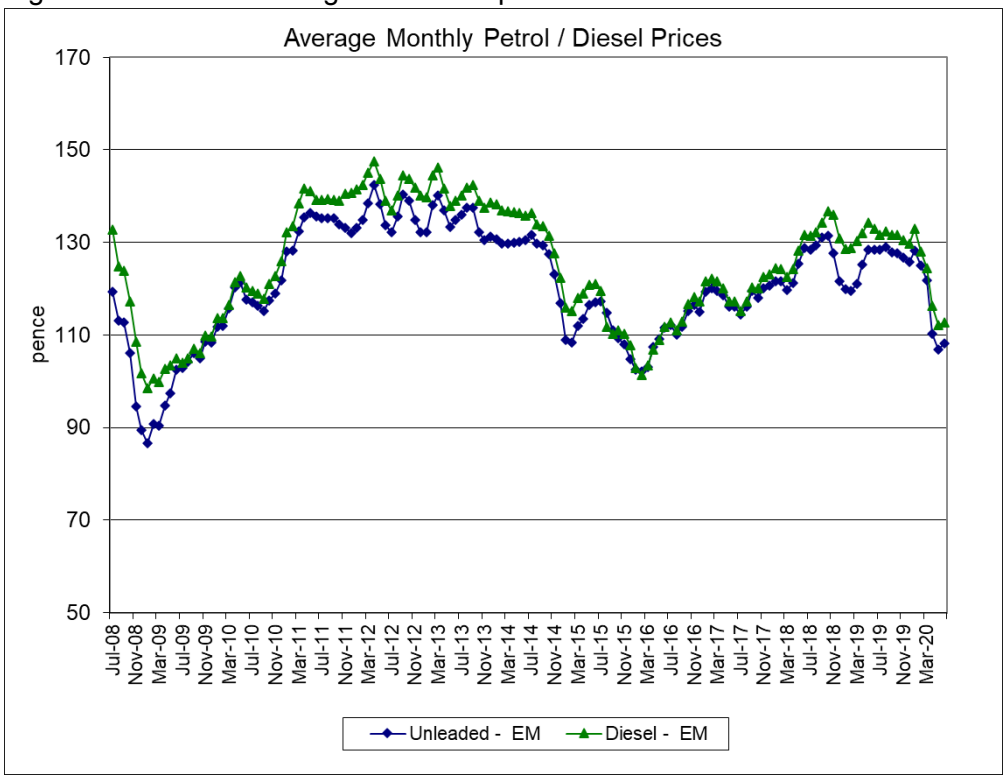
4.10 Bus Fares and Petrol Prices:

Figure 23: Day Ticket Prices 2008 - 2020



- Day ticket prices were held or lowered from May 2015 to 2019 at £4.10 or £4.20
- DfT figures show that local bus fares in England have increased by 86% in metropolitan areas between 2005 and 2018 while inflation (measured by the CPI) rose 35% over the same period.
- Bus fares have therefore risen in real terms.
- An all-day ticket on Nottingham City Transport currently costs £4.20 (10 or 20p cheaper than First or Arriva in Leicester), while in Coventry an adult day ticket is £4 (in 2020, up 10p from 2019).

Figure 24: Petrol - Average Forecourt prices for East Midlands 2008 – 2020



(Source: the AA)

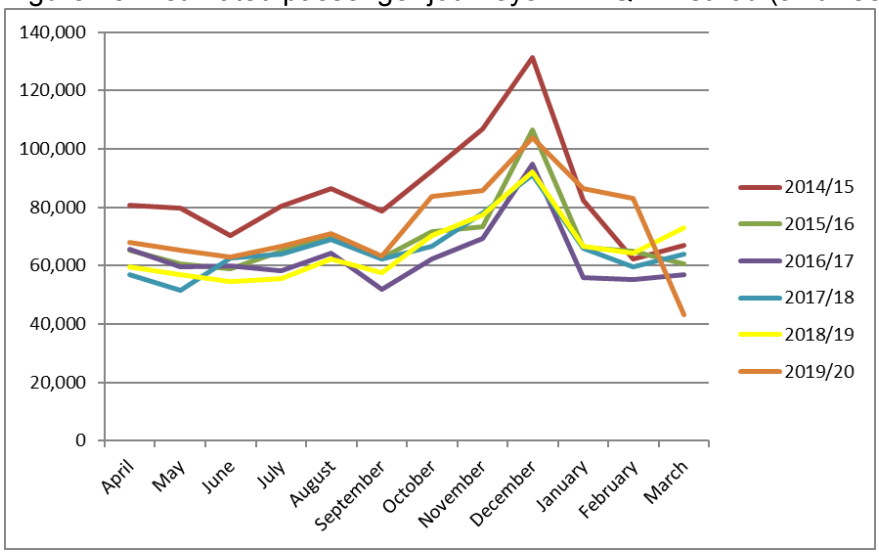
- Fuel duty was frozen by the Government from 2010 and petrol and diesel prices have not risen in real terms. In fact, in June 2020 they were back at June 2016 levels.
- This contrasts with the real terms increase in bus £3s over the same period.

4.8 Park and Ride

Park and Ride is aimed at longer distance car commuters and visitors travelling to Leicester City centre from areas without direct rail or long-distance bus connectivity. By providing frequent and reliable park and ride services, we can significantly reduce car traffic on the main arterial roads and associated air pollution along these built up corridors.

The three existing sites are all located on the north and west edge of the conurbation, close to the outer ring road and motorway network. Gaps in provision in the short term, include provision for those accessing Leicester via the A50 to the North West. An additional new facility is therefore proposed, at Beaumont Leys centre. The Transforming Cities programme aims to convert all park & ride bus services to electric vehicles, which is expected to deliver cleaner transport, with improved frequency. In the longer term, new sites are likely to be required serving the south and east of the city where major new growth is expected post 2031, as outlined in the Strategic Growth Plan.

Figure 25: Estimated passenger journeys – PVQD method (all three services)



- Income on all three services rose annually between 2017 & 2019 (see graph & table below).
- Day fares increased for the first time since 2009 on 4th Sept 2017
- While 13, 26 and 52 week tickets fell by 24–38% the cost of a Day Ticket rose from £3 to £3.50 and a Group Day Ticket (up to 5 people) from £3.50 to £4
- In Sept 2014 the 202 Enderby service changed its route to use the new A426 improvements
- Revenue rose in 2015 while passenger numbers fell. This was due to the introduction of charging for concessionary travellers in Jan 2015

Figure 26: Park and Ride Revenue

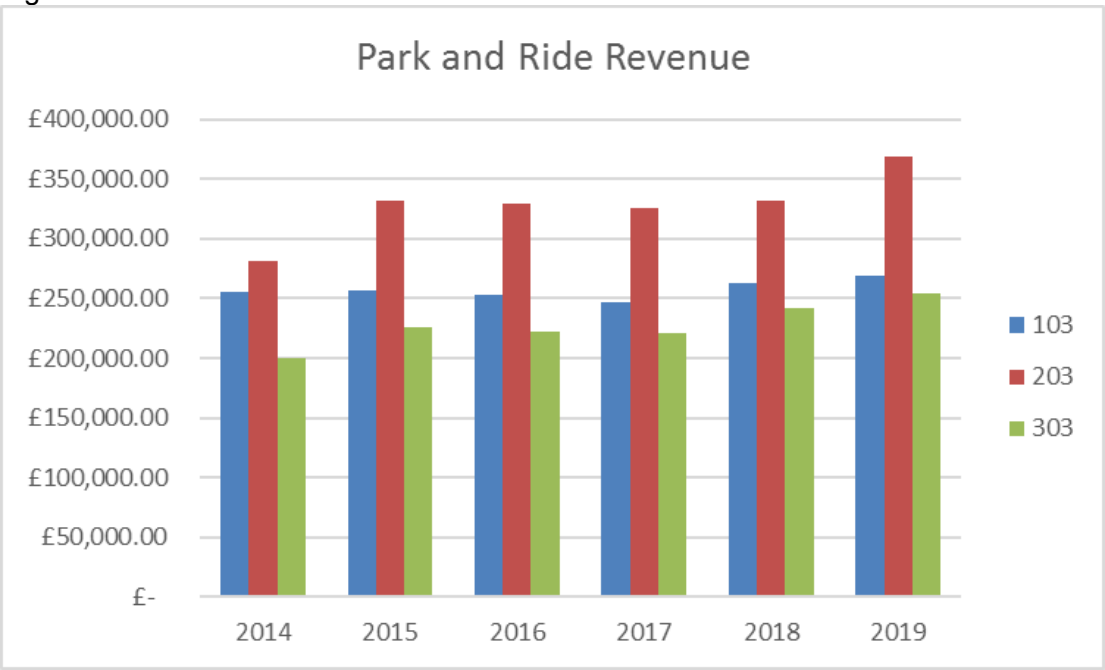
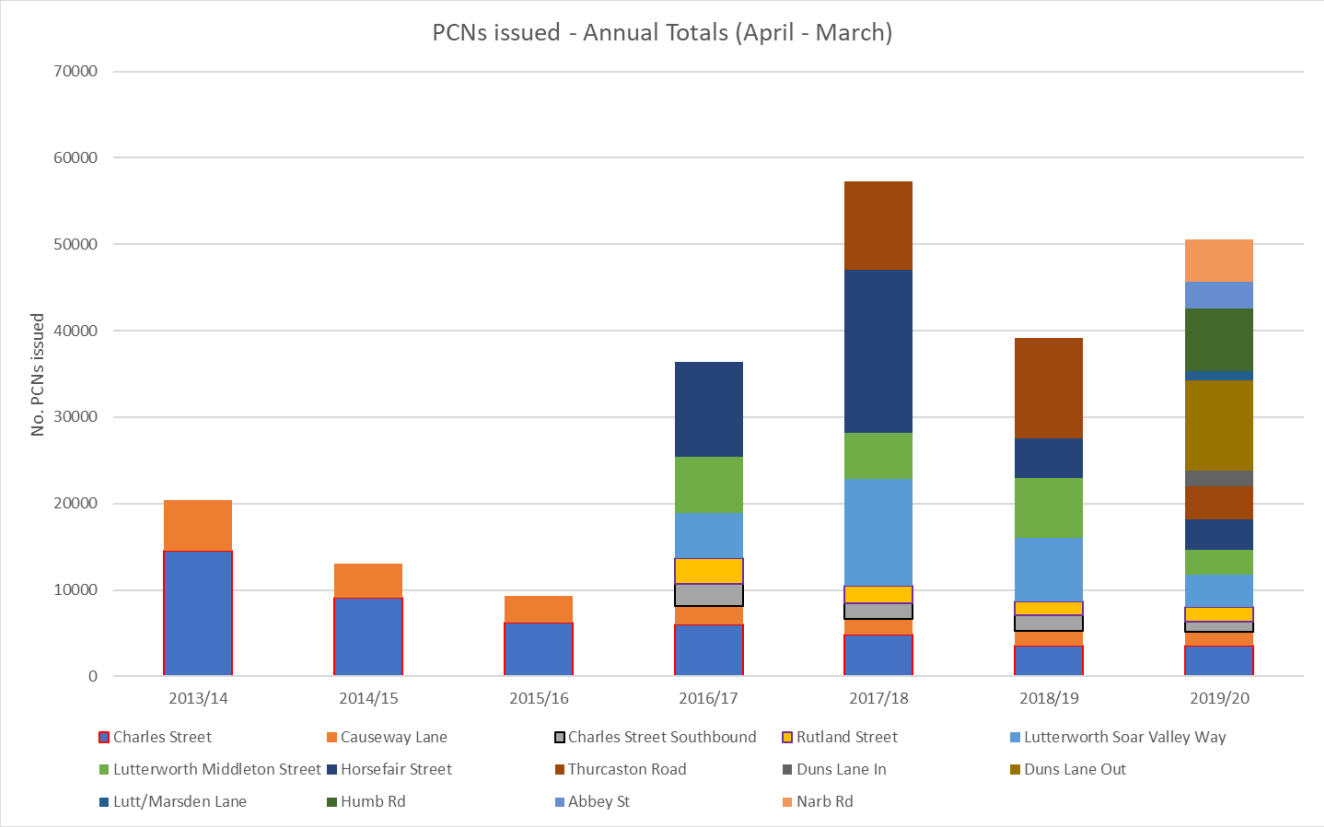


Table 4: Park and Ride – Revenue and Passengers

	2014	2015	2016	2017	2018	2019
Total Revenue (£)	737,927	814,542	804,109	793,377	836,672	892,371
Total Passengers	894,952	845,480	776,985	769,489	775,431	873,519

Figure 27: Bus Lane Enforcement



- Normally the number of fines issued falls rapidly as drivers adjust their behaviour.
- Horsefair Street issued over 6,000 PCNs in its first full month of operation in Feb 2017
- Only Lutterworth Road / Middleton St Inbound failed to show a reduction over the first three years, (due to drivers crossing into a bus lane too early, rather than going through a specifically signed Bus Gate, as with many of the other sites), but in 2019/20 fines more than halved.
- In September / October 2019 additional enforcement began on five new sites on Duns Lane, Lutterworth Road/Marsden Lane, A47 Humberstone Road, Abbey St & Narborough Road.
- Year on Year the existing sites issued 22,000 less tickets in 2019/20, a reduction of 44%, but the five new sites issued 28,468 tickets in the last six or seven months of the financial year.
- Duns Lane Outbound & Humberstone Road were the busiest, accounting for over 17,500 of those new tickets.

4.9 Transforming Public Transport

It is thought that introducing a more modern and higher quality mass transit system would provide a more attractive option to the car than the current public transport system can provide. As a growing city, a step change in mass transit options is required so serve both new and existing residents. The government's Future of Mobility Principles sets out that mass transit must remain fundamental to an efficient transport system.

For some there is an aspiration for a tram system for Leicester and enhanced interchange arrangements to provide additional capacity for travel to the city centre and to attract car users onto public transport. Trams have been delivered in Nottingham, Edinburgh and Birmingham. It is often seen as the mode of transport to a achieve a significant modal shift from cars to public transport as well as adding to a city's reputation and image.

However, one consequence of Leicester's compactness, is a limited physical capacity to accommodate a tram on the existing radial corridors without a measurable decrease in capacity for general traffic. One of the challenges for the city is to create improved corridors for walking, cycling, buses and, perhaps, trams in such constrained circumstances. Also, despite impacts from COVID-19 being likely to remain for some time, particularly in relation to public transport, it is considered that public transport will return to play a full part in keeping the city moving in the future.

The LTP4 Prioritisation exercise looked at transformative mass transit scheme options which included trams, guided bus and bus rapid transit. It was considered important that any mode introduced should offer sufficient flexibility to accommodate future land changes which the tram and guided busway does not offer. Additionally, a tram is a complex project to deliver and it will take many years to design, procure and build. The disruption to existing bus services and general traffic would also be significant and prolonged.

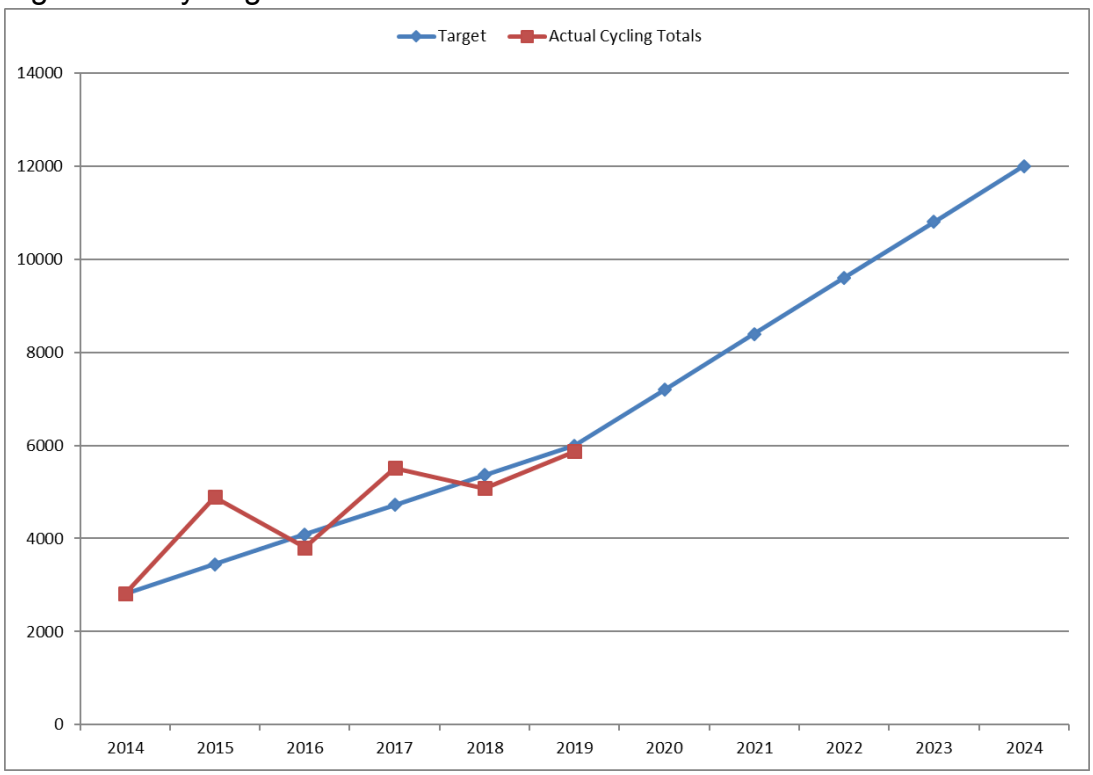
Therefore, the option of improving existing bus routes and services and to create an exemplary bus services in partnership with existing bus operators was the preferred option. This option was considered to offer the best potential because it is flexible, can be made affordable, can be scaled up quickly and it also minimises disruption for transport users. Proposals for an Electric Mass Transport Bus network are being developed and delivered under the Transforming Cities programme and will be known as Greenlines.

Given the unprecedented impact of COVID-19 on bus travel, the bus sector requires additional focus and support in the short term while patronage recovers from the low levels seen during 2020 and early 2021 to pre-Covid levels. Any local action must be coordinated with the provisions of the National Bus Strategy published by the Government in March 2021[50].

[50] Bus Back Better (publishing.service.gov.uk)

4.10 Walking and Cycling

Figure 28: Cycling Trends / Counts



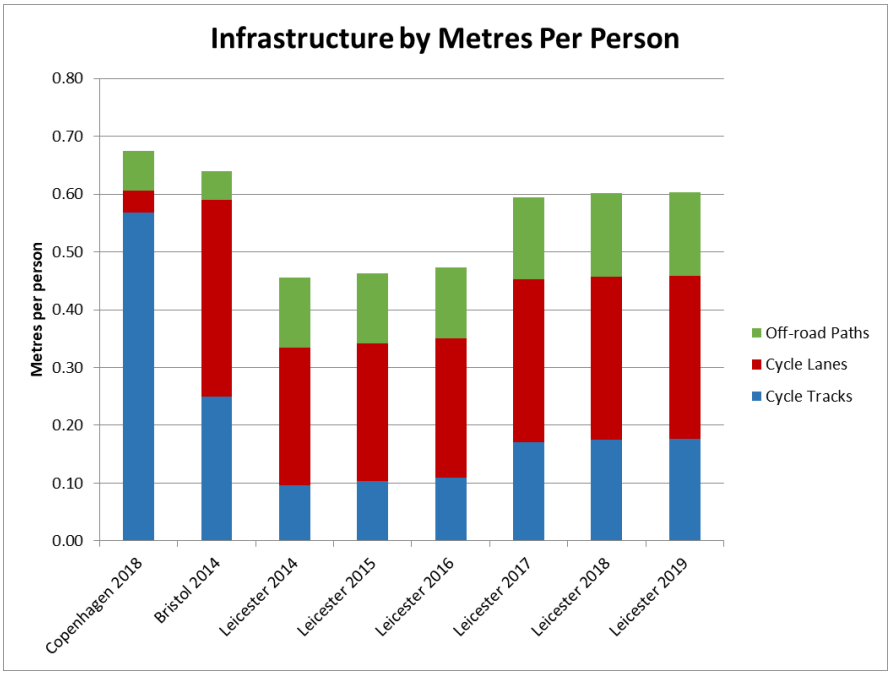
- The target of doubling cycling in five years (2014–19) and then doubling it again in the next five (2019-24) is equivalent to roughly a 15.5% a year over the total ten-year period. Leicester's ambitions for cycling are set out in 'Leicester Cycle City Action Plan'.
- From a base of 2,813 in 2014 cycling trips have doubled to 5,870, an increase of 3,057 or 109%. However, only about 2% of Leicester's residents currently cycle to work, despite considerable increases in 2008-17[51]. However, over half of all car users in Leicester could be encouraged to cycle to work. The most popular incentives were *Access to discounts on bikes or accessories* (33%) *and A company cycle to work scheme* (22%).[52]
- Numbers in 2018 were adversely affected by the lateness of the surveys (both universities exam periods were over), but the 2019 totals saw a return to 2017 levels.

[51] https://www.leicester.gov.uk/media/xkhfuzsk/transforming-cities-fund-strategic-outline-business-case-2019.pdf

[52] Leicester Business Engagement Survey (2020) (GoTravel Solutions).

- Independent cycle counters recorded 6% growth between May-June 2017 and the same period in 2018 (see map below for counter locations).
- Examples include Corriander Way and Martin Ryan Walk on the Great Central Way up to 820 to 871 from 693 to 770, respectively. Counters on Forest Way, Riverside Way and in Beaumont Park also saw increases
- There were small reductions on Krefeld Way and Knighton Walk/Way
- Completion of London Road, Great Central Street, Belgrave Road, York Road, Lancaster Road schemes are anticipated to have a significant impact on cycling numbers from start of 2020.
- Leicester's 100% ebike share scheme is predicted to bring significantly increased trips across city centre & CTZ cordon (Launch: June 2021).
- The Local Cycling and Walking Investment Plan (Phase 1 Submission, November 2019) will be used to prioritise new projects across the city[53].

Figure 29: Infrastructure by metres per person



- Note that Leicester's Cycle Lanes figures do not include Bus Lanes – these would add another 17.8km (or 0.05metres per person) in 2019.
- Definitions:
  - Cycle Tracks - Physically separated, designated tracks along street & roads & Pedestrian Preference Zone (PPZ)
  - Cycle Lanes - Marked & signed only, on-highway lanes
  - Off-road paths - Designated routes off-Highway, e.g. in parks, Great Central Way, Riverside & trails
- Over £18m has been spent on schemes which improved cycling infrastructure.
- This is equivalent to more than £52 per person in Leicester.

Examples include Charter Street bridge, Belgrave Gate South, Newarke Street, Welford Road, King Street, Grey Friars, Mill Lane, Welford Road, London Road and more (but not

[53] https://www.choosehowyoumove.co.uk/wp-content/uploads/2020/07/Leicesters-LCWIP-document.pdf

including Jubilee Square, St Martins (which was part of a larger scheme) or Belgrave Circle works (where costs were included as part of the flyover demolition)

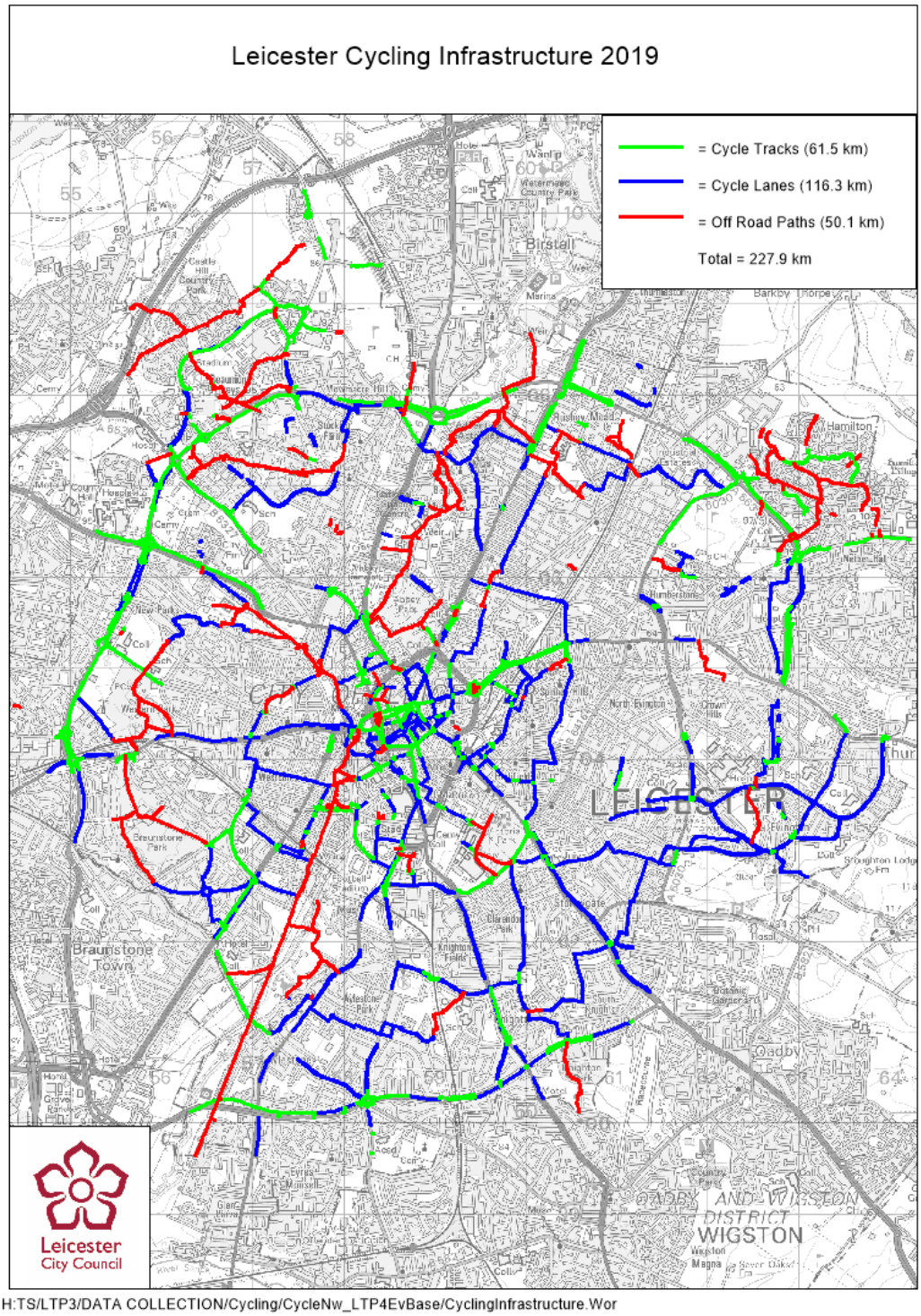
As the data shows, providing new walking and cycling infrastructure and behavioural change initiatives, can play a key role in delivering modal shift over shorter journeys, helping to reduce vehicle emissions and contributing towards healthier lifestyles. The government wants walking and cycling to be a normal part of everyday life and natural choices for shorter journeys such as going to school, to work or for simple enjoyment.[54] The Council has developed a Local Cycling and Walking Infrastructure Plan (LCWIP) which defines the cycling and walking network of Leicester, as well as setting out aspirations for future provision of cycling and walking infrastructure.

