Cheshire West & Chester Council

Let’s talk about...

Transport

Local Transport Plan 4: 2025- 2045
Evidence Base

Consultation Draft – June 2025

Cheshire West and Chester

Contents

Tables

Figures

Photos

Maps

Charts

1 Introduction

This document sets out the evidence base for Cheshire West and Chester's (CW&C) Local Transport Plan Four (LTP4). This evidence base has been produced to support the development of LTP4, providing an overview of the transport networks in CW&C and how we use them.

The Local Transport Plan helps address local transport issues by providing a framework for decisions on future investment. The strategy will:

- Set vision and objectives for transport to support wider goals and ambitions
- Establish policies to help us achieve these objectives, and
- Outline plans for implementing these policies

1.1 Purpose of this document

The evidence base has been developed to provide transparency and understanding of the challenges and opportunities that the new Local Transport Plan will need to consider in its formulation.

The evidence review is an important part of the LTP4 development process. It provides an opportunity to understand existing travel patterns and the reasons why people travel across the borough. A structured and thorough evidence review ultimately enables identification of existing and future problems with CW&C's transport system.

The findings of the evidence base will help to inform the development of LTP4 policies. Therefore, the review enables evidence-based objective setting; a process which enables the production of transport policy that more effectively addresses the travel needs of residents, workers, businesses and visitors. This is the first edition of the evidence base and it will continue to be updated throughout the development of LTP4.

1.2 National, regional and local priorities

The aspirations of the LTP will be developed with reference to the UK Government priorities, localising these to reflect the area's unique circumstances and needs of the borough. From these will stem a vision and accompanying objectives, which are used to identify plans, policies and interventions which can deliver on multi-level priorities.

There are three different tiers of priorities to consider when developing the LTP4 for CW&C. These are:

- National priorities for the UK[1]
- Regional priorities within North West England,[2,3] and
- Local priorities specific to the borough and its many places and communities[4]

Following a review of a wide range of policies and strategies at the national, regional and local level, Table 1.1 summarises the key emerging priorities common among a number of documents. A more detailed review of relevant national, regional, and local policies is contained in the separate Policy Review published alongside this evidence base[5].

[1] See: DfT Outcome Delivery Plan 2021 to 2022 GOV.UK
[2] See: TfN Strategic Transport Plan
[3] See: Cheshire and Warrington LEP Strategic Economic Plan Draft Transport Strategy
[4] See: https://www.cwccouncilplan.co.uk/, CW&C BSIP , West Cheshire Inclusive Economy, LCWIP
[5] https://www.cheshirewestandchester.gov.uk/residents/transport-and-roads/transport-strategy

Table 1.1: Relevant national, regional and local policy priorities

National Priorities	
1. Net Zero and transport decarbonisation 2. Long term economic growth through increased global impact 3. Levelling up and connectivity 4. Improved user experience	5. Accessible, sustainable, and efficient services and infrastructure 6. Maximised wellbeing – good for people and communities, the environment, economy and places, culture and the Welsh language
Regional Priorities	
7. An economy that works for everybody with inclusive growth 8. Transform economic performance and increased productivity 9. Support for new homes and jobs	10. Thriving, sustainable, resilient places 11. Integrated infrastructure for a connected region 12. Promoting and enhancing the built, historic, and natural environment 13. Promote enhancements to attract inward investment and people
Local Priorities	
14. Sustainable and inclusive economy 15. Poverty challenge 16. To make bus a mode of choice for the full cross-section of society by removing barriers to travel 17. To provide more connected, affordable, frictionless ways into the city of Chester 18. Support vibrant, diverse, and competitive local economies 19. Promote active travel and public transport use by locating new development in accessible and sustainable locations 20. Ensure active travel infrastructure enables and encourages use	21. Conserve, enhance, and promote the local culture and character of places 22. Protect, manage, and enhance natural and historic environments and landscapes 23. Support development with necessary provision of infrastructure, services, and facilities to maximise sustainability 24. CW&C to become a desirable and attractive place to live, work, learn and visit with vibrant towns and rural villages 25. Address climate emergency- reduce carbon emissions and maximise resilience to the impacts of climate change- achieving carbon neutrality and meeting the Tyndall-aligned carbon budget in Cheshire West and Chester by 2045