The City Council was awarded £1.3m by the DfT from its Emergency Active Travel Fund with the creation of 'pop up' cycle lanes as set out within the Council's 'Leicester COVID-19 Transport Recovery Plan' to help key workers in particular to get around safely during the COVID-19 pandemic. The funding will also be used to help make some of these permanent as well as making improvements to neighbourhood streets so that it is easier for people to choose more active forms of travel.

During the first lockdown in 2020, Leicester succeeded in delivering 11 miles of pop-up cycle routes in 9 weeks, including routes catering for key workers. This resulted in large increases in cycling in specific areas, including nearly 200% in Braunstone Park and Riverside Way.

[54] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/918442/cycling-walking-investment-strategy.pdf

Figure 30: Leicester Cycling Infrastructure 2019



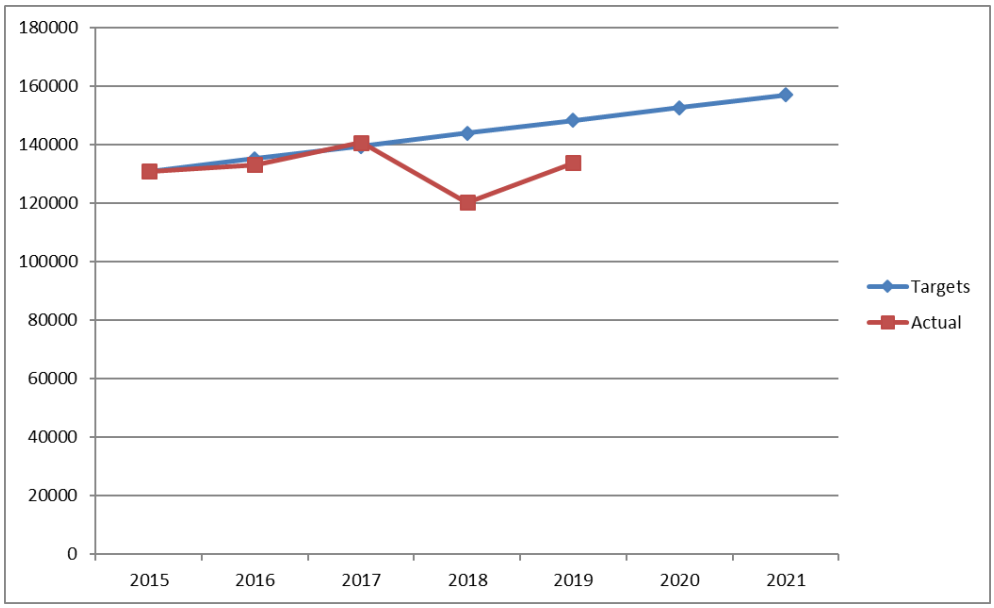
H:TS/LTP3/DATA COLLECTION/Cycling/CycleNw_LTP4EvBase/CyclingInfrastructure.Wor

Cycling can improve accessibility to sites that do not have a frequent public transport service, can be quicker than travelling by car and has obvious health and air quality benefits. The council's Cycle City Action Plan (2015-2024) sets out the council's current strategy for delivering cycling improvements.

We are investing in a growing network of automatic pedestrian and cycle counters, as shown below:

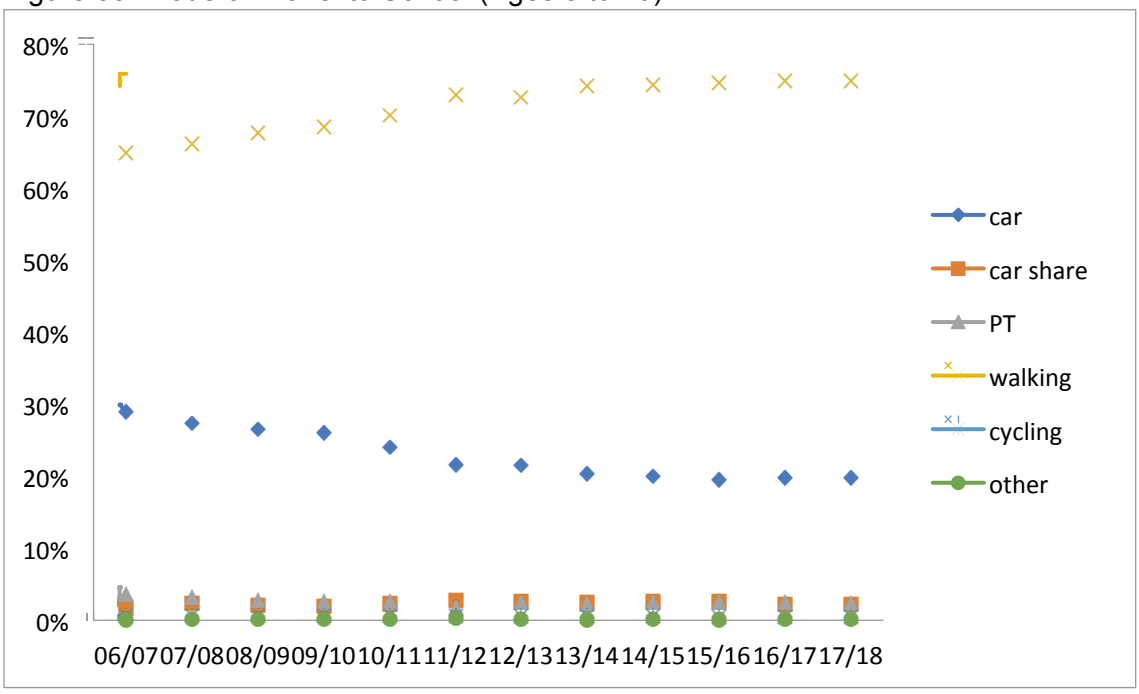
Figure 31: Automatic pedestrian and cyclist counts

Figure 32: Walking Counts



- Pedestrian numbers walking across three different cordons in the city grew by 20% between 2008 and 2014.
- A similar target of 20% growth between 2014 and 2020 was on target until last year (2018)
- This was most likely due to the lateness of the surveys in 2018, which occurred after the final exam periods at both universities were over (cycling numbers were similarly affected), however the 2019 results did not return to, or improve on, 2017 levels, for reasons that are unclear.

Figure 33: Mode of Travel to School (Ages 5 to 10)

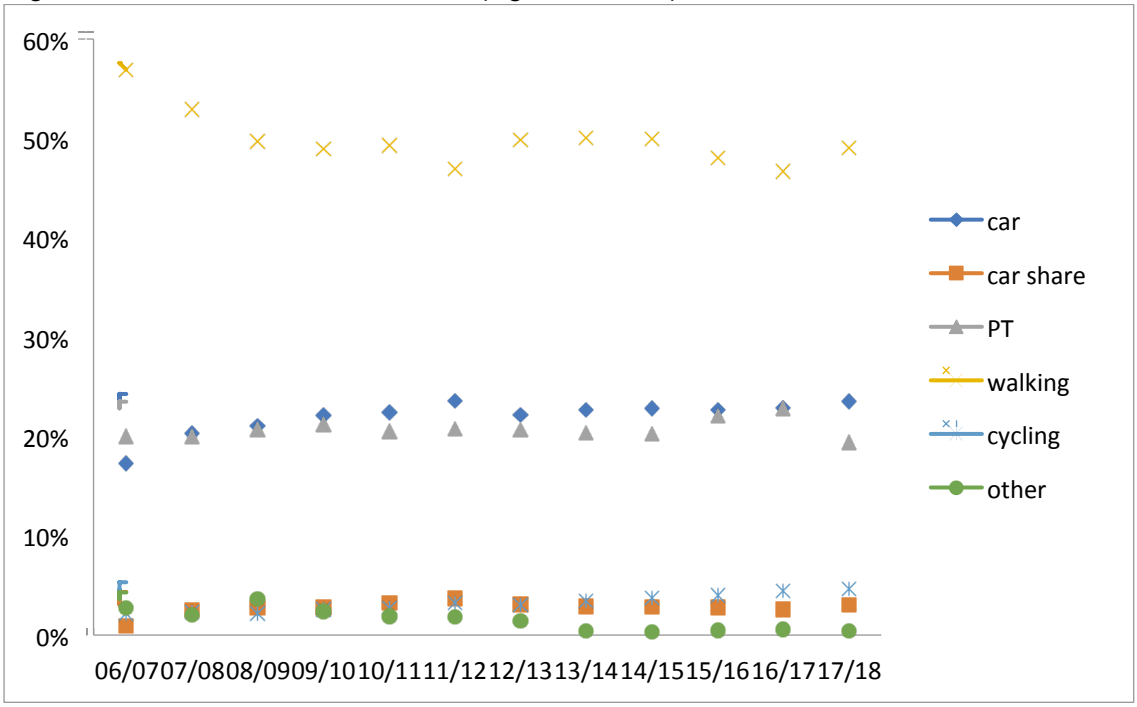


- The surveys indicate the proportion of children in the 5-10 age group walking to school has significantly increased whilst those travelling by car has significantly decreased. Catherine Junior School came 6th nationally in 2019[55] in the Big Pedal challenge (an active school challenge).

Picture 1: Recent success at Big Pedal Challenge

[55] https://www.catherine-inf.leicester.sch.uk/pages/news/76474

Figure 34: Mode of Travel to School (Ages 11 to 15)



- The Secondary school trends are less marked, but cycling shows a continuous upward trend from 3% of trips in 2012/13 to 4.6% in 2017/18.

Source: Annual Public Level Annual School Census (PLASC) survey

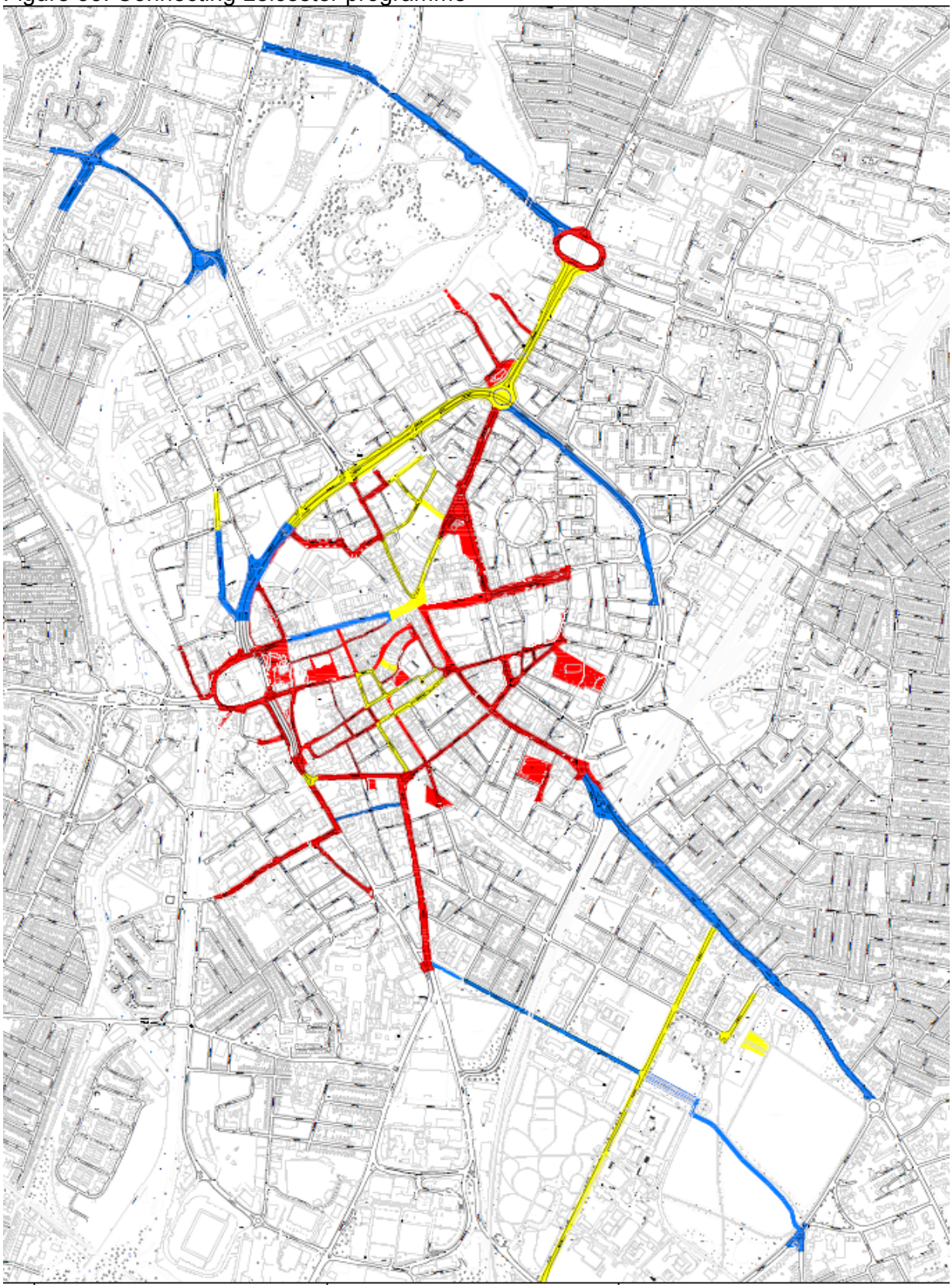
4.10.1 Connecting Leicester Programme

The city centre public realm has been transformed in the past 10 years through major investment in city streets and the creation of six new public squares through the Council's Connecting Leicester programme. The council's ongoing Connecting Leicester programme has seen substantial investment in public and sustainable transport amounting to over £100m. This has included extensive new, high quality cycling and walking infrastructure, focussed in and around the City centre and a dramatic improvement in the public realm through revitalised streets and new public squares and spaces. The Connecting Leicester programme investment from 2011 within the city centre has delivered a 32% increase in cycling between 2012-2017. However, there remain:

• Unattractive/weak cycling links for 155,000 people, particularly within a relatively short (10-minute) ride of the city centre;
• Insufficient cycling links targeting employment zones outside the city centre; and
• Inadequate secure cycle parking provision, around transport hubs and strategic locations.

National cycle routes cross the city and the city cycleway network is developing linked to the recent Connecting Leicester programme. There is a substantial Pedestrian Priority Zone in the city centre.

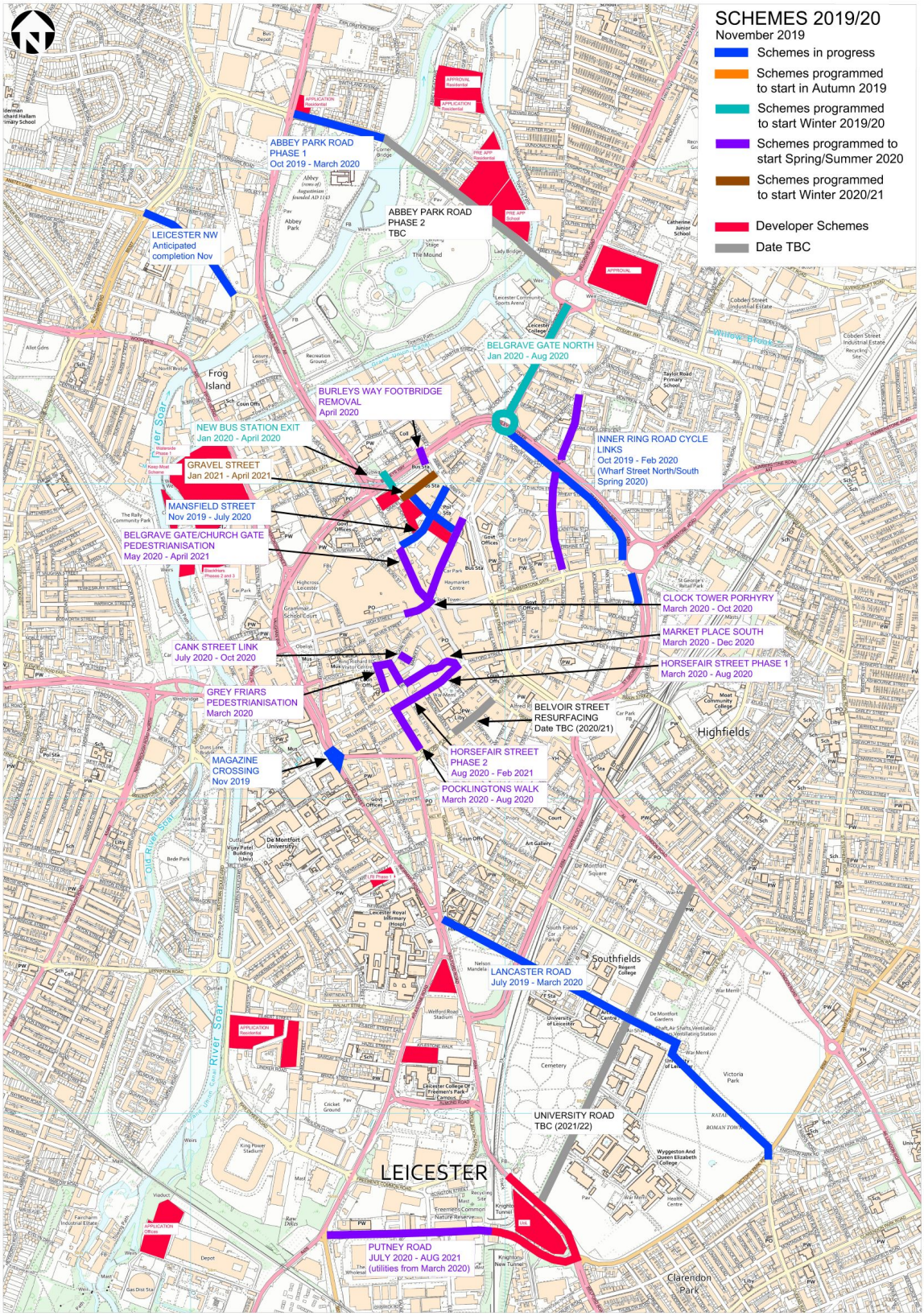
Figure 35: Connecting Leicester programme



KEY: Red = Completed schemes
Blue = Current schemes
Yellow = Proposed schemes (as of October 2019)

Source: Central Area and Project Management Team

Figure 36: Connecting Leicester projects 2019/2020



Source: Central Area and Project Management Team

4.11 Rail

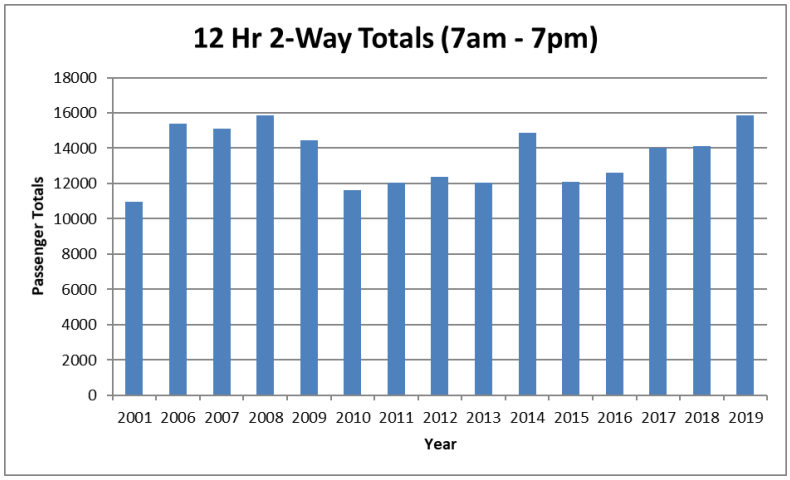
Rail can often be the preferred mode of travel over longer distances, as it can offer a convenient, quick, reliable and comfortable option. Rail usage at Leicester has grown by 4.8m (2012) to 5.3m (2019/20[56]). Making sure that there is capacity for continued growth in travel by rail, for both local and longer distances, remains a challenge.

North-South rail connections to London, Nottingham, Derby and Sheffield are good through the Midland Mainline services[57]. The potential for classic compatible services connecting the Midland Mainline route to the proposed HS2 hub at Toton, South of Nottingham, is also being actively pursued. It would provide important access to the HS2 network for passengers towards the LEP region. It is estimated that this regional hub will serve a catchment of 2 million people with the best HS2 connectivity outside the capital[58]. The Eastern HS2 connection also has the capacity to provide wider economic impacts with local firms winning delivery contracts during the construction phase. There are currently no plans for a direct connection between Leicester and the HS2 though an economic case for a Main Line connection at Leicester exists, potentially halving current journey times to Leeds. Even without such a connection, transferring services from the Main Line to HS2 could provide spare capacity for north-south services running via Leicester upon completion.[59]

East-West rail services are relatively poor, and work though Midlands Connect is focussed on providing additional services to Birmingham and a new direct service linking Leicester to Coventry. Leicester Rail Station is a key transport hub for the city but has received little investment in recent years compared with other comparable stations and last received a major overhaul in 1974. It is very poor compared with others of a similar size in terms of transport experience, quality and transport integration. It has the potential to play a much greater role to serve.

4.11.1 Rail Patronage (not surveyed in 2020 due to COVID-19 lockdown)

Figure 37: 12 Hour total passenger totals at Leicester railway station (7am – 7pm)



Source: Annual One Day Surveys

Combined arrivals and departures at Leicester railway station fell notably at the start of the

[56] Estimates of station usage | ORR Data Portal

[57] http://politics.leics.gov.uk/documents/s157827/Appendix%20B%20-%20Revised%20LLSTP.pdf

[58] https://llep.org.uk/app/uploads/2020/11/Local-Industrial-Strategy-Economic-Review-June-2019.pdf

[59] https://llep.org.uk/app/uploads/2020/11/Local-Industrial-Strategy-Economic-Review-June-2019.pdf

recession in 2008/09 and have slowly recovered over time.

Figure 38: Office of Rail and Road (ORR) Annual Estimates of Leicester Station Usage

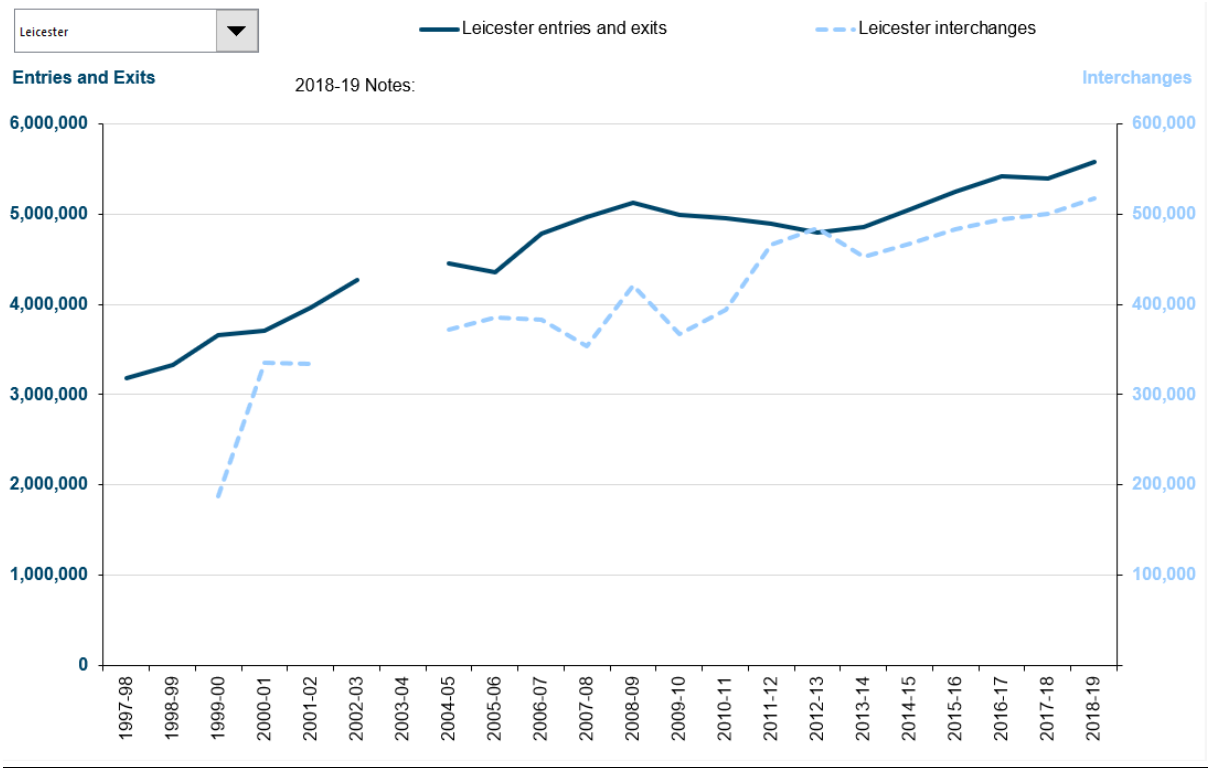
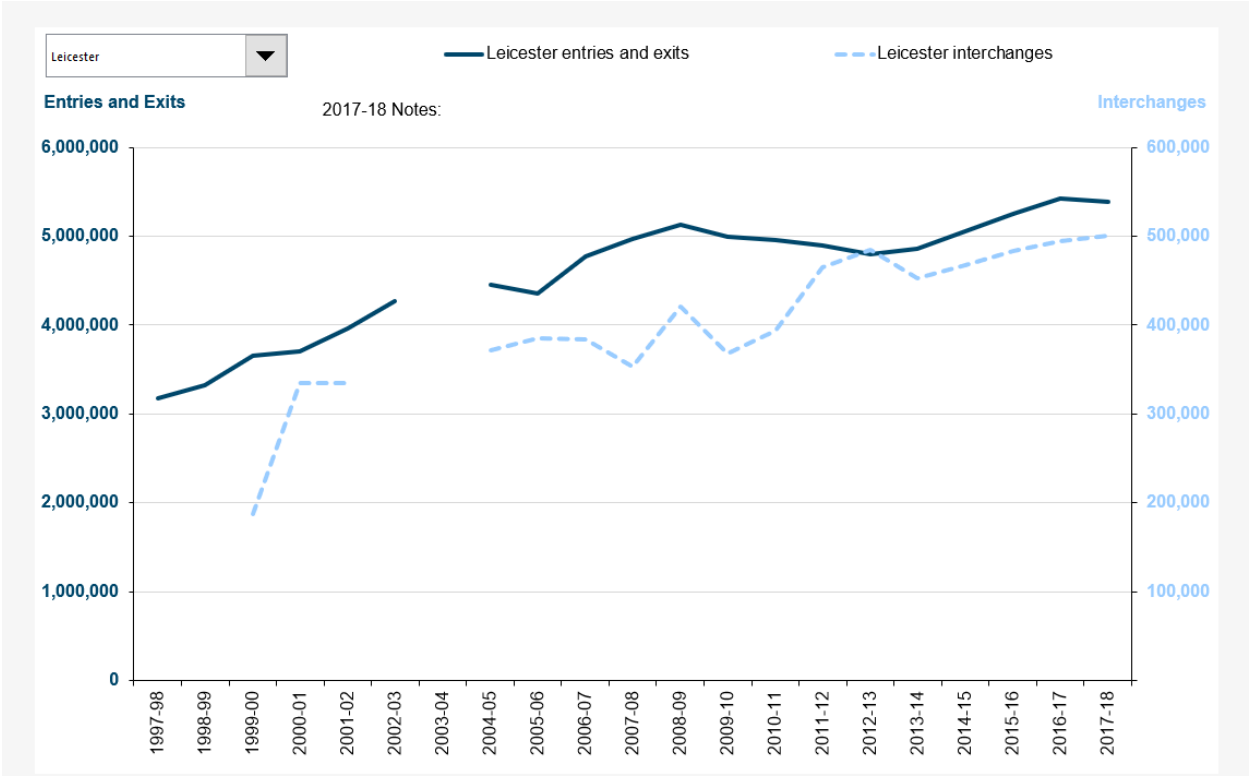


Figure 39: Leicester's Entries and Exists



- ORR figures show interchanges between services in the station separately (dotted line), which are not recorded in our annual surveys.

Entries & Exits	2016/17	2017/18	2018/19
Derby	4,089,076	3,962,860	3,902,176
Leicester	5,422,928	5,392,710	5,582,286
Coventry	7,377,584	7,558,210	8,207,914
Nottingham	7,468,864	7,858,974	8,004,938
Sheffield	9,538,052	9,667,514	9,907,724

Table 5: Leicester's Entries and Exits

Future growth and to significantly improve the efficiency of modal interchange. The Council's vision and proposals for Leicester Rail Station, set out in the Central Development Area chapter of the draft Local Plan and is focussed on delivery of a major transformation scheme, not only for the rail station itself, but also land around it. This will provide the key catalyst to improve the station as an effective and attractive regional transport interchange.

The TCF2 vision has aspirations to support the predicted 1.8 million rail passengers by 2035, increase bus patronage by 10% on priority commuter corridors, double everyday cycling numbers and increase walking numbers by 20% by 2024.

Figure 40: Leicester's Forecast Future Demand

Forecast Future Demand

TRIPS	WITH BACKGROUND GROWTH ONLY	BACKGROUND GROWTH & NEW SERVICES
CURRENT TRIPS	5,145,312	5,145,312
2023	5,503,449	5,503,449
2028	5,993,408	5,993,408
2033	6,611,626	6,767,266
2043	8,130,607	9,032,167

The Leicester and Leicestershire Rail Strategy 2017 commissioned by Leicester City Council, Leicestershire County Council and LLEP provides a comprehensive analysis of the potential for improved rail services serving the area and notes the need for better integration and improvement at Leicester Railway Station. This strategy has been used effectively, to influence the rail improvement projects included in the Midlands Connect Strategy. In short these are intended to seek further improvement to north-south rail connections on the Midland Mainline, East-West connections to Coventry and Birmingham and direct connection to the HS2 line to the south of Toton.

4.12 Transforming Cities Fund

Transforming Cities Fund, Tranche 1 and 2
The Transforming Cities Fund aims to improve productivity and spread prosperity through investment in public and sustainable transport.
The TCF Strategy for Leicester builds upon the existing Connecting Leicester Strategy and it seeks to:

- Transform public transport provision through investment in bus priority measures and

complementary walking and cycling improvements on key radial corridors serving new development to the north west of the city.

- Improve and better connect city centre transport interchanges.
- Provide a smarter transport network.

The City Council secured £7.1m from TCF Tranche 1 in 2018 and a further £32m for TCF2 to deliver over £70m worth of sustainable transport measures.

The Strategy focuses on making better use of existing and developing new infrastructure to support sustainable travel between existing neighbourhoods, but also new ones in the city centre and adjacent regeneration areas and in the major developments that will extend the Leicester Urban Area.

4.13 Accessibility

A study[60] was commissioned by the Council (undertaken by consultants ITP) to assess the potential impacts of LTP4 on active travel and public transport accessibility (including micro-mobility modes). The key findings om the latest available data (based on car ownership within Leicester and accessibility by public transport, cycling and micro-mobility):

4.13.1 Public Transport

- Accessibility modelling of the bus network shows that most areas within the city boundary is accessible within a 30 minutes travel time of the city centre, providing access for 68% of the total population. The area north of Beaumont Leys is less well connected and falls outside of the 30-minute time boundary with small localised pockets of lower accessibility also found between radial routes.
- Access to the four modelled district centres - most areas within the city boundary falling within a 30-minute travel time by public transport which provides access for 70% of the total population. Areas that fall outside of a 30-minute travel time are at the extremities of the city boundary including north of Beaumont Leys and south of Aylestone. Several settlements to the east of Leicester also fall outside of a 30-minute travel time, including Humberstone and Thurncourt.
- Most of the city, 72% of the total population, is within a 30-minute travel time boundary of the 13 employment sites considered in the accessibility analysis,
- 60% of the population can access a hospital by public transport within 30 minutes.
- most developed areas falling within a 20-minute travel time of a school by public transport and many within a travel time of under 10 minutes. Overall, 84% of the population can access a secondary school by public transport within 30 minutes.

4.13.2 Cycling

Cycling accessibility in Leicester using the current road network is very good, with almost all locations within the city boundary within a 20-minute cycling ride from the city centre, accounting for 86% of the population (Figure 3-6). This increases to 100% for a 30-minute cycle ride.

4.13.3 Micro Mobility

Micro mobility in the form of E-bikes, which provide electric assistance up to a speed of 15mph, offers greater accessibility to the identified destinations than cycling alone, with large proportions of Leicester within a 10-minute journey and all remaining peripheral areas, accounting for 100% of the population, within 20 minutes. Within 10 minutes, 63% of the

[60] ITP Study

population can reach the city centre, 83% can reach a district centre, 91% can reach an employment site and 99% can reach a school.

Access to hospitals is also improved with the majority of areas within the Leicester city boundary (73% of the population) falling within a 10-minute micro mobility travel time of a hospital. Exceptions include the north of the city around Beaumont Leys, Hamilton and Rushey Mead and the southern tip of Aylestone, which fall within a 20-minute travel time.

4.14 Road Safety

There is a significant programme of road safety work, focusing on 20mph zones, school safety initiatives and projects within the Road Safety Partnership[61]. Research has found that by implementing 20mph zones, there is a 1.5% chance of being fatally injured, compared to 8% chance at 30mph[62]

Trends – How are we doing?

Figure 41: Road Safety – Accidents

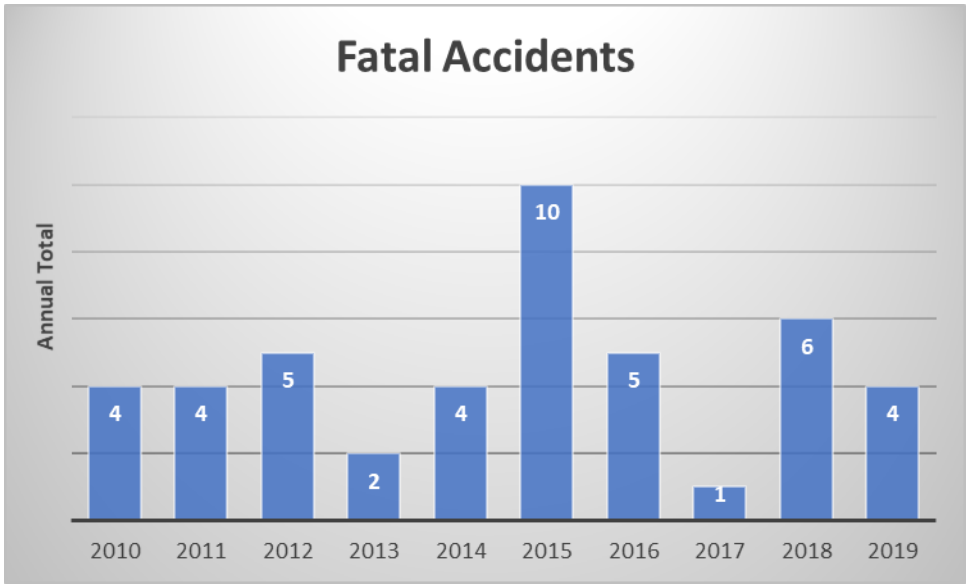
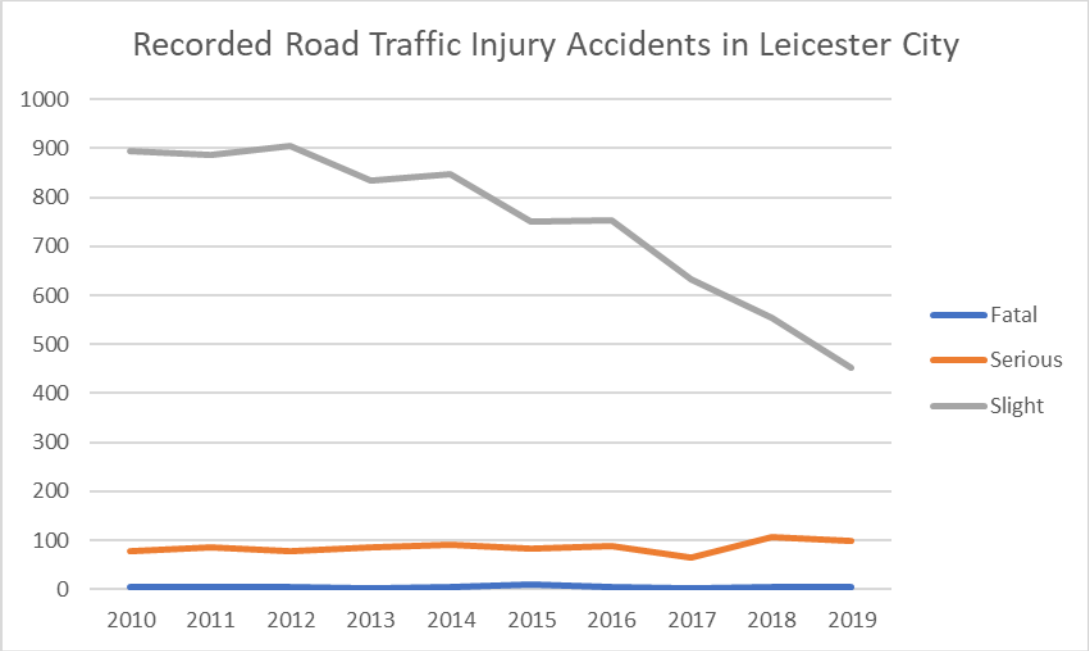


Figure 42: Recorded Road Traffic Injury Accidents

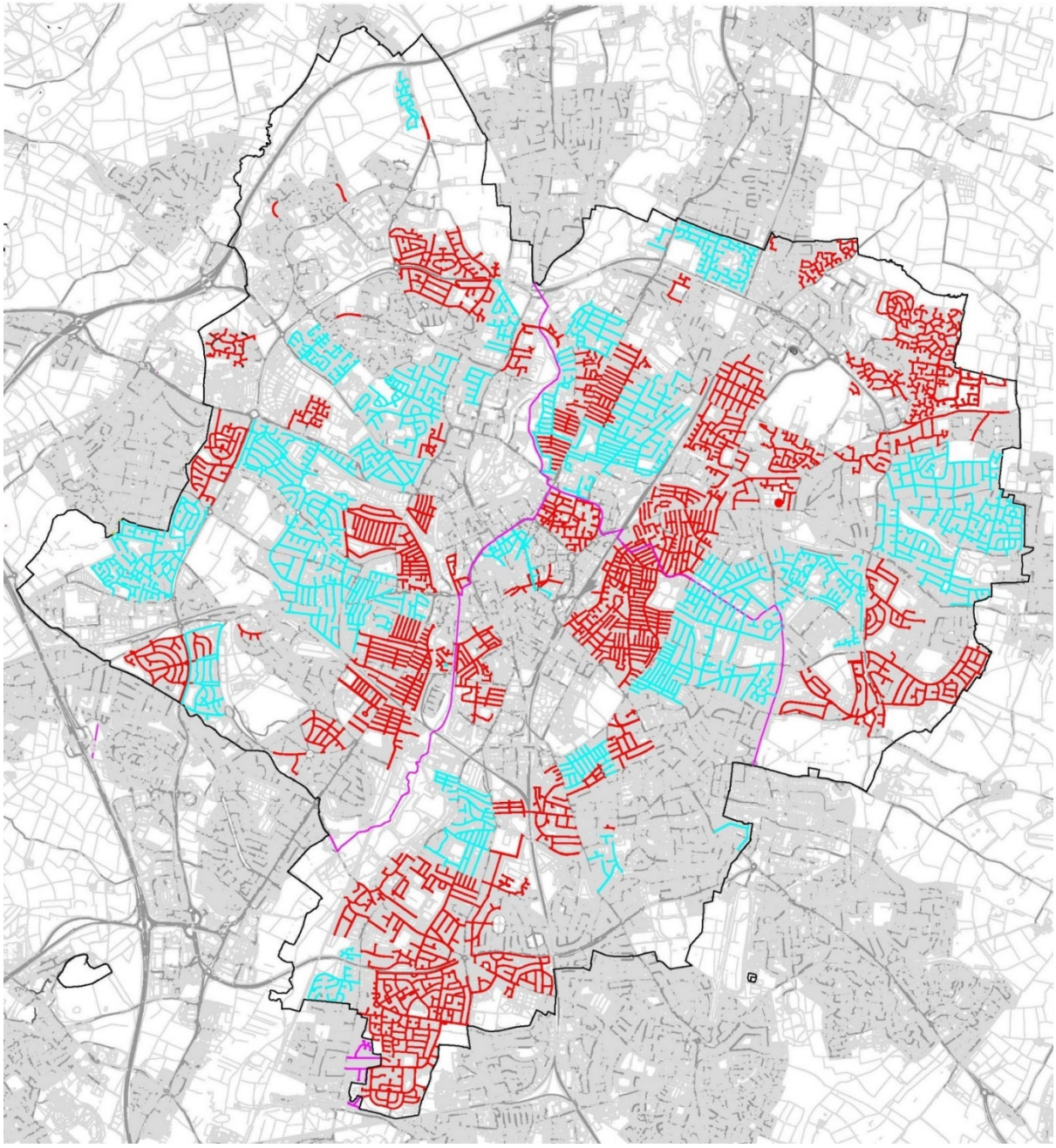
[61] Home - Leicester, Leicestershire and Rutland Road Safety Partnership (speedorsafety.com)

[62] 20 mph zones and speed limits factsheet Feb 2017 (rospa.com)



Source: Personal injury accident data is based on police figures (STATS19)

Figure 43: 20 mph zones (December 2019)



Key: Red = Existing, Blue = Planned

4.15 Air

East Midlands Airport is located in the north west of Leicestershire, accessed via the M1 and is the largest UK freight airport for dedicated freight aircraft. Providing both domestic and international routes for a range of passenger and cargo services EMA is a vital strategic asset for the LEP and a hub for the wider Midlands economy. The airport handled over 4.8 million passengers in 2018, up 13 percent over the last five years. In March 2021, it was announced that it will be one of eight new Freeports in England.

4.16 Freight

Leicestershire lies at the heart of the UK's logistics 'golden triangle'. The area at the intersections of the M1, M6 and M42/A42 motorways is considered to be the leading location for the logistics and distribution industry. The East Coast ports, the gateway to/from continental Europe, are easily accessible via the A14 and 95% of the English population are accessible within four hours by lorry. HGV traffic is significant - there are over 140,000 truck movements per day across the East Midlands as a whole. The M1, M69, A42/M42, A38, and A50 all carry between 5,000 and 10,000 HGVs per day and HGVs account for over 10% of traffic on a number of strategic links including the A511, A512 and A444.

The movement of transport and goods is essential for the economy. A large number of freight movements in Leicester are undertaken by road, which can have significant impacts in terms of noise, congestion and air pollution, as well as on the quality of life for communities. Goods vehicles manoeuvring and loading and unloading, also add to pollution and may cause congestion and danger to pedestrians and other road users.

The contribution made by rail and water will always be very limited in Leicester. No suitable sites exist within Leicester for strategic rail freight sites which are often 50 hectares or larger (units all over 9,000m2). However, pressure remains within the wider Leicester area for large scale B8 (distribution) which will generate significant freight movements within Leicester. Opportunities should still be sought for rail freight connections within Leicester especially at the Humberstone Goods Yard which has land safeguarded by Network Rail to allow linkage to the rail network.

Sub-regionally, currently under construction is the East Midlands Gateway; a large logistics and freight exchange adjacent to East Midlands Airport (EMA). Capitalising on the strong cargo handling facilities at EMA the development also includes improved access to the M1 motorway and a large freight rail terminal. It is hoped that up to 7,000 new jobs will be created once the project is complete.

Magna Park, in Lutterworth, is one of the largest logistics parks in Europe, with good strategic access to the M1, M6 and M69 motorways.

In fact, 95% of the English population are within four hours (day return for an HGV) of Lutterworth. The area is very attractive to the distribution industry.

However, road links to the A1 northbound are poor with vehicles having to travel via the sub-standard A46.

EMA is second only to Heathrow in terms of the total tonnage of air freight moved and handles the greatest tonnage on freight-only aircraft.

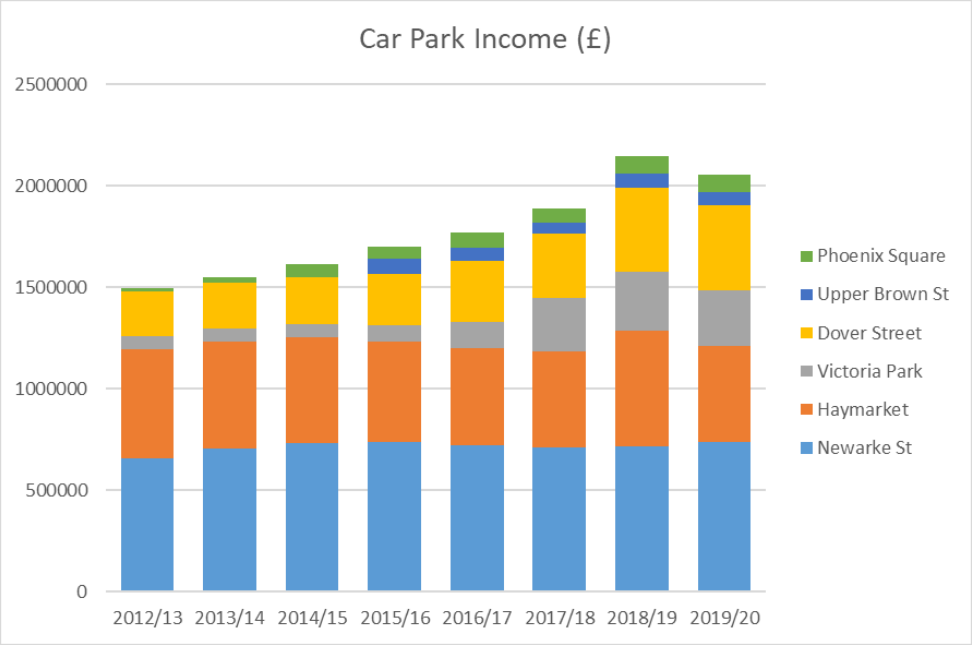
4.17 Parking

Travel by car remains a reality for now and is an important means for people to get to work, shop and enjoy leisure and cultural facilities. Parking provision is important to support these activities and the local economy more generally. However, we need to rebalance people's travel behaviour, where possible, reducing the amount people travel by car and by prioritising travel by more sustainable alternatives. The location, amount, quality and type of parking provision, can influence travel behaviour and it is important that we carefully manage the provision of new parking, including that associated with new development.

Currently, over 12,000 public parking spaces are provided within the City centre. The (2011) "City centre Parking" SPD, showed that there were more 'available spaces', (i.e. that were not in use between 8am and 9am), in the northern part of the city centre (north of

Humberstone Gate/High Street), than in the south and that these were generally cheaper to use.