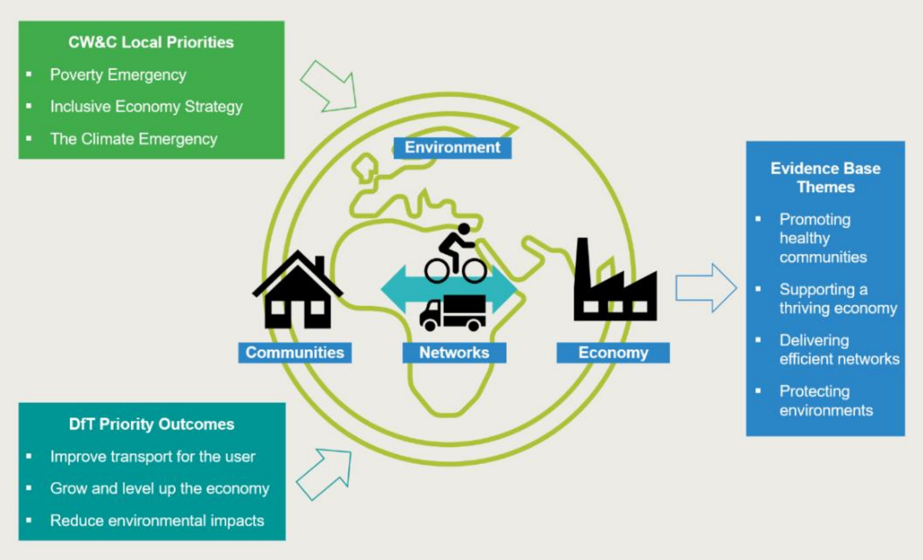
1.3 Evidence Base themes

Though the vision and objectives for LTP4 are not defined at evidence base forming stage, four key themes have been identified to aid evidence base development which reflect general aspirations for the transport system as well as the specific policy priorities highlighted above.

The below figure summarises the transport ecosystem, in terms of what it serves, who it affects, and the main policy priorities. In general terms, an effective transport system can be described as one which **promotes healthy communities** and **supports a thriving economy**, while **delivering efficient networks** and **protecting environments**.

This evidence base is therefore structured around these four theme areas.

Figure 1.1: Evidence base inputs and themes



Source: Mott MacDonald

Theme	Description/purpose
Promoting healthy communities	Within the evidence base, this theme explores the socio-economic standing and accessibility of communities within CW&C, as key generators of transport movements. This theme examines the current travel trends and existing level of accessibility and inclusiveness for key settlements within the borough in order to facilitate sustainable communities.
Supporting a thriving economy	Economic hubs and centres of economic opportunity form a key attractor of trips within the transport network for people within CW&C and further afield. This theme explores the current productivity of CW&C, the distribution of jobs across the borough and areas of key economic activity. Ensuring these areas are well connected to the sustainable transport network will be essential to support a thriving economy.
Delivering efficient networks	At the centre of the trip generators and attractors is the transport network itself. This theme explores the challenges and opportunities associated with the current transport provision across the borough.
Protecting environments	As a key priority at the local, regional and national level, it is essential to consider the impact of current transport provision and travel trends on natural, community and built environments. This theme establishes baselines across these different areas and identifies developing trends.

1.4 Document structure

This document is structured as follows:

Table 1.2: CW&C LTP4 Evidence Base structure

Section number	Section	Contents
2	Promoting healthy communities	Overview of demographics Accessibility analysis (residential trip end) Travel trends Future trends relevant to the above
3	• Supporting a thriving economy	Economic activity and structure Performance and productivity Accessibility analysis (employment trip end) Future trends likely to impact the economy
4	• Delivering efficient networks	For all modes (walking, cycling, micro mobility, bus, rail, highways and freight) an overview of: – The network – Usage – Performance, and – Proposals Future trends and forecast trips by mode
5	• Protecting environments	Overview of the natural, built and community environment The role of transport in protecting and enhancing the above
6	Key issues and opportunities	Summary provided

2 Promoting healthy communities

2.1 Introduction

The purpose of this section is to assess socio-economic trends in CW&C, alongside the current travel trends and accessibility levels of its key settlements. The section identifies societal implications that may affect the way CW&C residents and workforce travel, and identifies key issues and opportunities to be addressed through the LTP to support healthy accessible communities across the borough.

2.2 Demographics

2.2.1 Population

2.2.1.1 Existing situation

As shown in Table 2.1, the CW&C Local Authority area was home to a total of 361,799 people[6] in 2022, spread across a geography of urban and rural settlements. The table also provides a breakdown of the population within the key urban settlements across CW&C. The distribution of LSOA's across CW&C within these categories according to the Department for Environment Food and Rural Affairs (Defra) is illustrated within Map 2.1.