Figure 44: LCC Car Park income (financial years)



- LCC parking charges changed to round pound figures in October 2014.
- The smaller car parks earn much more money per space than the larger ones.
- According to the RAC's Local Authority Parking Finances in England report, Leicester had a Parking Surplus (Income from On & Off Street parking minus Expenditure) of £3.1m in 2018/19.
- This puts Leicester in 71st place in a list of ranked English Councils by parking income surplus.
- Nottingham (excluding WPL) is in 65th place with a surplus of £3.5m

Figure 45 -Parking Income per space

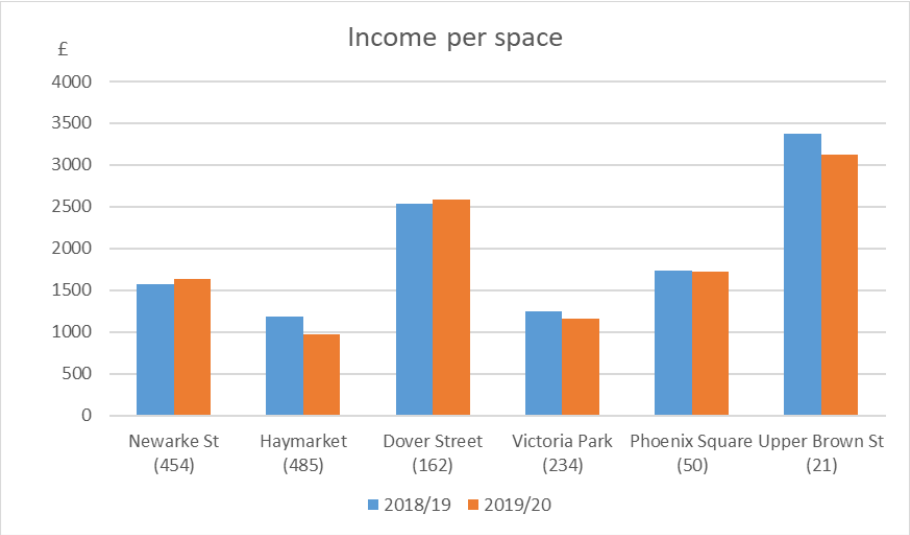
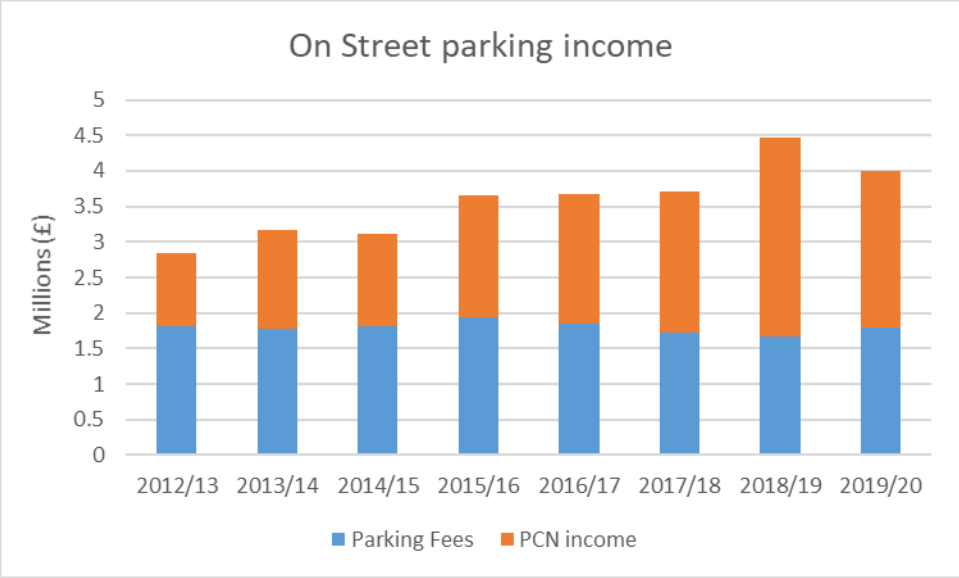


Figure 46: LCC On Street Parking Income (financial years)



Issued Penalty Charge Notices (PCNs)

- Data shown in calendar years with 2020 data up to end of June 2020

	2014	2015	2016	2017	2018	2019	2020
On-street PCNs issued	37,950	45,966	53,674	51,657	76,478	75,805	18,231
Off-street PCNs issued	1,504	1,691	1,808	2,150	2,084	2,660	895
Total	39,454	47,657	55,482	53,807	78,562	78,466	19,126

Table 6: Number of PCN's issued

- 3,591 of the 2020 PCNs are warnings issued under lockdown without a fine attached.

4.18 Road Maintenance

Figure 47: Trends – How are we doing?

Leicester City Council
2019/20 Road Condition Index

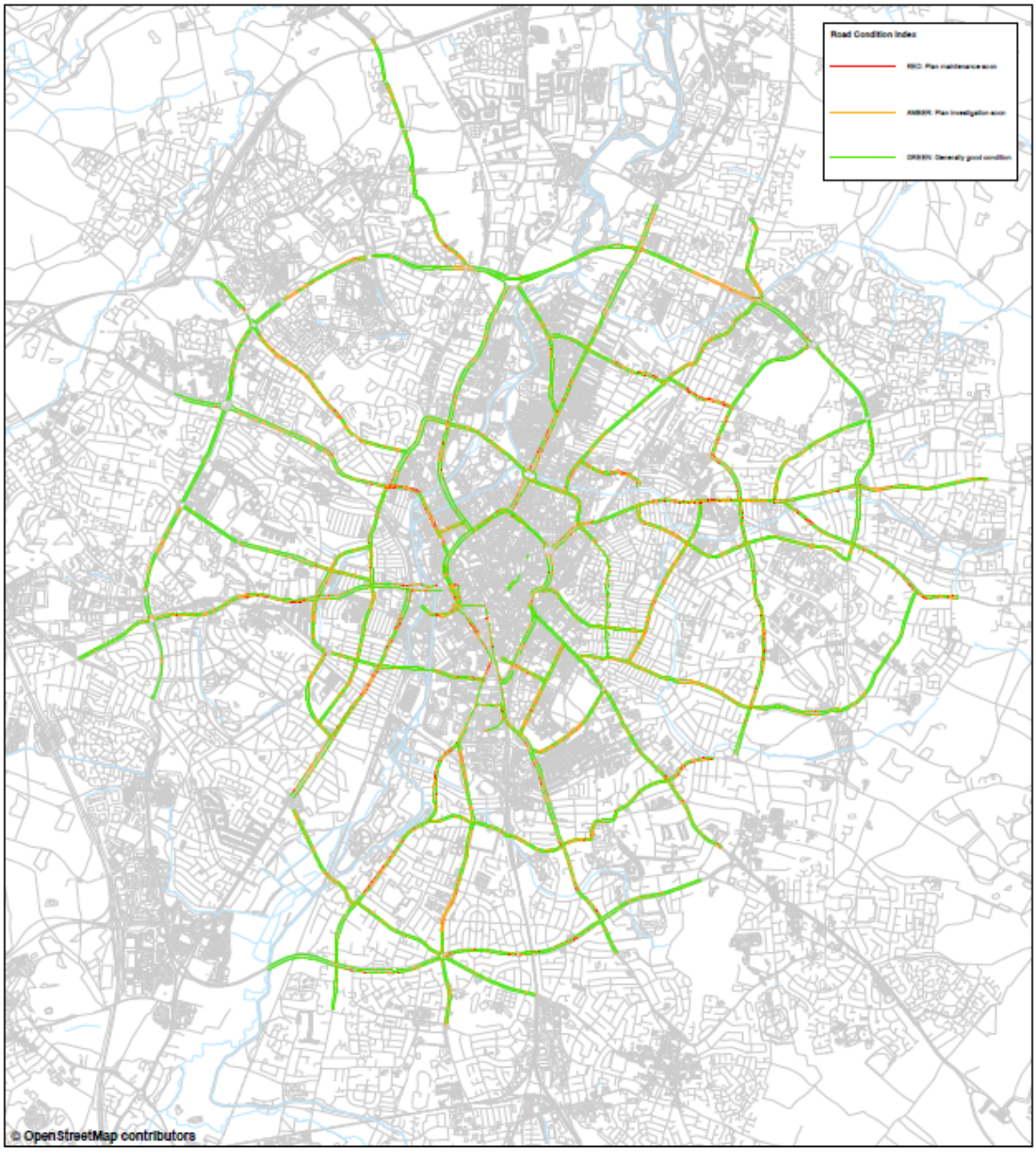
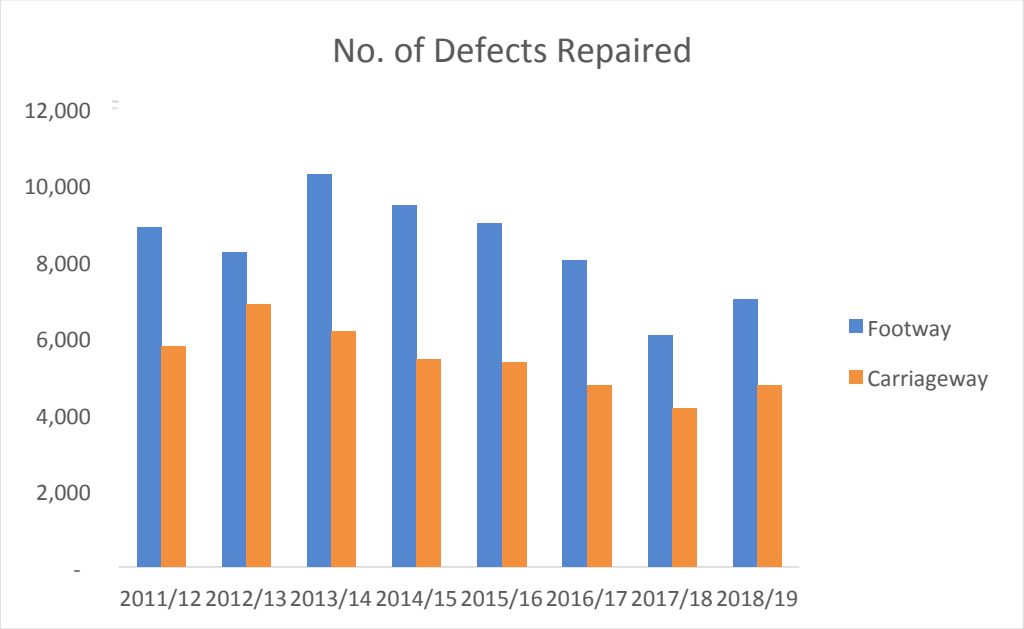
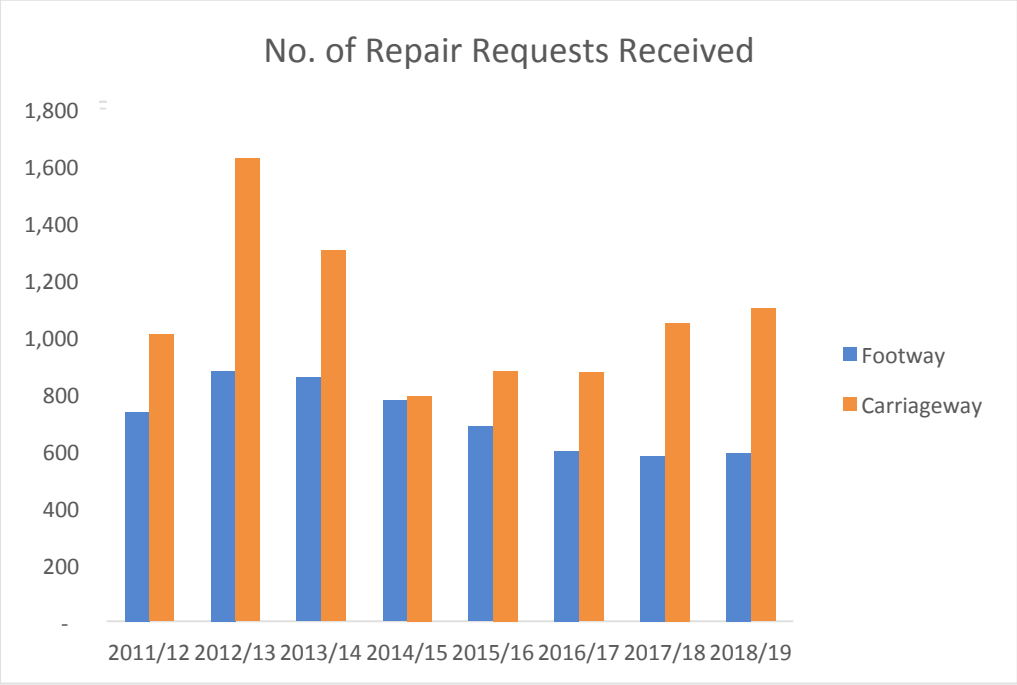


Figure 48: Carriageway Defects / Potholes Repaired



- Downward trend from 2012/13 stopped as a result of severe winter weather in 2017/18
- 32% reduction in footway defect repairs from 10,279 in 2013/14 to 7,008 in 2018/19
- The figures reflect the targeted spending on carriageway repairs and maintenance schemes and tackling roads where problems occur

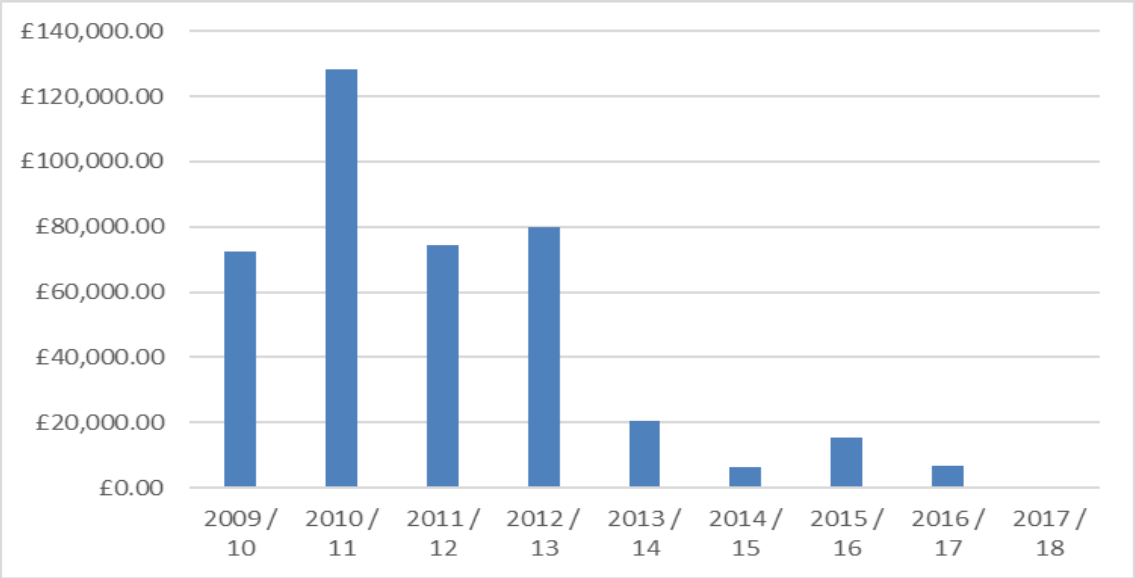
Figure 49: Number of Repair Requests Received



- 31% reduction in footway repair requests from the public from 2013/14 to 2018/19

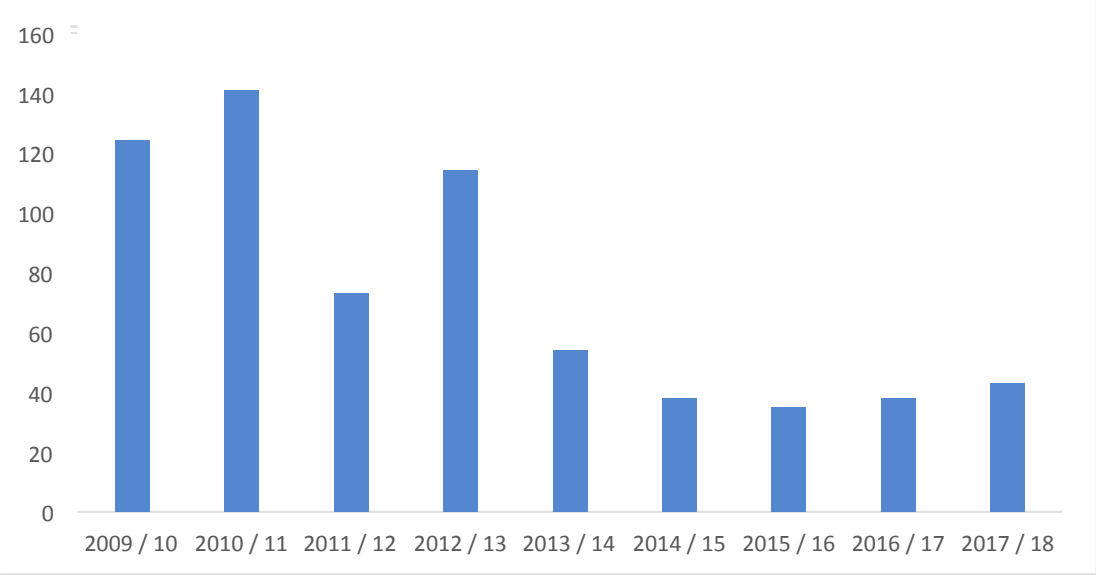
Overall compensation provided by the council for successful claims relating to vehicle damage and injury as a result of potholes or uneven surfaces in each year since 2009/10 (Leicester):

Figure 50: Compensation Amounts



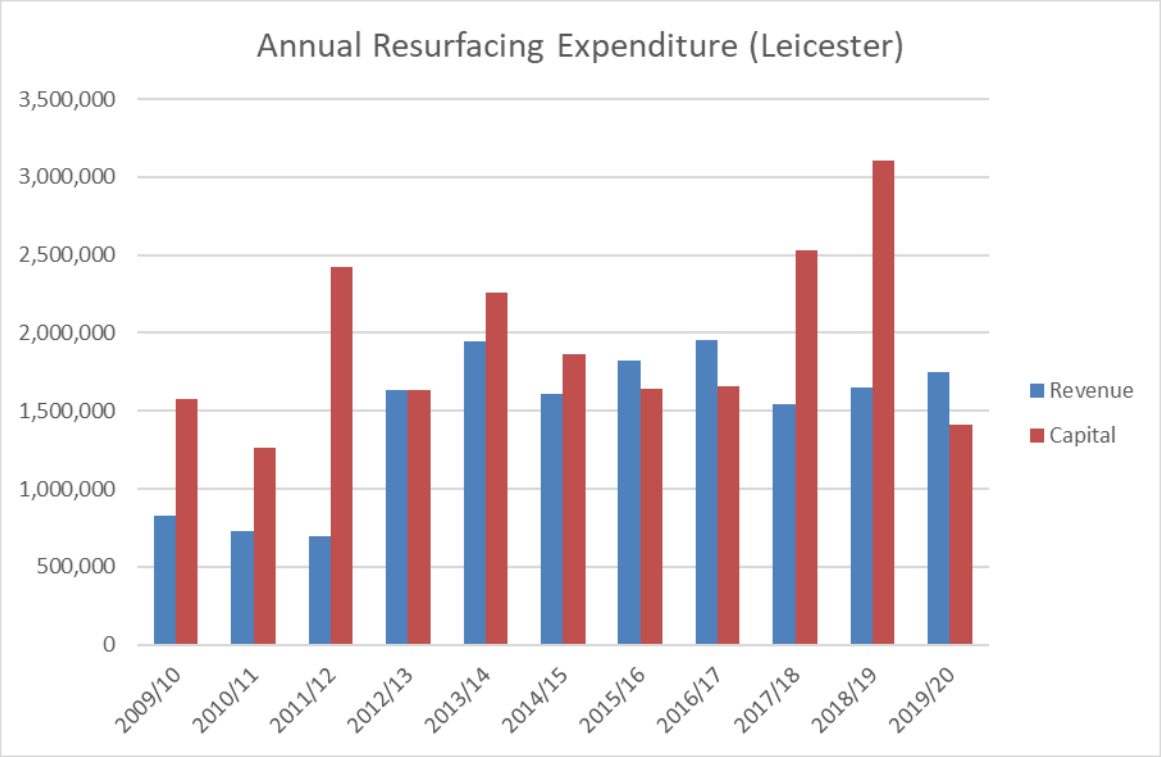
- 2017/18 figure is £457, which does not show on the graph.

Figure 51: Number of claims relating to vehicle damage and injury caused by potholes or uneven surfaces (Leicester)



- The majority of claims received for vehicle damage are post bad weather.
- It can take an average of two - three months to settle a claim of this nature, and some claims are presented late (maybe up to three months post incident), so there can be a lag of up to six months between the claims and the corresponding compensation being paid.

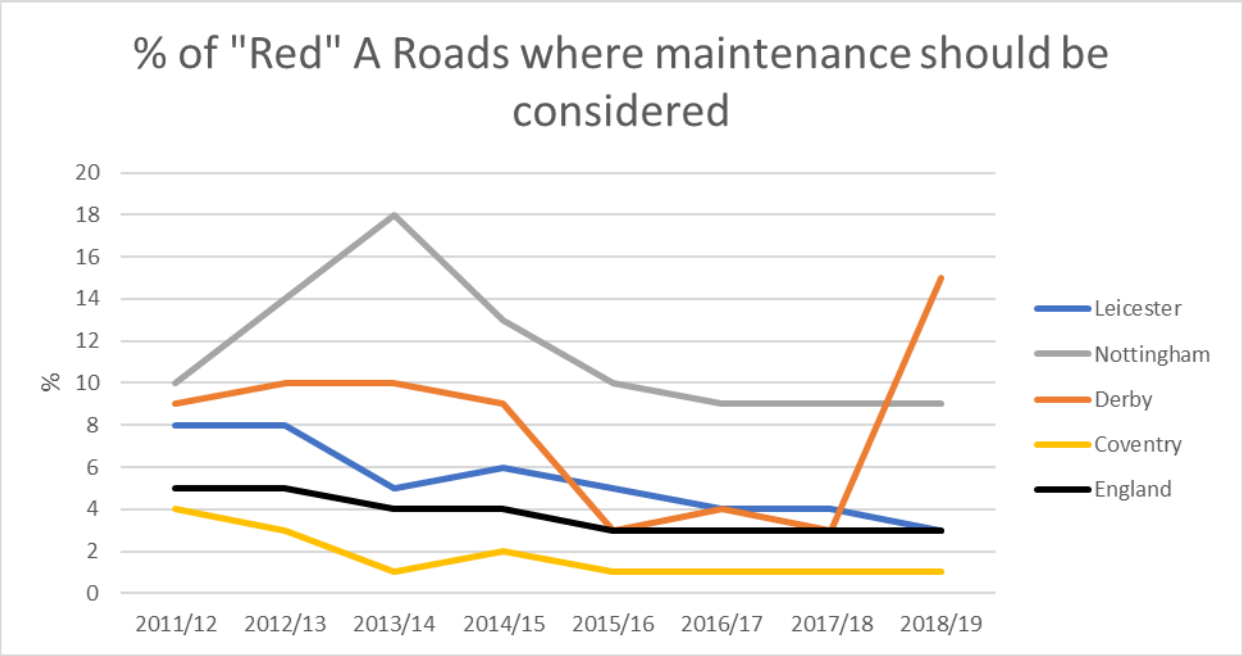
Figure 52: How much spent on resurfacing and fixing potholed roads in each year since 2009/10



Classification	GREEN – Generally good condition	AMBER – Plan investigation soon	RED – Plan maintenance soon
A roads	72.4% (70.9%)	24.4% (25.2%)	3.2% (3.9%)
B roads	65.4% (57.8%)	31.7% (35.4%)	2.9% (6.8%)
C roads	78.4% (71.3%)	19.2% (25.4%)	2.4% (3.3%)

Table 7: Leicester Road Condition 2018/19 (2016/17 in brackets)

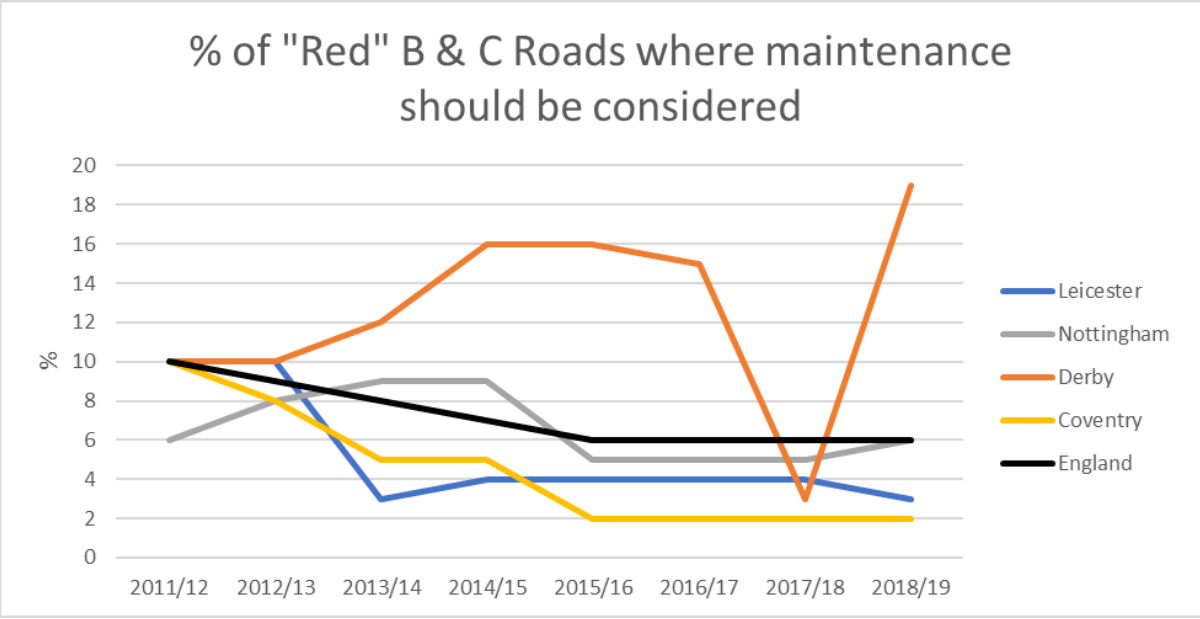
Figure 53: % of Red A Roads where maintenance should be considered



Notes: Nottingham's high results in 2012/13 and 2013/14 are noted as possibly being due to problems with the SCANNER system. In 2018/19 Derby used their own alternative to the SCANNER system.

Source: DfT file rdc0120.ods

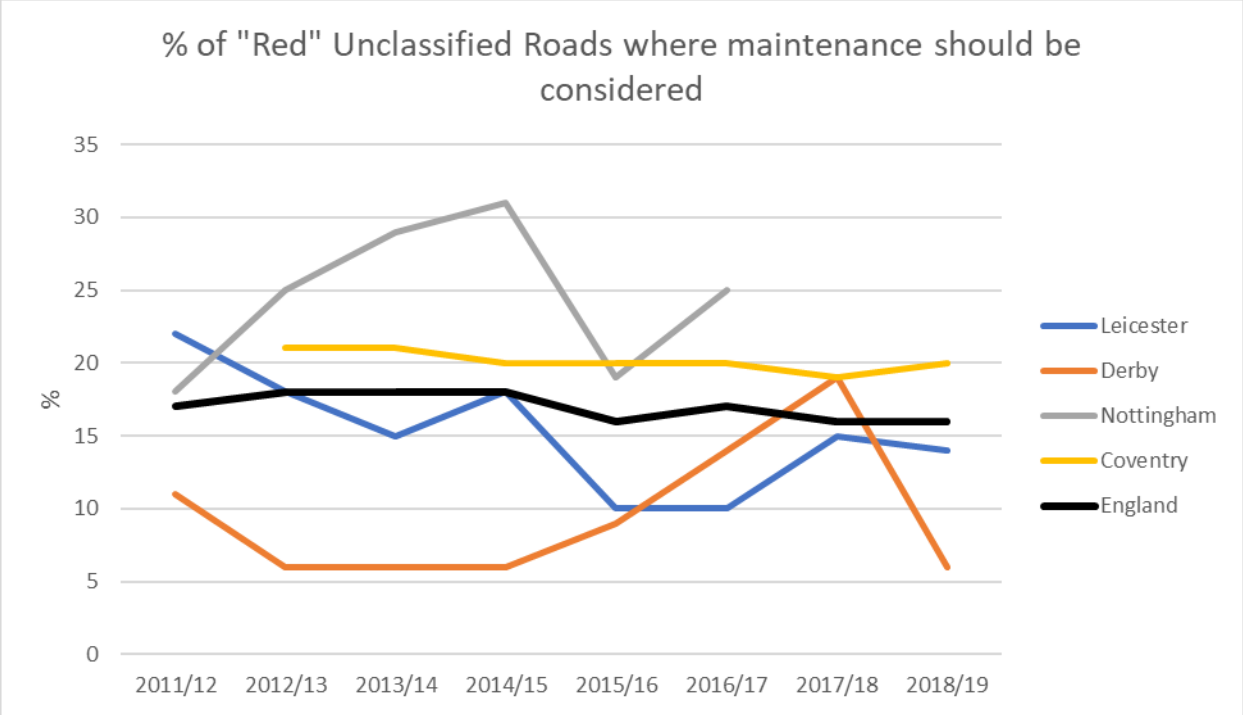
Figure 54: % of red B and C Roads where maintenance should be considered.



Notes: Nottingham's high results in 2012/13 and 2013/14 are noted as possibly being due to problems with the SCANNER system. In 2018/19 Derby used their own alternative to the SCANNER system.

Source: DfT file rdc0120.ods

Figure 55: % of Red Unclassified Roads where maintenance should be considered



- Nottingham figures absent for 2017/18 and 2018/19, as are Coventry's for 2011/12

A COVID-19 Transport Recovery Plan[63] has been published (May 2020). Key facts:

- Bus patronage fell to around 17% of normal levels according to bus operators.
- Traffic levels fell to about 50% of its previous volumes with NO_2 emissions reducing by a similar amount.
- Walking and cycling significantly increased during lockdown, doubling in some areas, and the pop-up cycle routes proved popular
- Continued flexible working arrangements including homeworking can potentially reduce congestion, particularly during peak travel periods.

Surveys show that there is a strong majority in favour of a 'green' recovery, with a substantial transport element that emphasises active travel and zero emission vehicles[64].

4.19 Summary of COVID 19 Implications

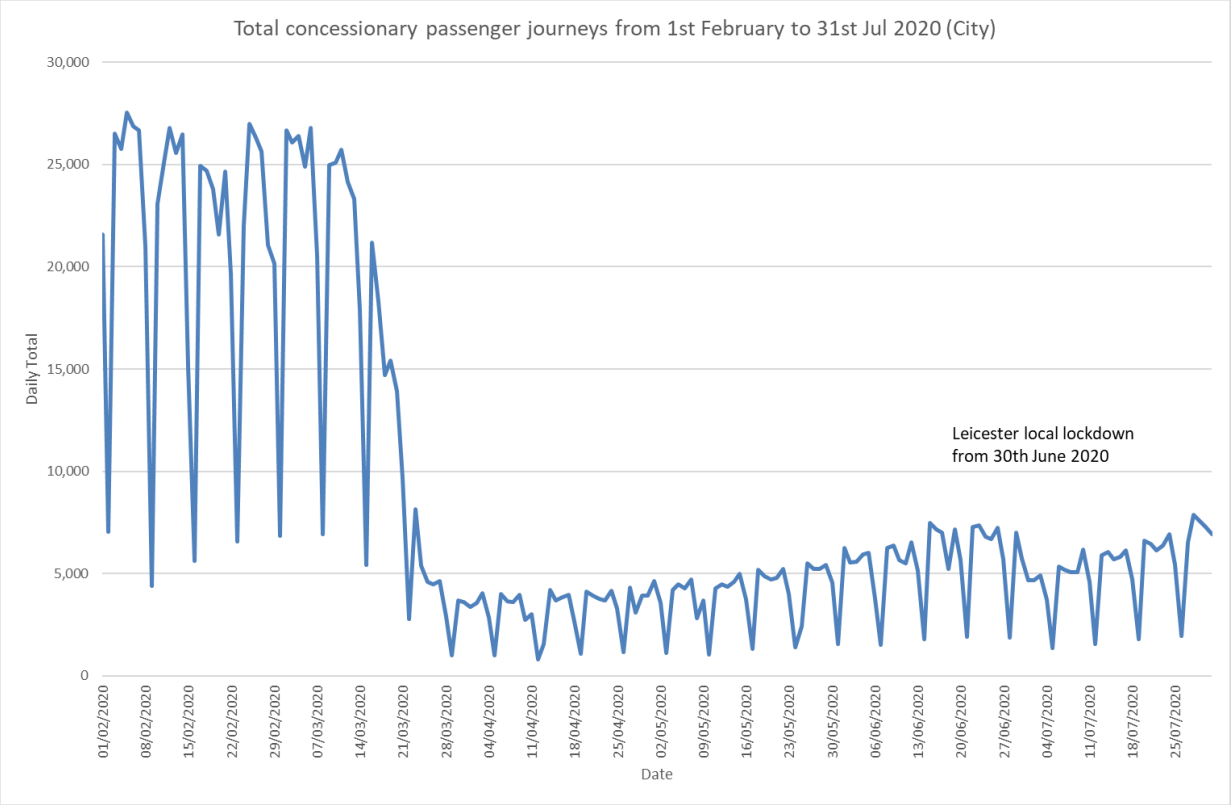
- General vehicular traffic's continuous, gradual return to pre-lockdown COVID-19 levels dented by local lockdown restrictions, but now back to pre-local lockdown levels in places (Spring 2021).
- City centre car parking activity is now at around 45-60% of pre-lockdown levels, with strong growth since the April 2021 retail re-opening.
- Bus passenger activity has returned to around 75% of pre-covid activity, reaching 80-90% at times.
- Rail station activity fell sharply under lockdown and is only recovering slowly. National data for the end of April 2021 saw patronage levels at 41.5% of "normal" demand.

[63] https://www.leicester.gov.uk/media/186689/covid-19-transport-recovery-plan-may-2020.pdf

[64] Brits believe a non-green Covid-19 recovery would be bad for the economy, cross-party survey reveals (edie.net)

- Cycling and Walking activity in the city centre fell markedly due to the reduction in commuter and shopping trips but has increased notably since the re-opening of retail on 12th April 2021.
- Activity in the outer areas of the city rose during lockdown (presumably for leisure and exercise purposes), particularly in the early lockdown period of good weather in April/May 2020 and cycling numbers in particular remain strong in 2021.

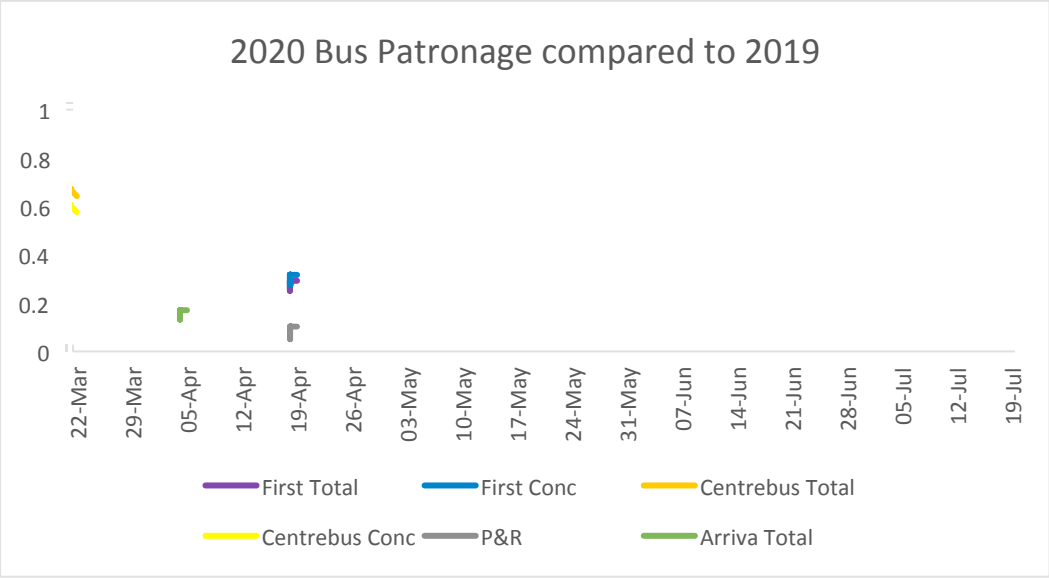
Figure 56: Passenger Transport



- Note: Graph shows totals across seven operators

All bus companies reported similar drops of 85-90% of fare paying passengers, and a slightly smaller drop (80-85% in concessionary fares).

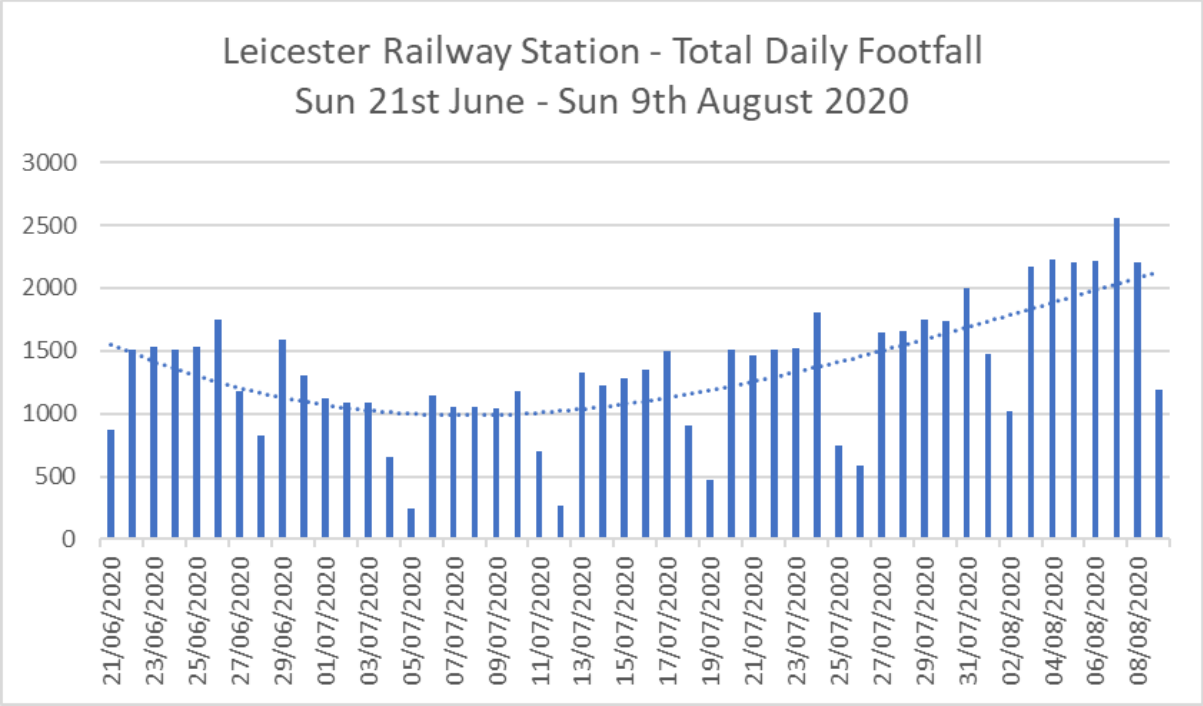
Figure 57 – 2020 Bus Patronage compared to 2019



Numbers began rising again across May & June, but when the local lockdown was introduced numbers fell again for a couple of weeks before starting to recover again (but still at 10-40% of normal levels).

Railway station footfall shows a similar fall and rise under the local COVID-19 lockdown:

Figure 58: Leicester Railway Station – Total Daily footfall



Sat 1st Aug (1,500) was double the previous Saturday (750), and Sat 8th was nearly 50% higher again at 2,200.

Figure 59: Walking – Indexes

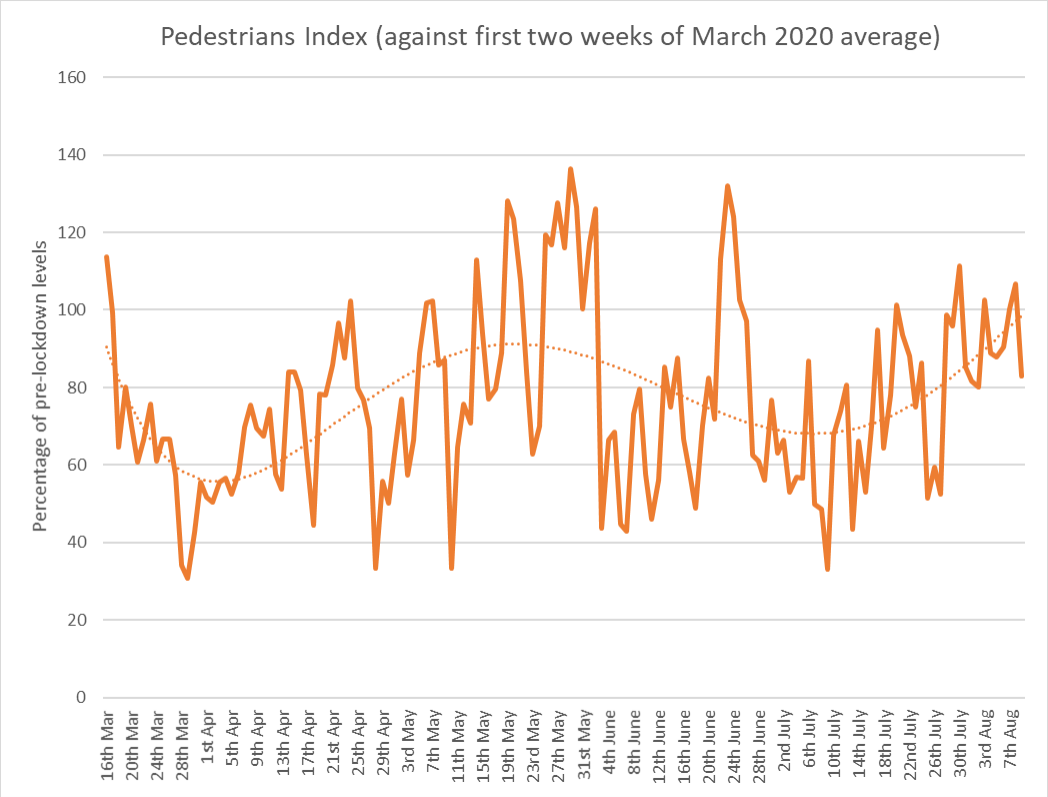


Figure 60: Cyclist Index End of nice weather on 3rd June had a notable impact.