Table 2.1: CW&C population by area type

Area type	Population	Distribution (%)
Chester	93,887	26%
Ellesmere Port	66,243	18%
Northwich	9,191	3%
Winsford	15,010	4%
Frodsham	18,917	5%
Neston	32,823	9%
Rural	125,728	35%
Total	**361,799**	**100%**

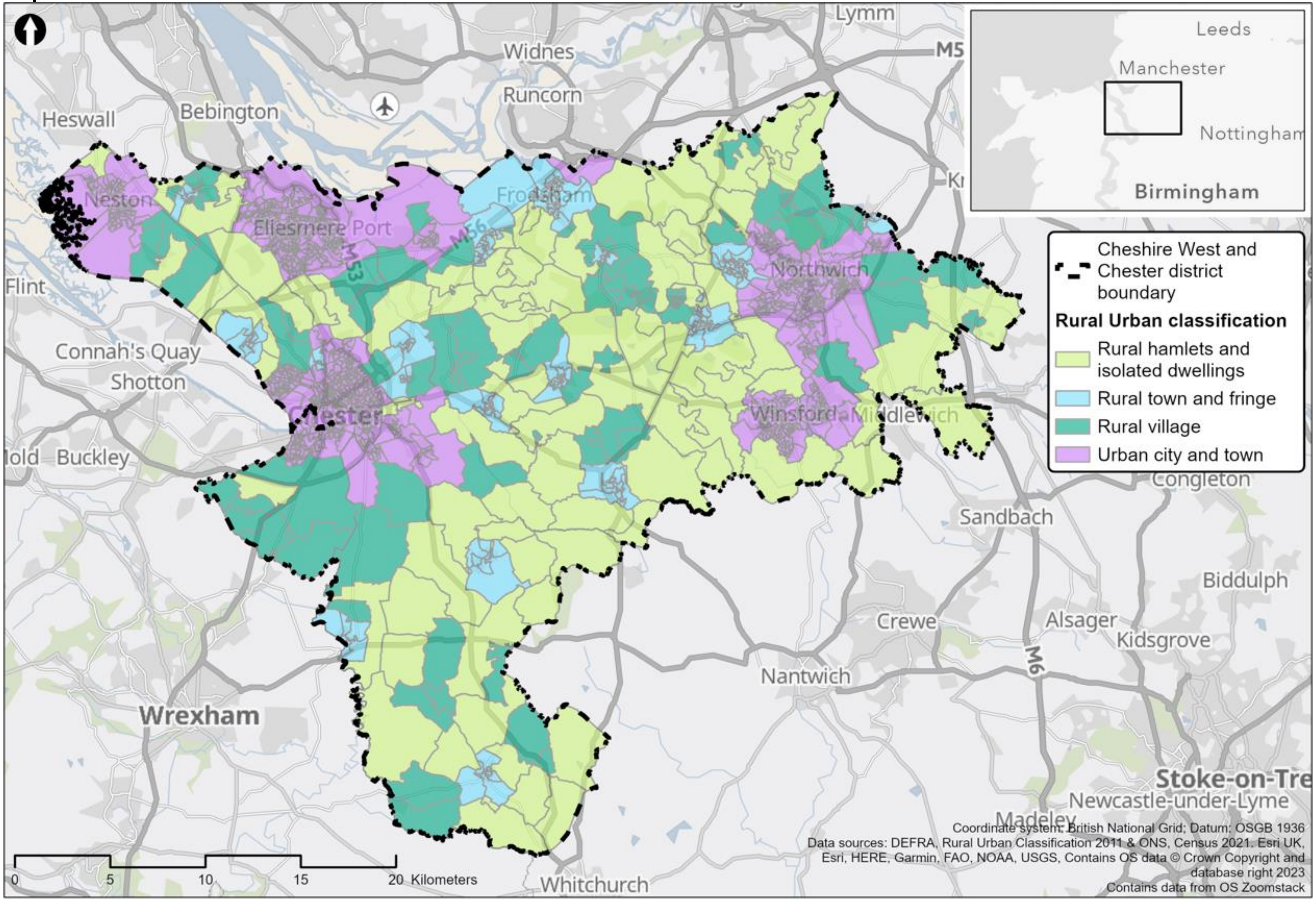
Source: ONS Mid Year population estimates 2022

The urban category includes the primary urban areas of Chester, Ellesmere Port, Northwich, Winsford and Neston. These provide the highest population densities within CW&C, as shown in Map 2.1 below, and provide a home to 60% of the borough's population.