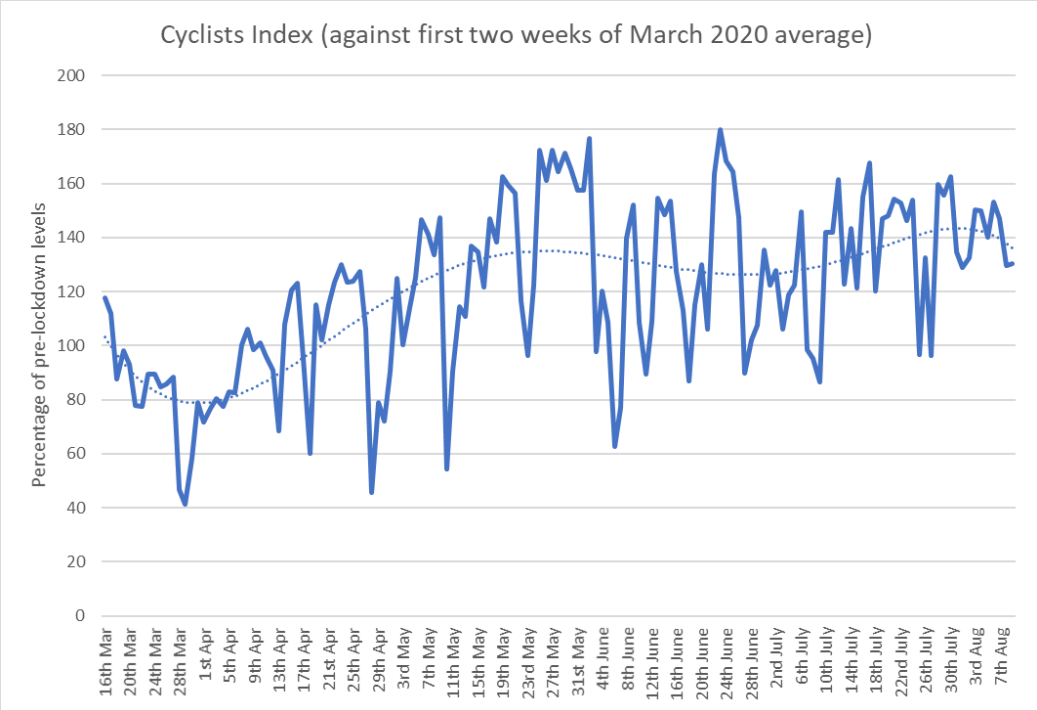


Figure 61: Cycling & Walking – Daily Totals, 2019 and 2020

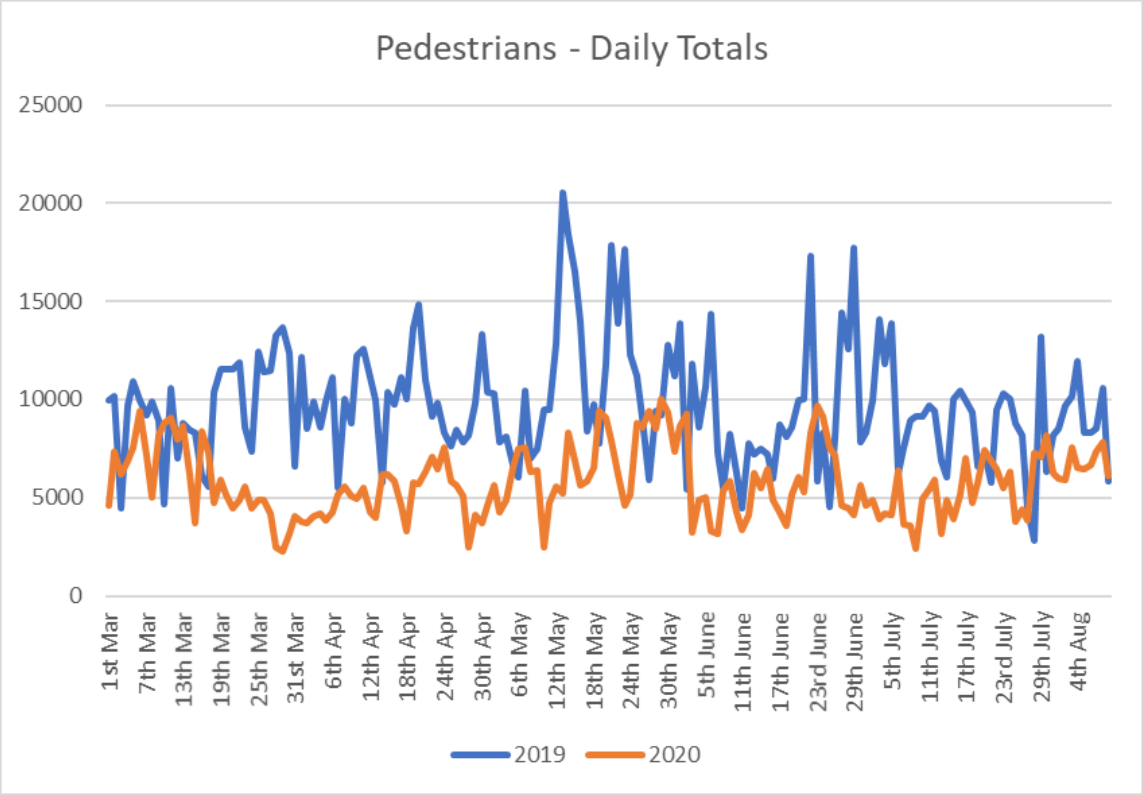


Figure 62: Larger falls in commuter pedestrians outweigh gains in leisure walks

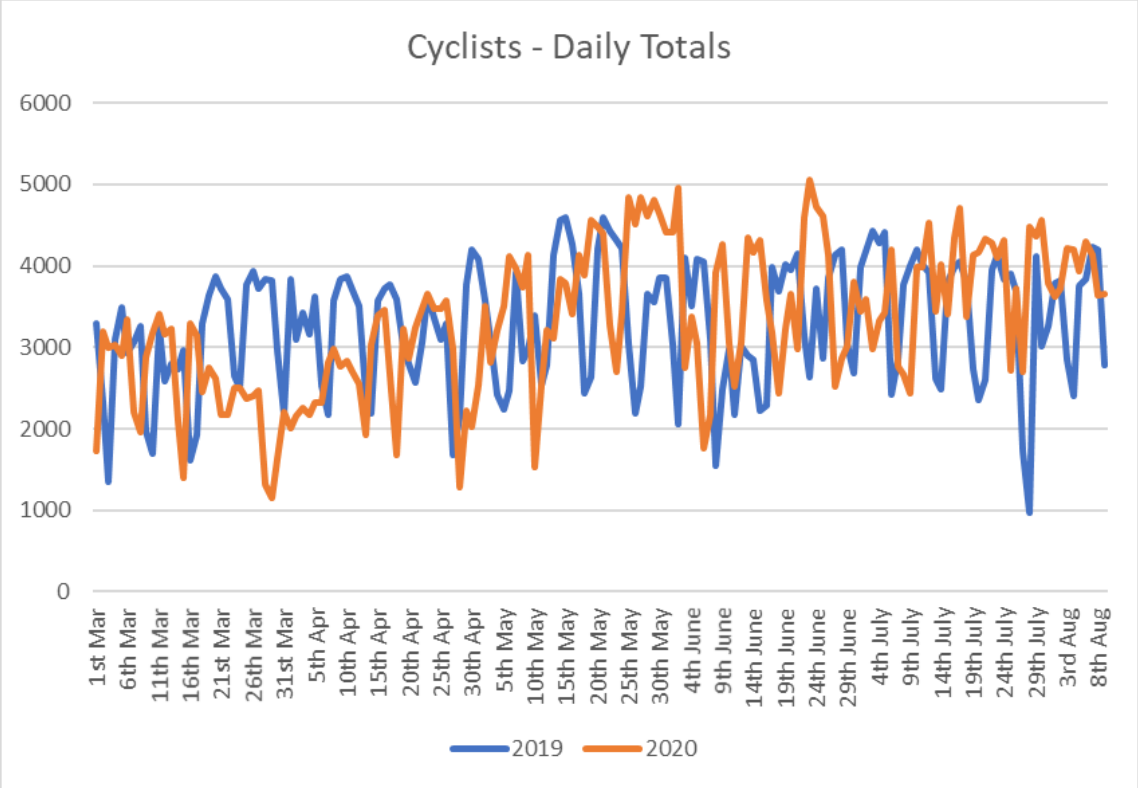
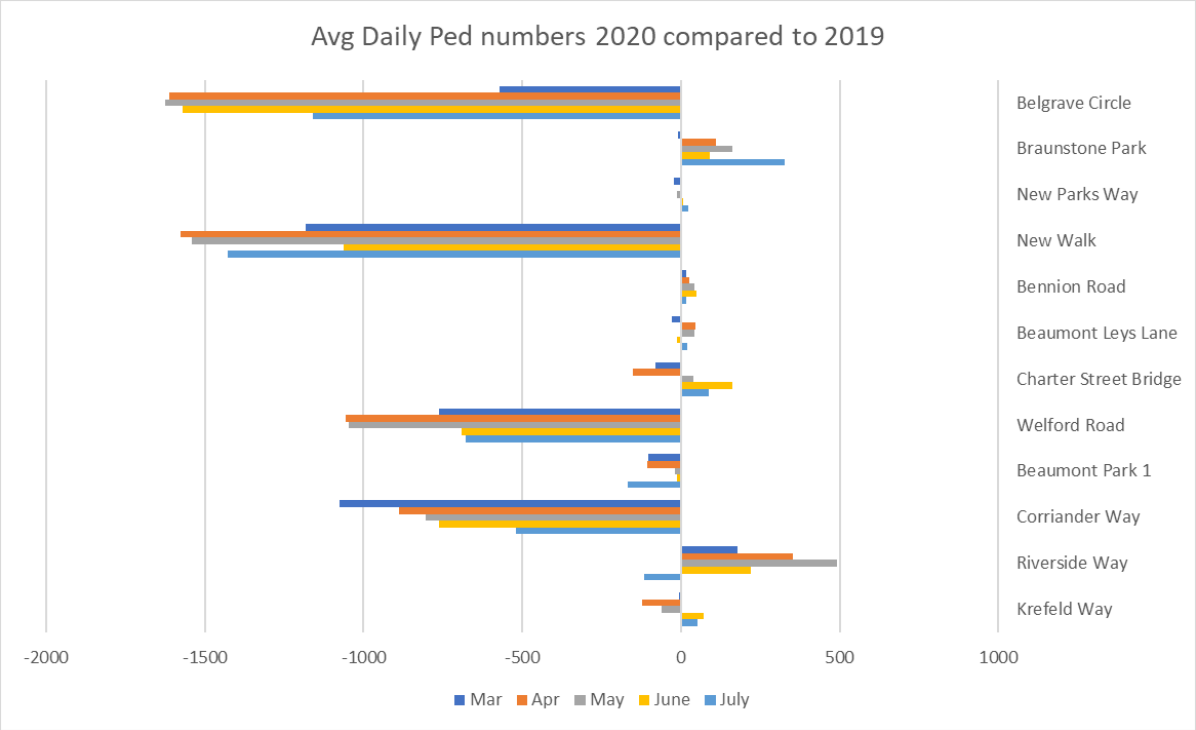
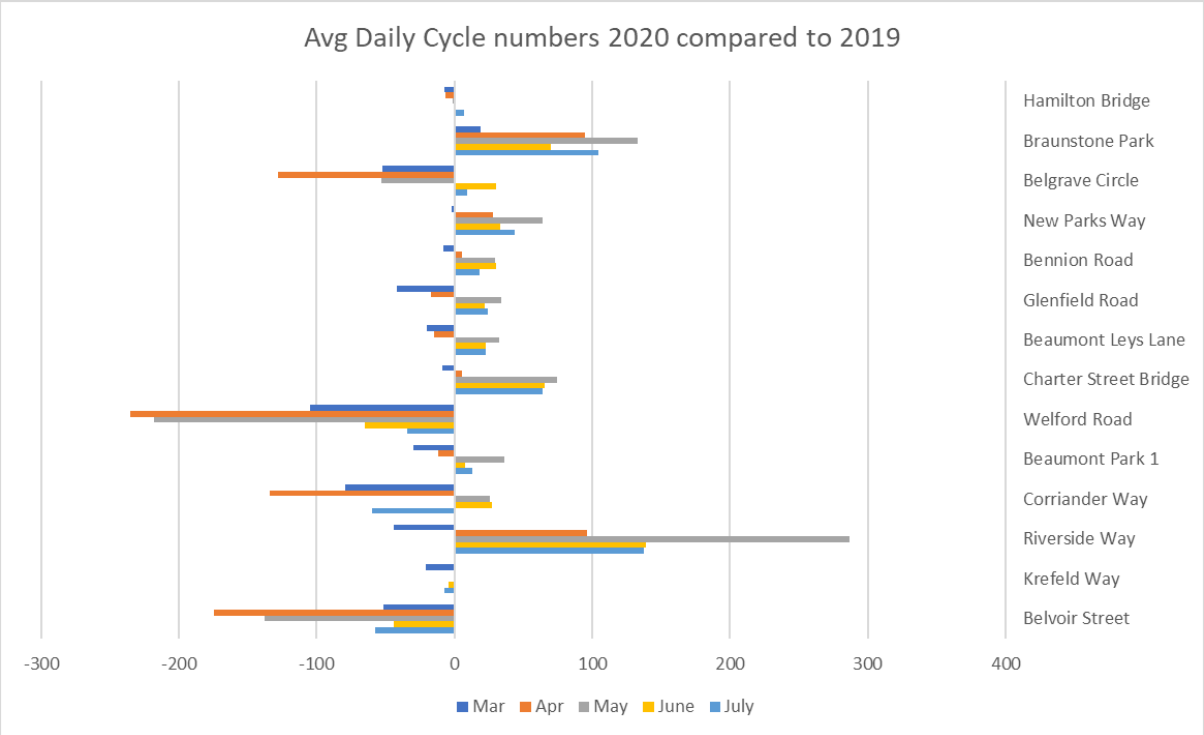


Figure 63: Walking – Site breakdown, 2019 compared to 2020, Pedestrians



Most major declines are in the city centre, with growth in the outer, non-commuter route areas.

Figure 64: Cycling & Walking – Site breakdown, 2019 compared to 2020, Cyclists



Most major declines are in the city centre, with growth in the outer, non-commuter route areas.

Pop Up Cycle Lanes –

Figure 65- Pop Up Cycle Lanes – Cyclist 12hr totals

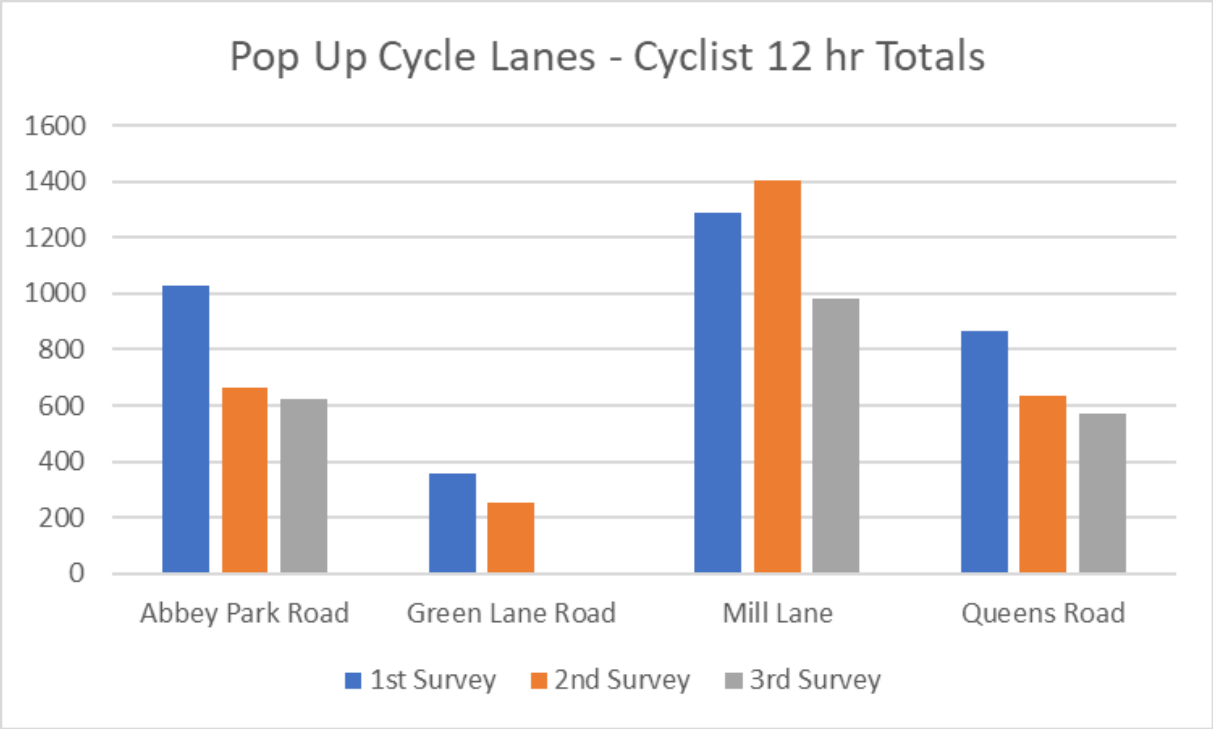
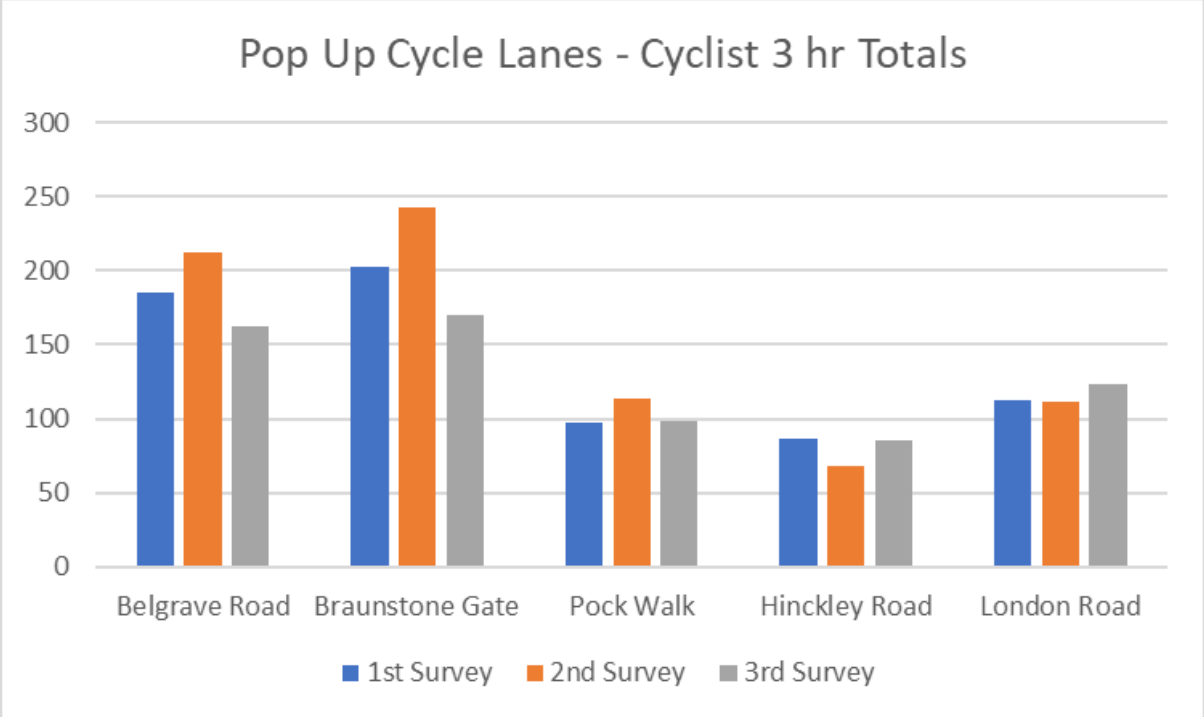


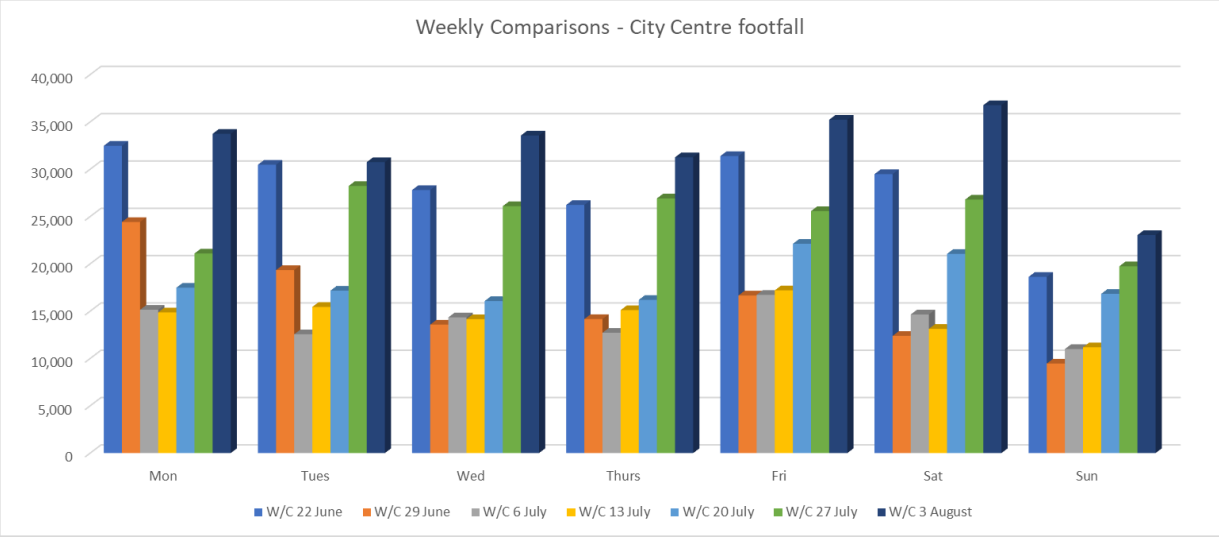
Figure 66 – Pop Up Cycle Lanes – Cyclist 3hr totals



- The 1st surveys were before the scheme went in, with the exception of Abbey Park Road, which was the very first scheme and went in two days before the 1st survey.
- 2nd surveys were done at the end of June, except for Abbey Park Road & Queens Road which were done 4th & 5th July, when the spell of good weather had broken and it was raining heavily.
- All of the third surveys (and the second Green Lane Road survey) were on 9th & 10th July (Thurs 9th was dull but dry, Friday 10th had a wet start).
- Some surveys were for 12 hours (7am-7pm), others for 3 hours (8-11am for Hinckley Road & London Road and 3-6pm for Belgrave Road, Braunstone Gate & Pocklingtons Walk). These have been shown separately to avoid misrepresenting the relative activity levels at each site.
- Results from the next set of surveys at the end of July will hopefully have better results as the weather was much better.

Generally, the pressures brought about through COVID-19 on city centre retailing and other employment uses together with a developing understanding of how to improve mobility in dense city centres provides a significant opportunity in Leicester. A number of cities are looking at how they can create 10/15 minute neighbourhoods through improved cycling and walking connections[65].

Figure 67: City centre activity



- Taken from sensors on the High Street and Humberstone Gate West.
- Similar pattern again to the traffic and rail, immediate reaction to the local lockdown, relaxing over time.
- Average counts in February were 47,600 for Mon-Fri, 52,000 for Saturday & 48,600 for Sunday.

[65] https://www.highstreetstaskforce.org.uk/resources/details/?id=74e8f708-38d2-4ade-a22c-76754e911818

4.20 What this means for LTP4

- As Leicester has a low car ownership this provides both an opportunity for and a reliance on public transport and other modes of travel
- Leicester does experience congestion problems and the LTP needs to implement schemes that can help manage private car travel and reduce congestion at peak times as well as for example relieving existing network pinch points.
- The Accessibility Assessment has highlighted that there are certain areas of the city that are less well connected. The LTP proposals provide the opportunity to improve accessibility through connected commuter corridors, provision of a good local bus network, connected walking and cycling networks and demand management measures such as the Workplace Parking Levy (through the provision of a secure source of funding to implement future sustainable transport schemes) and parking management co-ordination.
- Rail patronage is gradually increasing again and the LTP4 needs to consider how it can encourage further growth of rail services and to ensure that there are high quality travel connections.
- LTP4 should consider the development of a mass transit public transport scheme. Bus travel provides can provide an affordable means of travel and the services are important for those who do not have access to a car. A new mass public transit scheme can improve the quality and reliability of a public transport system.
- The LTP should seek to further to improve walking and cycling opportunities to reduce the demand of vehicles using the highway network, for example by creating more safe, attractive active travel environments.

5. Urban Development: Housing and Employment Growth

5.1 Where future growth will be and the levels of growth

The Strategic Growth Plan (2018) sets out the aspirations for delivering growth in the Leicester and Leicestershire Housing Market Area (HMA). It sets out, in broad terms, the amount and location of future growth (housing, economic, infrastructure) that the Leicester and Leicestershire HMA (Housing Market Area) will be expecting to accommodate until 2050.

In accordance with the Spatial Strategy (Policy SL01), the Draft Local Plan states that provision needs to be made for a minimum of 29,104 dwellings during the plan period 2019 - 2036 (1,712 dwellings per year) (see Table 8). The Local Plan will seek to deliver this through a variety of options in accordance with paragraph 59 of the NPPF. This includes existing commitments; the allocation of housing sites including strategic sites; capacity within the Central Development Area; windfall allowance; and the distribution of the remainder of the housing need within the HMA to be agreed in the Statement of Common Ground (SoCG).

The remainder of the need of 7,742 homes (27%) will be met by the HMA partners under Duty to Cooperate. The unmet need declared by the City Council may be subject to change and this will be reflected in the Statement of Common Ground (SoCG) as the Local Plan progresses.

However, it was announced in December 2020 that the 20 largest cities in the UK (including Leicester) have been asked by the Government to increase their housing targets by 35%.[66] The distribution of the additional growth with neighbouring authorities is still to be agreed.

The provision of housing in the future is critical if the sub region is to continue to attract the inward investment needed to deliver economic growth. In order for development within these areas to come forward successfully, the provision of infrastructure to enable sites to be accessed, as well as to serve the existing and resulting communities, is very important. The infrastructure includes highways and other transport improvements, education facilities and public realm.

The plan is for the continued growth of Leicester, regenerating its central areas and complementing this with strategic extensions beyond the established urban area. These sites are:

- City centre designated as a strategic location for housing. This creates greater opportunity for a range of housing densities.
- The development of strategic housing sites at the former Western Park Golf Course; land east of Ashton Green; land north of the A46 bypass; land west of Anstey Lane and the General Hospital site will be brought forward so they can provide a readily developable alternative location for new housing. Housing development at Ashton Green will continue to be built out during the Plan period.
- To build on Leicester's economic growth and competitiveness, a priority will be to ensure a balanced supply of employment land premises is available to meet the needs of local and new business to attract inward investment.

[66] https://www.gov.uk/government/consultations/changes-to-the-current-planning-system/outcome/government-response-to-the-local-housing-need-proposals-in-changes-to-the-current-planning-system

- The development of strategic employment sites at the former Western Park Golf Course; east of Ashton Green; and the Beaumont Park site will be brought forward so that they can provide a readily developable alternative location for new employment. Development at the Ashton Green employment location will continue to be built out during the Plan period.
- The city centre will be the preferred location for retail, cultural and leisure users that serve the city and the wider Leicester Urban Area, and for professional offices.

To the North and West of the City major housing growth through sustainable urban extensions is underway with an expected 30,000 homes to be built over the next 10-15 years. Some of this lies within the city at Ashton Green to the North but is mostly within the adjoining districts of Charnwood and Blaby to the North and West. To continue and consolidate growth of the local economy across all sectors it will be necessary to ensure that the sub-regional population has good access to the city centre and key employment hubs which does not necessarily rely on use of the private car. Transport connections to these areas are currently weak and will require significant investment.

Our planned growth must be supported by infrastructure and facilities which are deliverable at the appropriate time and in the right locations. We will need to provide public and sustainable transport infrastructure that will support attractive means of access to jobs, shops and services from residents who live within the City and also those travelling from outside.

5.2 City Centre

The city centre residential development sector is also strong. The number of homes in the heart of the city has doubled from 2011 to around 12,000 in 2018 and there is a strong pipeline of housing schemes, including more recent Private Rented Sector (PRS) housing developments.

The draft Local Plan identifies that the city centre will be the preferred location for retail, cultural and leisure uses that serve the city and the wider Leicester Urban Area, and for professional offices.

Major housing growth is planned for the Central Development Area (CDA) with at least 4,905 new homes by 2036[67] which is around 16% of the planned housing provision. This area will make a significant contribution to addressing the city's future housing needs. Much of the development activity needed to enable restructuring of the economy will occur in this area within and around the city centre, within the Central Development Area.

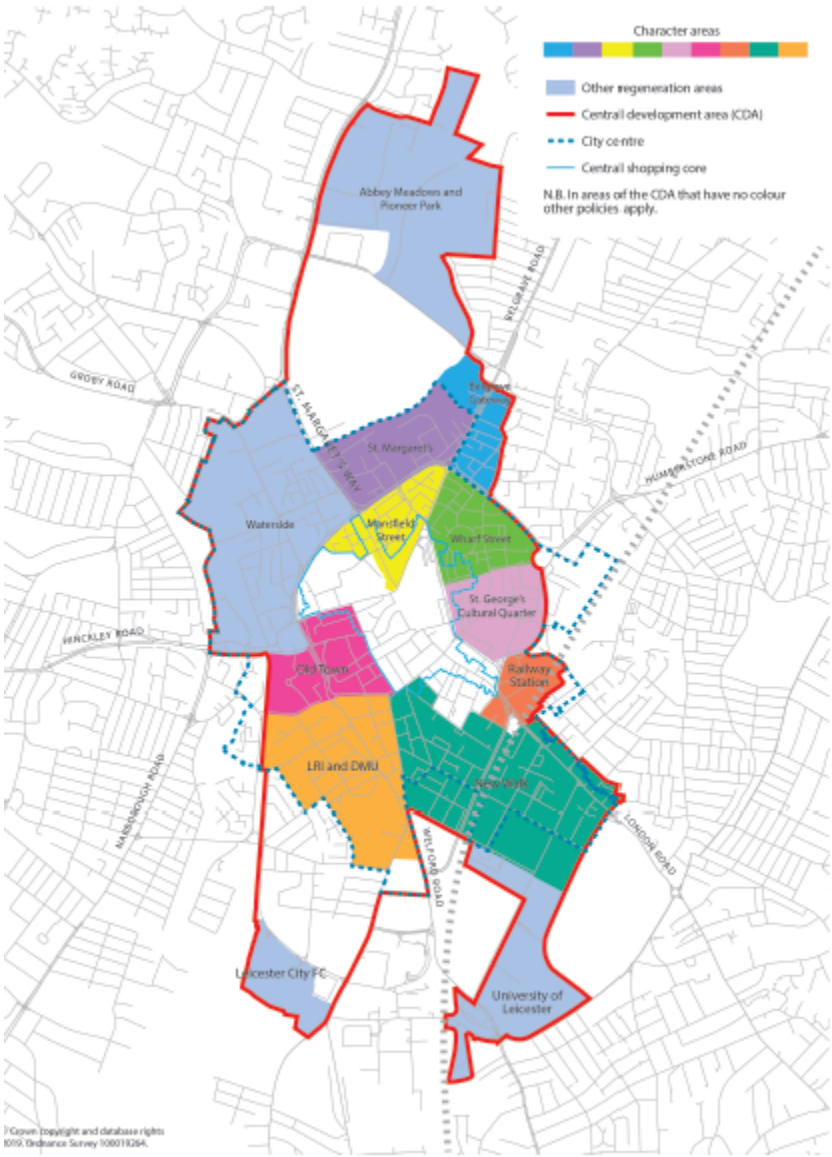
The vision for 'the railway station' is to become the foremost office destination within the city centre. This will be achieved by allocating land around Campbell Street sorting office and the Station car park for a comprehensive major office development, providing a minimum of 20,000 sqm of new offices. Development will also be expected to:

- Provide improvements to this primary city gateway;
- Strengthen pedestrian connectivity from the station to the City centre, improve the infrastructure and transport hub and create quality public realm.

[67] https://consultations.leicester.gov.uk/sec/draft-local-plan/supporting_documents/Draft%20Local%20Plan.pdf

5.3 Central Development Area (and Character Areas)

Figure 68: Leicester's Central Development Area



Through comprehensive assessment of the Central Development Area, the City Council has divided the area into 13 distinct areas, including 9 Character Areas and 4 other Regeneration Areas. These are tailored to the individual context of each area and based on the area's defining characteristics. These are:

5.3.1 Railway Station

The vision for 'the railway station' is to become the foremost office destination within the City centre. This will be achieved by allocating land around Campbell Street sorting office and the Station car park for a comprehensive major office development, providing a minimum of 20,000 sqm of new offices.

Development will also be expected to:

- Provide improvements to this primary city gateway;

- Strengthen pedestrian connectivity from the station to the City centre, improve the infrastructure and transport hub and create quality public realm; and
- Allow a mix of uses which are ancillary, to support the office development, such as hotel, food & drink and leisure.

5.3.2 Mansfield Street

The vision for 'Mansfield Street' is to facilitate residential led regeneration which better integrates the area into the economic and cultural diversity of the city centre. This will be achieved by ensuring predominantly retail uses within the central shopping area, predominantly commercial and industrial uses to the east of Abbey Street and residential uses in the area between Darker Street and Abbey Street.
Development will also be expected to:

- Maintain the ongoing provision of a mix of uses in the area; and
- Deliver a new bus route from the new Haymarket bus station through to Mansfield
- Street and onto St Peter's Lane alongside Highcross.

5.3.3 St. Margaret's

The vision for 'St. Margaret's' is for a mixed-use regeneration area based around residential development. The area's redevelopment will need a comprehensive approach, requiring a masterplan, to set out a deliverable, cohesive vision. There are significant existing industrial uses which means that the phasing and delivery of any new development will need to be carefully considered. Also due to the nature of the area leisure uses and offices will also be acceptable.
Development will also be expected to:

- Continue to improve connectivity and footfall to Abbey Park from the city centre;
- Achieve creative reuse of underused industrial architecture and heritage assets, including the Corah site; and
- Improve connectivity with Belgrave Road /Golden Mile.

5.3.4 Wharf Street

The vision for 'Wharf Street' is to become a residential neighbourhood based around a coordinated and comprehensive approach which enables the creation of an attractive, successful and sustainable place with a distinctive identity which will become somewhere that is a great place to live.
Development will also be expected to:

- Complement the already emerging residential neighbourhood including the existing mixed-use development;
- Manage the increased demand for buy to let type residential accommodation; and
- To make adequate provision for new public realm infrastructure where feasible.

5.3.5 Belgrave Gateway

The vision for 'Belgrave Gateway' is for an area that includes residential regeneration which is carefully managed. Development which supports existing land uses will also be encouraged. This includes the existing Leicester College Campus, the defined employment area in the northern part fronting Belgrave Gate, and the existing residential area to the south.
Development will also be expected to:

- Facilitate regeneration of the existing frontage along both sides of Belgrave Gate to improve and encourage movement through the area and in turn improve connectivity with the adjacent Belgrave Road /Golden Mile;
- Enhance this important gateway and its links to the City centre; and
- Continue to improve connectivity and footfall, to Abbey Park from the City centre.

5.3.6 Leicester Royal Infirmary and DMU

The vision for 'Leicester Royal Infirmary and De Montfort University' is for an area based on an evolutionary approach to new development supports allows the important existing developments in the area and new significant investment in upgraded health provision. The City Council will work with De Montfort University, Leicester Royal Infirmary & Leicester Tigers Rugby Club to deliver their long-term development strategies. Any new development will need to be sympathetic to the existing land uses and ensure that a mix of uses are retained in the area. Development will also be expected to improve connectivity between the west end of Leicester and the east of the city to enhance movement to the City centre.

5.3.7 St. George's Cultural Quarter

The vision for 'St Georges Cultural Quarter' is for a mixed-use regeneration area which preserves its distinct heritage character, whilst continuing to enhance the residential, cultural & employment opportunities within the area.

This will be achieved by promoting the area as a destination, providing a vibrant community, combining a mix of cultural facilities, leisure, the arts, urban living and creative sector business / jobs. Any new residential development should be 'high quality living environments' which do not compromise the provision of offices, workspaces and leisure uses. Further development of key leisure venues such as Curve and Phoenix will also be promoted providing they meet the key aims for the area.

Within this area there will be allocated a comprehensive office development providing a minimum of 20,000sqm of office floorspace.

Development will also be expected to:

- Encourage new companies into the area;
- Assist to make the area a lively and creative environment, appealing to artists and creative companies, for creative workspace and start-up companies (mixed use);
- Promote and enhance the area's vibrant cultural diversity and its rich cultural offering of the arts; and
- Promote more footfall through, linking through the public spaces of Orton Square and St George's Churchyard.

5.3.8 Old Town

The old town is the city's historical core and contains unique heritage including the Castle Mott, Cathedral and latterly the grave & Visitor Centre for King Richard III. It has the city's highest concentration of important heritage and architectural and archaeological assets, built up over several centuries, which it is intended to conserve and enhance. This area is also historically the city's legal quarter which means it has a commercial attraction for small offices.

The vision therefore for 'Old Town' is based around the protection of the existing heritage assets whilst allowing conservation led development where appropriate. This will be achieved by allowing only high-quality residential development, by maintaining & developing high quality small offices Class B1(a) offices between 100 and 1,000 sqm and enabling further tourism and economic growth, with due consideration of the significance of this part of the city.

5.3.9 New Walk

The vision for 'New Walk' is for an area which protects the existing heritage assets but also allows for conservation led development based primarily around small-scale office

development. Residential development (Class C3) and student accommodation (Sui Generis) will be acceptable in the form of new development on existing vacant plots. When planning permission is required, only good quality existing offices will be retained wherever their quality permits (i.e. unless they are unsuitable for modern office uses). All new development or conversions will be expected to help create a high-quality environment in which to live and work.

5.3.10 Other Regeneration Areas:

a) Abbey Meadows and Pioneer Park regeneration area

This includes developing residential communities, continued development of the Science and Innovation Park, retaining land for the provision of use Class B1(c), B2 and B8 uses and within the area of the National Space Centre (NSC) and Abbey Pumping Station will be supported which promotes the role for tourism and education including D1 (except for places for worship).

b) Waterside

The vision is for the creation of a thriving urban neighbourhood, development of new offices alongside other mixed uses, community uses and accommodating demand for school places.

c) University of Leicester

Within the area of the University of Leicester opportunities to consolidate and improve the existing University of Leicester operational campus (D1) and to create new student accommodation.

d) Leicester City Football Club (LCFC)

Within the LCFC regeneration area, opportunities to consolidate and improve the Stadium and associated facilities.

5.4 Employment Land

To build on Leicester's economic growth and competitiveness, a priority will be to ensure a balanced supply of employment land and premises is available to meet the needs of local and new business and to attract inward investment. Employment land and workspaces also play a vital role in a local economy by accommodating enterprises that create jobs and deliver goods and services to consumers and businesses. Table 8 outlines the proposed size and location of strategic employment sites.

Site ref	Address	Size (ha)
New strategic employment sites		
Site 702	Western Park Golf Course	20.5 ha
Site 464	Beaumont Park	8.8 ha
Site 579	East of Ashton Green	4.9 ha
Small sites		
Site 687	Eastern part of Thurcaston Road/Hadrian Road open space	2.7ha
Site 1040	Mountain Road (existing 2006 CLLP Employment Proposal)	2.1 ha
Existing Ashton Green consent		
n/a	East of Samworth's Bradgate Bakery	5ha
Total	**44ha**	

Table 8: Proposed Employment Sites[68]

The delivery of offices needs to be the top priority for the city centre. The Strategic Growth Plan also proposes that the city should develop its role as the 'central city' supporting the market towns and rural areas around it. It recognises that more jobs, leisure, arts, culture and entertainment facilities are provided within the city centre. Leicester's city centre is the focus for commerce, retailing, culture, leisure and entertainment for the city and county. A vibrant and thriving city centre is essential for growth in the city's economy and is at the heart of the Leicester Urban Area and the wider Leicestershire Housing Market Area (HMA).

5.5 Student Accommodation

Leicester is home to two major universities – De Montfort University (DMU) and the University of Leicester (UoL). The universities and their students have a positive impact on the local economy, boosting Leicester's national and international profile, providing local companies with skilled graduates and seasonal/ part-time workers as well as purchasing local goods and services.

The main facilities that will be accessed by students, (for example temporary work, shops, bars, public transport interchanges) are generally in the city centre, and at the two main university campuses. To encourage sustainable travel, new schemes should be located

[68] https://consultations.leicester.gov.uk/sec/draft-local-plan/supporting_documents/Draft%20Local%20Plan.pdf

within walking distance of the city centre and at least one of the campuses, or on a major public transport route which accesses these locations (a walkable neighbourhood typically has a range of facilities within a 10-minute walk, around 800m). However, this is only a general guide and has potential to be extended where good quality pedestrian or cycle routes are available.

5.6 Supporting Future Growth

In 2015 a study[69] by Jacobs for the Leicester and Leicestershire Strategic Planning Group (SPG) was completed. This noted that based upon the existing patterns of growth that the transport impacts to 2031 could be mitigated. The report suggested that one of the biggest challenges was likely to be within the City where a consequence of high population growth in the centre could see increased travel including a demand for longer trips to work and services outside the centre. The main impacts noted were increased congestion on the radial and orbital corridors (primarily in the centre, north, west and south west of the City) potentially leading to the displacement of traffic onto less appropriate or desirable routes. The report recommended that further work should be undertaken to confirm the extent to which the impacts of planned growth can successfully be mitigated, including as necessary through land use strategies that seek to minimise the outflow of City residents to jobs elsewhere in the HMA and through strategies to increase opportunities for non-car sustainable travel on the primary orbital and radial routes.

This report led to two studies being undertaken in 2016 by EAE Consultancy looking at the impact from strategic development that could occur in the North, East, South or West and the centre of the city.

The first study[70] looked at the multimodal accessibility to jobs and the second[8] looked at the highways impact. This found that:

- Car travel provides the access for the greatest number of jobs.
- Development to the North and West of the City benefit from good connectivity and accessibility using the existing highways infrastructure. Access to Development to the East are more difficult due to more limited orbital connectivity in that side of the City.
- Cycling could provide the greatest sustainable opportunity for accessing new developments. In particular for development in the centre of Leicester, cycling provides better accessibility due to not being restricted by routes or timetables.
- Public Transport provides good accessibility to the centre of Leicester. However, services would need to be enhanced to support new developments in the West, North and East of the city. It would also be important to ensure that providing cross city and orbital movements in order to link population, jobs, and services across the city.
- The Outer Ring Road, the A46 and the Great Central Rail may form barriers to walkers and cyclists unless appropriate interventions can be delivered.

The second study highlighted the potential increase in traffic on the corridors in the sector of the City in which development was delivered as well as highlighting the increased risk of less desirable routing through the existing settlements on the borders of Leicester. Development in the centre primarily impacted the central ring road and corridors to the North, West and South West of the City.

[69] 2015 SGP testing to 2031' and the report to the SGP board on 16 July 2015

[70] Accessibility to jobs and homes, 08 Accessibility to jobs and workers v4.1.pdf

At the time of undertaking the Evidence Base review for LTP4 (March 2021), a draft Transport Infrastructure Assessment has been published relating to the transport requirements for the City's Local Plan. Detailed transport modelling is expected to be undertaken in 2021 to test the impact of the proposed growth on the city's transport and highway network.

5.7 What this means for LTP4

- Leicester's development pattern will mean that there will be a higher population density in the city centre and to the north west of Leicester. The LTP will need to ensure that there is high quality transport and active travel links to ensure good access to the city centre and employment hubs.
- The LTP will need to implement schemes to help improve network resilience of the highway network in response to increase development. This will also help to address climate change targets and air quality concerns to make Leicester an attractive place to work and support growth.
- New areas of growth towards the south and east of the Leicester urban area at the Plan period as set out in the SGP will require significant investment to improve the transport infrastructure links.

6. Environmental Issues

6.1 Climate Change

Climate change is a critical threat to people in Leicester and across the globe. The 2008 Climate Change Act, as amended, commits the UK government to deliver a 100% reduction in carbon emissions by 2050 in order to help mitigate future climate change.

Scientific evidence is now overwhelming that human activity is causing the world to heat up, and that urgent, far-reaching action is needed to prevent global heating reaching catastrophic levels. Climate change has been described as the "ultimate threat multiplier", with the potential to make other geopolitical situations a lot worse; risking dangerous increases in social tensions and resultant upheaval. For these reasons, Leicester City Council declared a Climate Emergency in February 2019 and a Climate Emergency Strategy 2020-23 has now been adopted by the Council. It has an ambition to become carbon neutral by 2030 or sooner.

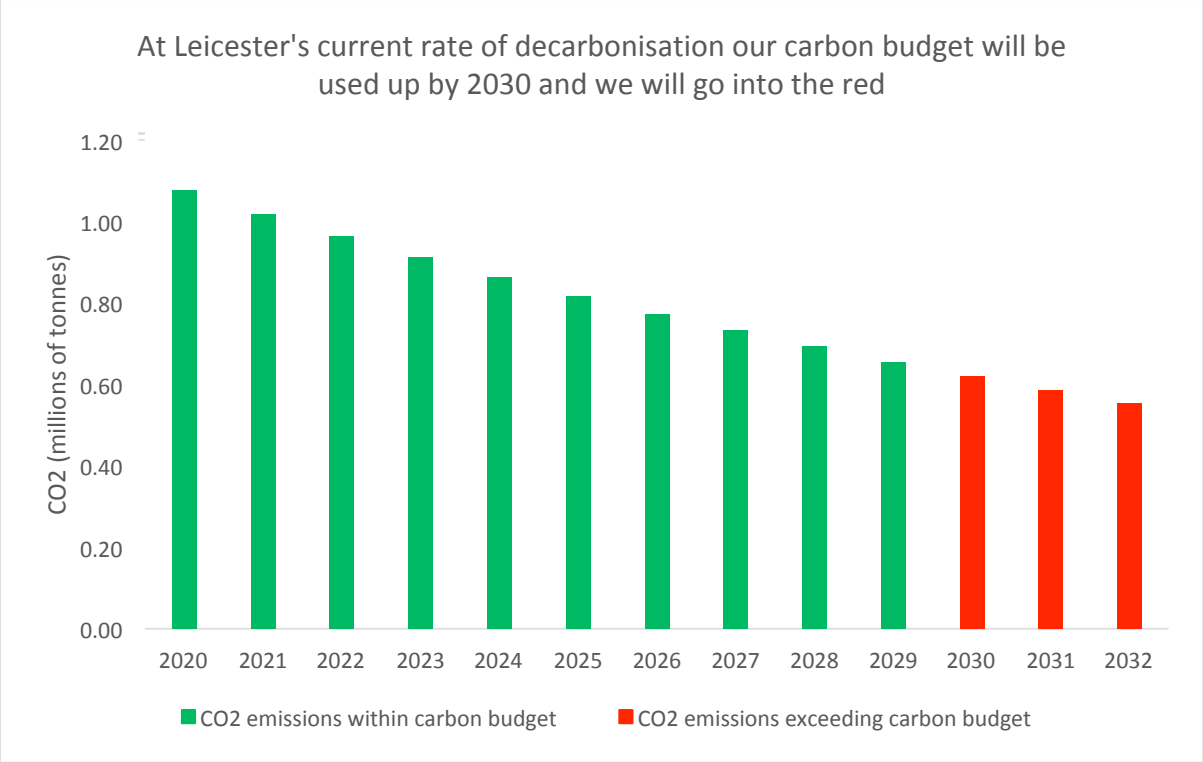
To have a chance of achieving this, it is estimated that we must limit human-made emissions of carbon dioxide (CO_2) – the main greenhouse gas – to no more than 900 gigatonnes in total[71]. This is the global 'carbon budget'.

Scientists have calculated Leicester's share of this budget to be 8.5 million tonnes of CO_2 in total [72] from our energy use in the city. On this basis, if the city's emissions continue to reduce at the current rate, this budget will be exceeded from 2030. This is illustrated in the chart below.

Figure 69: Leicester's current rate of decarbonisation carbon budget

[71] Up until the year 2100.

[72] Setting Climate Commitments for Leicester – Quantifying the implications of the United Nations Paris Agreement for Leicester. Tyndall Centre for Climate Change Research.



The city therefore needs to speed up its rate of decarbonisation in the coming years to improve the chances of its emissions being limited to within this figure.

Looking at Leicester's emissions caused by our direct energy use in the city from gas, electricity, diesel, petrol and other fuels, the most recent government figures show that collectively we were responsible for 1.3 million tonnes of CO_2 emissions[73] in 2017. This worked out at 3.7 tonnes per person, which is similar to levels in other comparable UK cities[74]. For Leicester to become carbon neutral this will need to reduce to almost zero.

25% of Leicester's CO_2 from emissions from energy use are from transport (42% from Industrial and Commercial and 33% from Domestic). Transport emissions have fallen by 11 per cent since 2005. This is a positive trend although, in common with other cities, it is a slower rate of reduction than seen with emissions from housing and business sites, which have benefitted from the 'greening' of electricity from the national grid.

It should be noted that the government figures are only an estimate, based on automated vehicle count figures from locations around the city. They may not reflect the full impact of congestion, which can add to carbon emissions by increasing journey times. Looking ahead Leicester's population is expected to grow by just over 4 per cent between 2020 and 2030 and Leicestershire's to grow by over 10 per cent in this time,[75] which could add significantly to transport demand. At the same time, ULEVs are expected to increase their market share more rapidly as technology improves, prices come down and we approach the government's proposed date of 2030 when new petrol, diesel and hybrid cars will no longer be available.

[73] The government figures only cover CO_2, which is the main greenhouse gas. However, where we refer to "carbon emissions" in other parts of this document we are including other greenhouse gases too.

[74] 2017 per capita emissions were 3.5t in Nottingham, 3.7t in Sheffield, 4.0t in Leeds and 3.2t in Bristol. Source: Department for Business, Environment and Industrial Strategy (BEIS).

[75] Source: Office for National Statistics, 25 year population projections.

Nonetheless, there are likely to remain a number of petrol and diesel vehicles on the roads by 2030 and after.

The strategy looks at how to reduce Leicester's city-wide carbon emissions and how to adapt to the expected impacts of climate change. For example, some areas of the city are at risk from flooding and this can put pressure on the vulnerable transport infrastructure. The Strategy contains an action plan to play its part in tackling climate change. For transport this includes delivering an ambitious series of programmes investing in infrastructure, services and promotion for walking and cycling, low-carbon public transport and electric 'ultra-low-emission' vehicles and charging. Also putting the Climate Emergency at the heart of our Transport Recovery Plan for the COVID-19 crisis, alongside safety and social equity, including creating 10 miles of new 'pop-up' cycle routes.

However research has identified that bus priority helps address climate change. If everyone switched just one car journey a month to bus that would mean one billion fewer car journeys in the UK, saving 2 million tonnes of CO_2 a year. [76]

6.2 Air Quality

Air pollution affects people's health. It is responsible for an increased number of adults dying from stroke, heart disease and lung cancer and for more people being admitted to hospital with breathing and circulatory problems. In 2010 there were an estimated 162 premature deaths where air pollution was a contributory factor in Leicester, or 6.6% of all adult deaths[77]. Furthermore, people in the UK are 64 times more likely to die of air pollution as those in Sweden and twice as likely than the US[78]. The estimated costs of these health impacts are £20billion every year[79].

Although air pollution affects everyone, not everyone is affected in the same way. People who live in more deprived areas are more affected than people living in less deprived areas even if they are exposed to the same levels of pollution. Those who are already in poor health are more affected by pollution than those who are healthy. Air pollution is thus an equality issue and tackling it will help to address Leicester's health inequalities.

Tackling air pollution is required by law. Leicester City Council has a duty under Part IV of the Environment Act 1995 and relevant regulations to review and assess air quality within the city. We operate a series of five automatic air quality monitoring stations. The stations measure
nitrogen dioxide and particulate matter. The monitoring stations are located in areas of high traffic density. The data from these monitoring sites help us to understand the distribution of past and current concentrations of pollutants in the air. Ongoing monitoring has shown areas in Leicester are not meeting air quality objectives. As such we have had to declare an Air Quality Management Area[80]. (Leicester is one of over 200 local authorities with a declared Air Quality Management Area)[81].

To address the issues of air pollution, Leicester City Council adopted an Air Quality Action Plan covering the period 2015 to 2026 which set a strategic approach for improving air

[76] Bus Priority Works

[77] https://www.leicester.gov.uk/media/180653/air-quality-action-plan.pdf

[78] https://www.theguardian.com/environment/2017/may/17/air-pollution-kills-more-people-in-the-uk-than-in-sweden-us-and-mexico

[79] Every breath we take: the lifelong impact of air pollution | RCP London

[80] https://www.leicester.gov.uk/media/180653/air-quality-action-plan.pdf

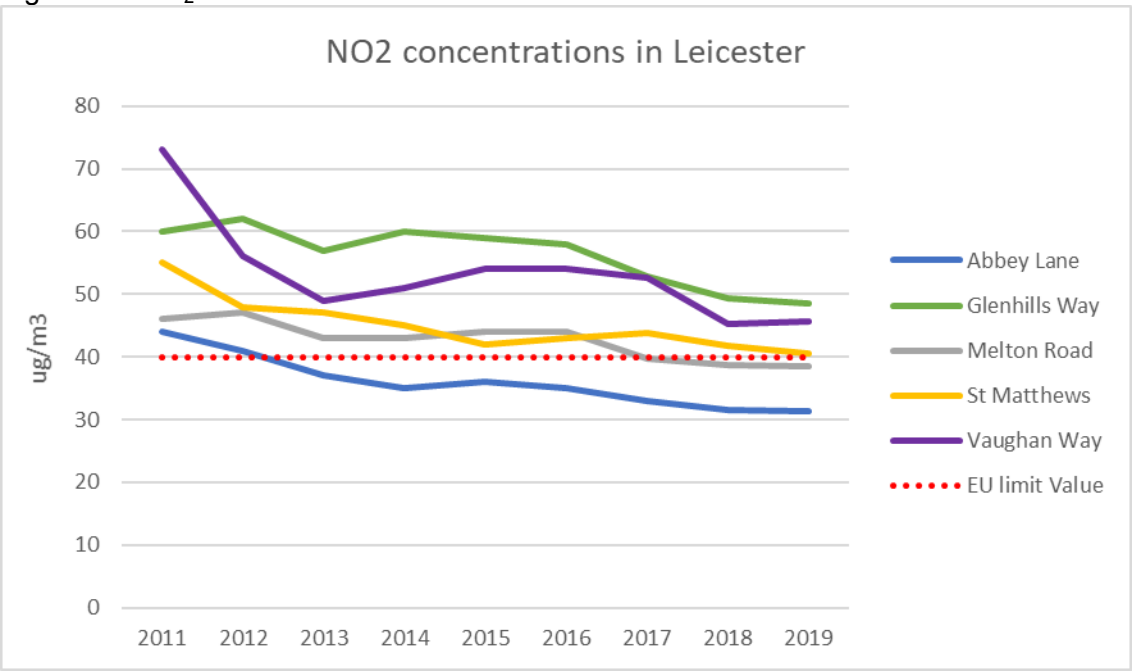
[81] https://uk-air.defra.gov.uk/aqma/

quality in Leicester. Air pollution occurs when the amount of certain pollutants exceeds recommended levels. There are a variety of different pollutants such as ozone and benzene, but the main ones of concern are nitrogen dioxide (NO_2) and fine particles ($PM_{2.5}$). The majority of this pollution comes from road traffic emissions along major routes into the city (there are over 29,000 daily car commuters into the city in 2014, with the average commuted distance being six miles]) and in the city centre. This is of major concern particularly where there are people living along these routes. Half of all Leicester residents are concerned about air quality[82].

Levels of air pollution continue to exceed EU target levels in some parts of the city (as of 2019), albeit that the general trend is a significant improvement over time across the city as a whole (see graph 68).

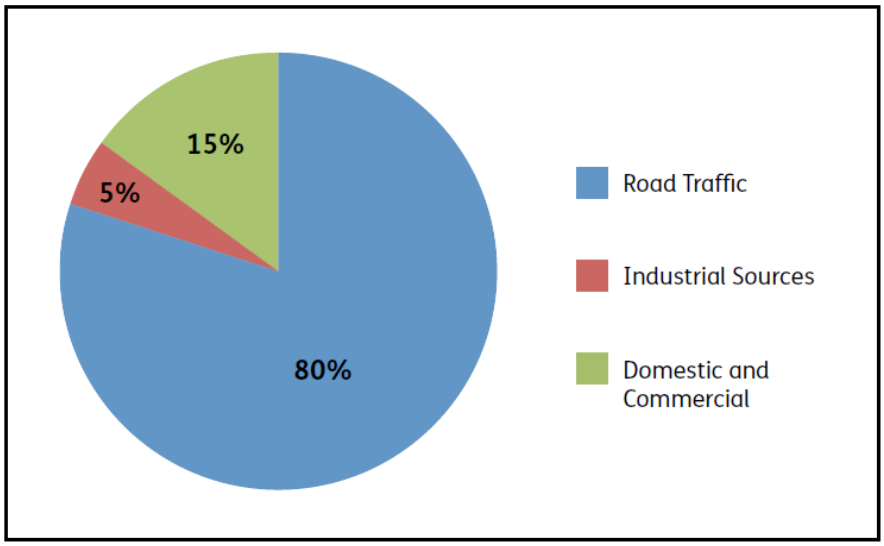
[82] https://www.leicester.gov.uk/media/185984/joint-health-and-wellbeing-strategy-2019-2024.pdf

Figure 70: NO_2 concentrations in Leicester



- The graph above shows overall that there has been a year-on-year decrease in NO_2 levels. St. Matthew's Way is nearly compliant.
- Leicester has been mandated by the Secretary of State / Joint Air Quality Unit (JAQU) to take steps to reduce air pollution levels in the city Government to achieve EU target levels in the shortest possible time.
- NO_2 concentrations have fallen by between 16% and 37% from 2011 to 2019, but more work is required to get these levels below the legal limit on the Inner Ring Road and at Glenhills Way / Soar Valley Way (A563).

Figure 71: Leicester NOx Source apportionment (2014)[83]



[83] https://www.leicester.gov.uk/media/180653/air-quality-action-plan.pdf

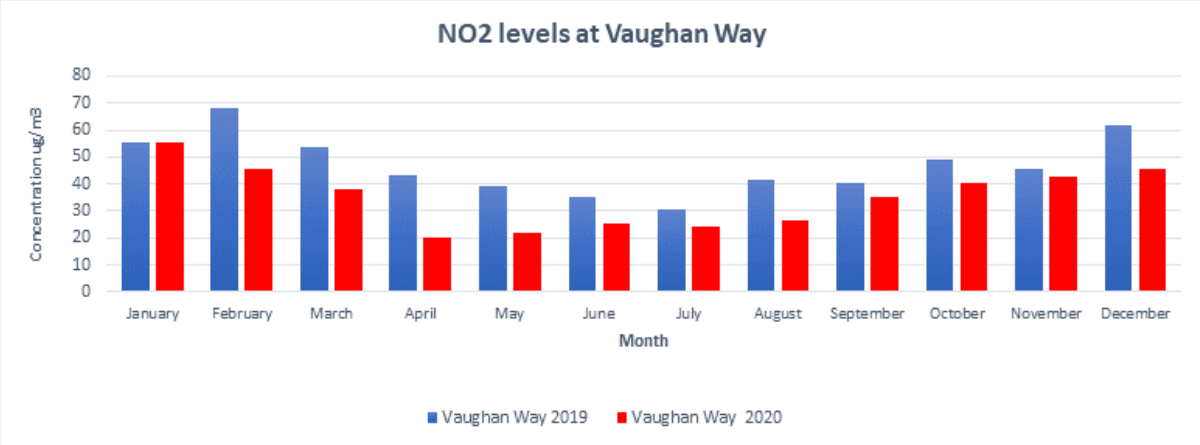
A series of priority interventions, focussed on sustainable transport, cycling and walking and clean transport modes, have been delivered aimed at bringing levels of pollution below EU targets. Whilst significant air quality improvements have been seen in recent years, like most other UK cities, Leicester still currently exceeds the EU target of 40µg/m^3 for NO_2. This is specifically focussed on sections of its inner and outer ring roads.

In 2020 an EU target for particulate matter of 2.5 microns ($PM_{2.5}$) should have been introduced and the Government's Clean Air Strategy 2019, pledges to set more stringent air quality standards through the Environment Bill, details of which have been delayed due to Brexit.

6.2.1 Air Quality: the effects of COVID19

The graph (figure 72) below presents a comparison of NO2 levels at Vaughan Way monitoring station in Leicester between 2019 and 2020. There is also a similar trend at other city monitoring stations. The impacts from COVID-19 has provided a glimpse on the positive change on air quality levels as a result of a decrease in car use and more active travel being undertaken. Vaughan Way is now the only area of concern (February 2021) although it is due to be compliant by 2023 without any additional interventions – just with a business as usual approach.

Figure 72: NO_2 levels at Vaughan Way



However, it has now been agreed with JAQU that additional measures are now not needed for Vaughan Way. Although JAQU are considering some quick win proposals for Leicester such as enhanced behavioural initiatives.

6.3 Flooding

Flooding is a natural process that plays an important part in shaping our natural environment. However, flooding can cause damage, disruption and in extreme circumstances loss of life. The risk of flooding is increasing due to climate change and urbanisation, and surface water flood risk in Leicester is of a significance that is recognised nationally. The Local Flood Risk Management Strategy (LFRMS) for Leicester is available on the Leicester City Council website.

Leicester is at high risk from surface water flooding. The Surface Water Management Plan (SWMP) study addresses this in more detail..

Development should be adapted to the expected changes in Leicester's climate. It should be designed to be resilient to the increased risk of flooding and increased likelihood of hotter, drier summers and heatwaves.

What this means for LTP4:

- The LTP4 needs to reduce its carbon emissions from transport to help meet the Council's ambition to become carbon neutral by 2030 or sooner.
- For LTP4 this includes delivering an ambitious series of programmes investing in infrastructure, services and promotion for walking and cycling, low-carbon public transport and electric 'ultra-low-emission' vehicles and charging.
- By implementing sustainable travel solutions it will also support improving air quality in Leicester.

7. Transport Technology / Innovation / Future Transport

Car ownership as a method of transport is particularly important across the Leicester and Leicestershire area, particularly through connecting its rural population. However, increasing congestion is commonly cited as an issue, particularly around Leicester. A growing population will further exacerbate this problem. Innovative approaches to improving mobility—for instance, through the use of increasingly automated vehicles—offer a significant opportunity to overcome these issues, enabling further economic and environmental benefits to occur. [84]

Recent technological developments have altered the profile of travel. As outlined in the Industrial Strategy, we are *"on the cusp of a profound change in how we move people, goods and services around our towns, cities and countryside"*.[85]

The Smart Leicester[86] aim is to better connect people in Leicester digitally, physically and socially, for example by creating more accessible and attractive neighbourhoods that are more likely to attract and maintain local facilities.

7.1 Micro-mobility

As mentioned in Section 6, Leicester has been directed by the Secretary of State to meet EU objectives for NO2 in the shortest possible time. Also, Leicester's Climate Emergency Strategy (2020-23) has an ambition for Leicester to become carbon neutral by 2030 or sooner. As a result, Leicester, like many other urban areas, are becoming increasing under pressure to adopt solutions to tackle harmful pollutions arising from transport. Micro-mobility is seen as part of the solution. Micro mobility is the use of small mobility devices designed to carry one or two people, or last mile deliveries. E-scooters, e-bikes and e-cargo bikes are examples. Leicester did not take part in the government authorised trials of e-scooters (2020 / 21) but the results and conclusions are awaited with interest. However, the city is implementing a significant microbility project in the form of an e-bike share scheme (details below). Nationally, the micro-mobility sector is seeing rapid growth and development.

7.1.1 Bicycle Sharing Schemes

Bicycle sharing schemes have become significantly more popular in urban areas. In June 2021, Leicester City Council installed the UK's largest fully-docked,100% electric bike share scheme. [87] [88] The scheme provides another first for England as the e-bikes charge within the on-street docks. This increases the availability of the e-bikes and improves the overall operational efficiency of the system as the biked don't have to be removed from street to re-charge batteries. At launch, the scheme offered 500 e-bikes across 50 docking stations but interest from public and private sector partners is likely to increase this number. [89]

[84] Local Industrial Strategy Economic Review (llep.org.uk)

[85] Local Industrial Strategy Economic Review (llep.org.uk)

[86] https://www.leicester.gov.uk/your-council/policies-plans-and-strategies/smart-leicester/

[87] https://rideonleicester.com/

[89] https://news.leicester.gov.uk/news-articles/2020/november/ride-on-announced-as-partner-in-leicester-s-new-e-bike-scheme/

7.2 Mobility as a Service

Mobility as a Service (MaaS) is a term used to describe digital transport service platforms that enable users to access, pay for, and get real time information on, a range of public and private transport options. MaaS can be seen as a one stop online ICT interface comprising: An intermodal journey planner

- (providing combinations of different transport modes: car-sharing, car rental, underground, rail, bus, bike-sharing, taxi, etc.) that operates in real-time
- a single payment portal like that for smartphones, whereby users can pay as they go or else buy a 'service bundle' in advance
- a booking system incorporating the entire end-to-end journey stages

7.3 Parking availability and payment apps

Helping to find available parking spaces without the need to search, and to be able to pay for them by phone. Using technology can improve and create seamless overall car parking experience. Examples of parking technology are cashless payment solutions, variable message signs and automatic number plate recognition (ANPR). Using smart digital technology for parking can help ease congestion, manage parking more effectively and adapt to changing consumer experiences.[90]

7.4 Car Sharing and Car Clubs

An increase in the use of shared vehicles could alter demand and patterns of transport usage across Leicester through a car club or car sharing scheme. Car clubs are generally being used in a variety of countries to support lower-car lifestyles and to tackle peak hour congestion. Car Clubs have a reduced impact on the likelihood on purchasing a car. This may reflect the general move away from car ownership (particularly amongst the under 30s).[91] Shared mobility can also enable space to be used more effectively in dense urban spaces, particularly for reducing the need to provide car parking. They offer a low carbon, flexible use vehicles which can potentially integrate into wider mobility systems, car clubs are a key component for future sustainable transport solutions.[92]

7.5 Smart Highway Network

The City Council manages the Area Traffic Control (ATC) and has sought to manage traffic flows and minimise the delay on the network. In recent years, however, the challenge has increasingly become one of managing queues and congestion, particularly at peak times. Notwithstanding the associated air quality challenges, the limited road space simply cannot accommodate unconstrained growth in the use of private cars. Sustainable transport modes must therefore be prioritised. This can be delivered in several ways including: reallocation of road space in favour of sustainable modes; increased traffic regulation and enforcement; parking controls; and, through smart traffic management and control systems and strategies. The latter area is most relevant to ATC.

The control strategies will increasingly focus on maximising the number of people travelling through the network, not simply the number of vehicles. Primarily this will mean prioritising buses over cars, helping to improve the quality and reliability of public transport by maximising the speed and reliability of bus journeys. There is, however, no "one size fits all" solution. In areas where walking and cycling are the primary focus, ATC control strategies will be tailored accordingly. In other areas, traffic control strategies may seek to improve air

[90] https://www.itproportal.com/features/digital-parking-technology-helps-make-our-cities-smarter/

[91] https://como.org.uk/wp-content/uploads/2018/11/Carplus-Annual-Survey-of-Car-Clubs-2015-16-England-and-Wales_Final.pdf

[92] https://como.org.uk/shared-mobility/shared-cars/what/

quality. In delivering this plan, ATC network management strategies will be developed to maximise the benefits of individual schemes, the wider network and the city as a whole.

Going forward, ATC will also play a pro-active and supportive role in the wider "smart cities" agenda. Working with partners, the aim is to help travellers make better-informed, healthy and reliable multi-modal transport decisions.

7.6 Alternative Fuels

Drivers are increasingly shifting towards vehicles which run on alternative fuel source. Increasing the use of ultra low emission vehicles (ULEVs) has been identified as a way of addressing local air quality issues.

Electric cars will cost the same to make as conventional cars, with internal combustion engines, by 2024 and an acceleration in the shift away from fossil fuel vehicles may be imminent, according to new research[93]

Currently alternative fuel vehicles are only a small number of the vehicles on the road. But they are rising, particularly in recent years. During 2018 63,000 ULEVs were registered for the first time in Great Britain, an increase of 20% on 2017. ULEVs now make up 2.2% of all new registrations.[94] For Leicester, by the end of 2019, Leicester had nearly 800 ULEVs registered (see Figure 74). Again in Leicester, half of the petrol and diesel car commuters surveyed would be encouraged to change to an Electric Vehicle or hybrid if their company installed charging points at work[95].

About 50% of residential houses in Leicester have no off street parking and the potentially limited access to charging stations for those that do not have off-road parking, and for people living in houses that are unsuitable for plug-in cars (Mullen and Marsden, 2016b)[96] can pose difficult challenges and choices.. The council has been successful in securing electric charging points for the roadside, public car parks, park and ride sites and on-street parking in trial areas for residents in housing with no off-street parking provision.

The government has pledged the end of sale of new petrol and diesel sales by 2030. The move is underpinned by over £1.8billion to support greater uptake of zero emission vehicles for greener car journeys. It is stated that this investment will improve air quality and support economic growth.[97] This provides an opportunity for Leicester to promote and deliver infrastructure to support this government pledge. It is also important to consider as part of the local planning system to ensure that it helps drive the uptake and support the growth of ULEVs.

A recent study published by Midlands Connect[98] has provided guidance and principles to support the accelerated uptake and provision of EV charging infrastructure in the region. The work has included forecasting electric vehicle uptake and charge point requirements

[93] https://www.theguardian.com/environment/2020/oct/21/electric-cars-as-cheap-to-manufacture-as-regular-models-by-2024

[94] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/800502/vehicle-licensing-statistics-2018.pdf

[95] Leicester Business Engagement Survey (2020) Go Travel Solutions.

[96] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/784685/future_of_mobility_access.pdf

[97] https://www.gov.uk/government/news/government-takes-historic-step-towards-net-zero-with-end-of-sale-of-new-petrol-and-diesel-cars-by-2030

[98] https://www.midlandsconnect.uk/publications/

based on three forecast scenarios. It has found that the delivery of charge points will need to grow quickly, to stay ahead of demand and accelerate EV uptake.

The following provides data specific for Leicester:

Number of electric vehicles registered in Leicester (DfT figures):

- Includes all models identified as being battery electric, plug-in hybrid electric, or range-extended electric.
- Allocated to each LA according to postcode of registered keeper

Figure 73: Leicester's Plug in cars, LGVs and quadricycles

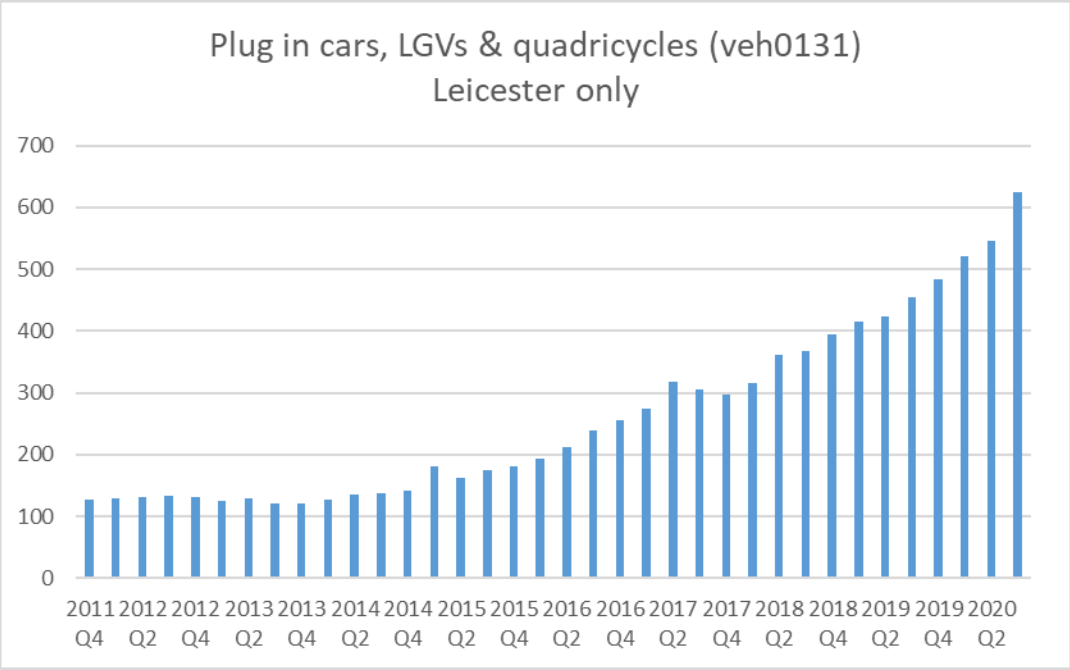
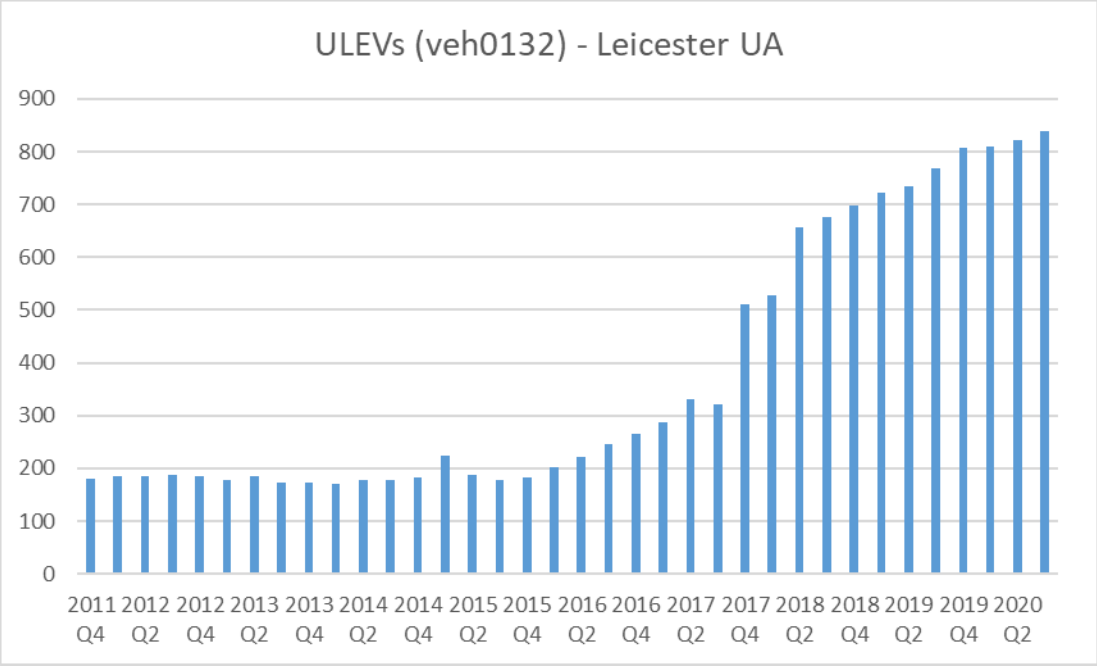


Figure 74: Licensed Ultra Low Emission Vehicles (ULEVs, veh0132)



Key points are:

- Ultra low emission vehicles (ULEVs) are vehicles that emit less than 75g of carbon dioxide (CO2) from the tailpipe for every kilometre travelled. In practice, the term typically refers to battery electric, plug-in hybrid electric and fuel cell electric vehicles.
- The difference in numbers is due to a range of Toyota Prius Hybrid Electric Vehicles (non plug-in - i.e. the battery is charged from the petrol engine) that had low enough emissions to be considered ULEVs
- This range of models accounts for nearly half of the ULEVs registered to Leicester
- In 2021 the ULEV definition will change to less than 50g and these vehicles will no longer be classes as ULEVs
- Includes all models identified as being battery electric, plug-in hybrid electric, or range-extended electric.
- Allocated to each LA according to postcode of registered keeper
- The Office for Zero Emission Vehicles are to reduce the 75g carbon level to qualify as being a ULEV and plans to phase it out altogether with only zero emission vehicles being the preferred vehicle.

There are also several grants available to support the uptake of electric vehicles. These are:

- Plug in vehicle grant
- Electric vehicle home charging scheme
- On- street residential charging scheme
- Workplace Charging Scheme

To support the growth in electric vehicles, the City Council has been supplying the necessary infrastructure. The existing charge point locations are provided at: Public electric charging points in the city.

In 2020 the Council will be installing over £1m of charging points funded through the Office of Zero Emission Vehicles & the European Regional Development Fund (ERDF). The impact of increased electricity demand in the UK could be managed through local installations of alternative energy generation such as solar panels, coupled with battery storage or even 'Vehicle to Grid' (V2G) technologies, where vehicles to act as battery storage capacity when not in use. In May 2021 Midlands Connect in conjunction with DfT published a report showing Leicester having sufficient chargers for the number of ULEV's. However, even with the £1million investment this year even more chargers are required to meet the government's aspirations for ULEV and EV uptake.

Leicester City Council hosted a Climate Emergency Conversation in early 2020 which the public were asked for their views on what we should do about climate emergency. The conversation included two climate assemblies for city residents and young people, a conversation pack for local groups and organisations and an online discussion forum. There was a concern about the cost of electric vehicles, lack of charging points. It was also recognised that the government could increase funding available for electric vehicle charging infrastructure and increase grants available to individuals and businesses for ultra low emission vehicles and charging points.

7.7 Bus Retrofit Programme

The Leicester Bus Emission Study (2012/13) determined that Glenhills Way on the Outer Ring Road and Vaughan Way on the Inner Ring Road had high contributions from buses to NOx emissions. The study concluded that retrofitting Euro III buses with combined (SCRT) technology would have a significant impact on the corridor's air quality. According to First Group, every customer journey (on an electric bus) saves around 2kg CO_2 compared with driving[99]

In partnership with Arriva and Centrebus, the Council has made successful bids to all three of the DfT's national funding programmes for retrofitting with technologies achieving >50%NOx reduction in tailpipe emissions:

Project Breathe 1 (2013): 32 Arriva Euro 3 buses retrofitted to Euro 5+ standards

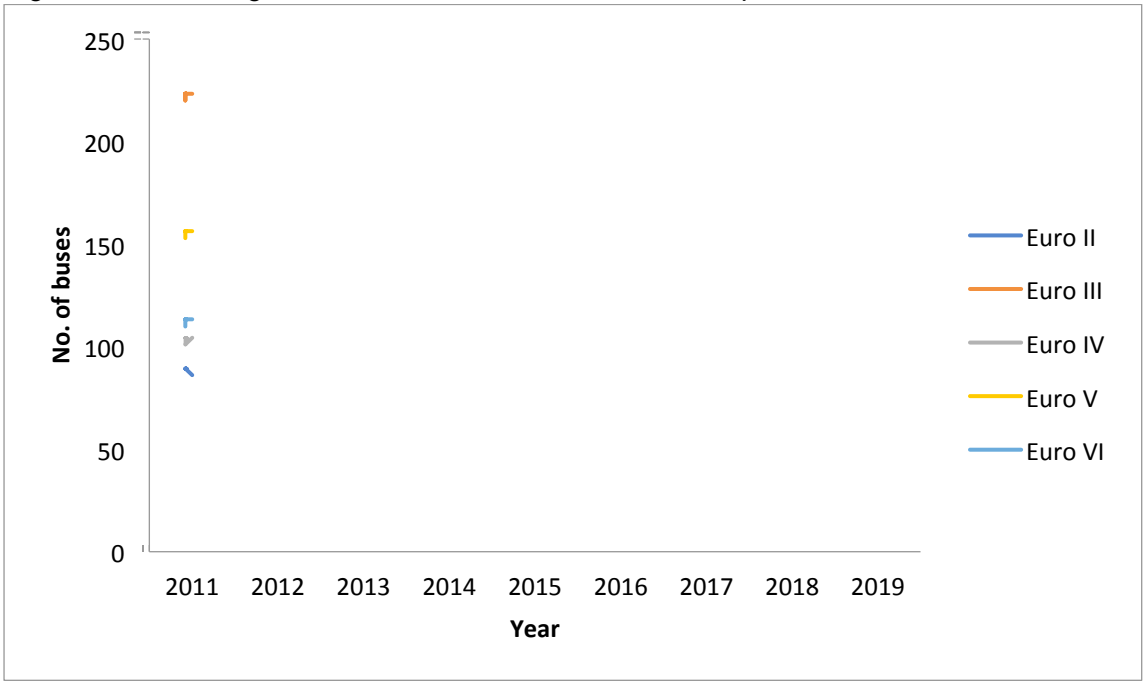
Project Breathe 2&3 (2014 & 2015): 11 Centrebus Euro 3 standard to Euro 5 standard.

Retrofitting buses – 78% NOx reduction meets Euro 5 standard for NOx. Retrofitting delivers at this at a fraction of the cost of a new bus, therefore value for money.

The programme is continuing with 158 more diesel buses on Leicester's busiest routes set to be retrofitted. The DfT has awarded the £980,000 from the CBTF and will work with First and Kinchbus. The work is expected to be completed in summer 2021.

[99] https://www.bbc.co.uk/news/uk-scotland-glasgow-west-51048942

Figure 75: Euro engine standards for the four main bus operators in Leicester



- Under the £4m Clean Bus Technology Fund 43 buses have been or are being retrofitted to bring their emissions up to Euro 5/6 standard.
- Bus companies have also been upgrading their own fleets using their own funds, significantly raising the numbers of Euro V and VI buses in the city.
- The percentage of Leicester's bus fleet that are EURO IV or better has risen from 38% in 2015 to 78% in 2019.
-

7.8 Autonomous Vehicles

The automotive sector is on the cusp of a revolution. The technology is designed to enable drivers to delegate the task of driving to the vehicle. Connect Autonomous vehicles (CAVs) brings the potential for truly transformative change in the way people and goods are transported, offering significant improvements in safety, efficiency, mobility, productivity and user experience. By 2035 it is estimated that the UK CAV market could be worth £28 billion.[100]

Emerging autonomous vehicles could provide safer and more efficient means of travel therefore better network efficiency. Use of smartphones have provided opportunities to connect with users of the transport network. Therefore it is important for Leicester to monitor national developments these emerging new areas as they could realise any opportunities for improved efficiency and mobility.

7.9 Freight

Battery electric vehicles are going to play an increasingly important role in the UK van market as it evolves in the next few years. While electric vans represent a small fraction of overall sales, as concern about environmental pollution grows – especially in city centres – it

[100] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/642813/15780_TSC_Market_Forecast_for_CAV_Report_FINAL.pdf

is expected that the number of electric vans available to UK buyers to grow dramatically from 2020 onwards.[101]

Hydrogen fuel cell technology could potentially benefit the logistics sector. However there is current lack of hydrogen infrastructure available across the UK to be a competitive and realistic option for commercial fleet operators.

7.10 Future Demand for Transport – Homeworking

Since commencing LTP4, the COVID pandemic has broken out. This has resulted in many changes to people's lives and possibly accelerated the changes such as more home working.[102] Fifty of the biggest UK employers said they had no plans to return all staff to the office full-time in the near future.[103] As such the lockdown has forced people to change with an increase of people probably working remotely from their office base, at home. This will bring benefits including reduced congestion, carbon emissions and improved air quality.

7.11 What this means for LTP4

- Transport technology is rapidly changing. These new opportunities in technology help travellers make better-informed, healthy and reliable multi-modal transport decisions.
- Individual powered transport, such as e-bikes / micro-mobility measures has the potential to reduce transport's impact on the environment.
- The use of ULEVs is increasing and the Council needs to make sure there is adequate infrastructure provision to support the use of vehicles. The use of cleaner vehicles also contributes towards improving air quality.

[101] https://www.parkers.co.uk/vans-pickups/advice/electric-van-guide/

[102] https://www.centreforcities.org/future-of-cities/

[103] https://www.bbc.co.uk/news/business-53901310