However, over a third of residents within CW&C (35%) reside within the less densely populated rural areas. Ensuring these communities remain well connected to urban areas and the opportunities and services they provide should therefore be a key consideration of the LTP4.

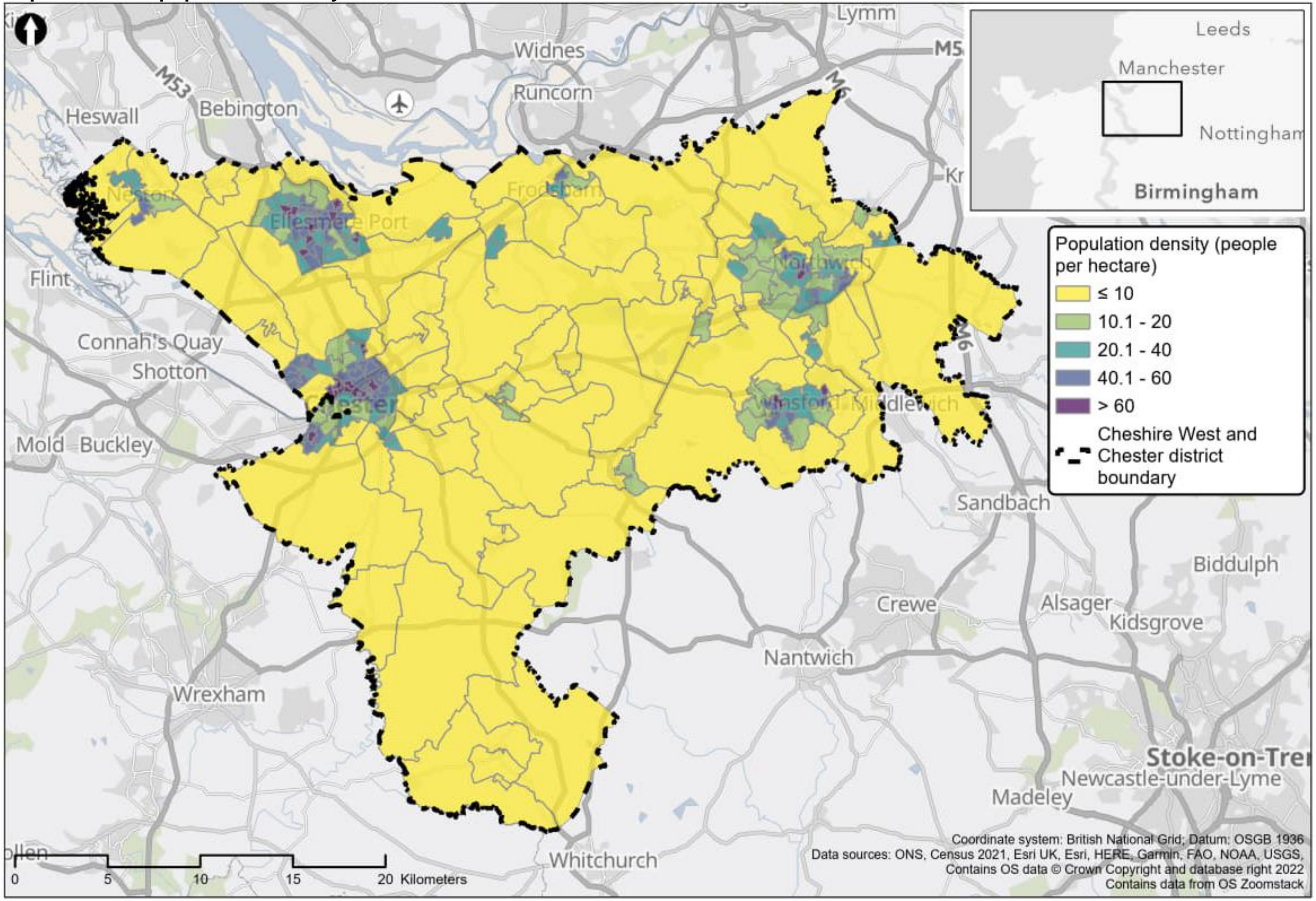
[6] ONS Mid-year population estimates 2022

Map 2.1: CW&C rural urban classification



Source: DEFRA Rural Urban Classification 2011, ONS, Census 2021

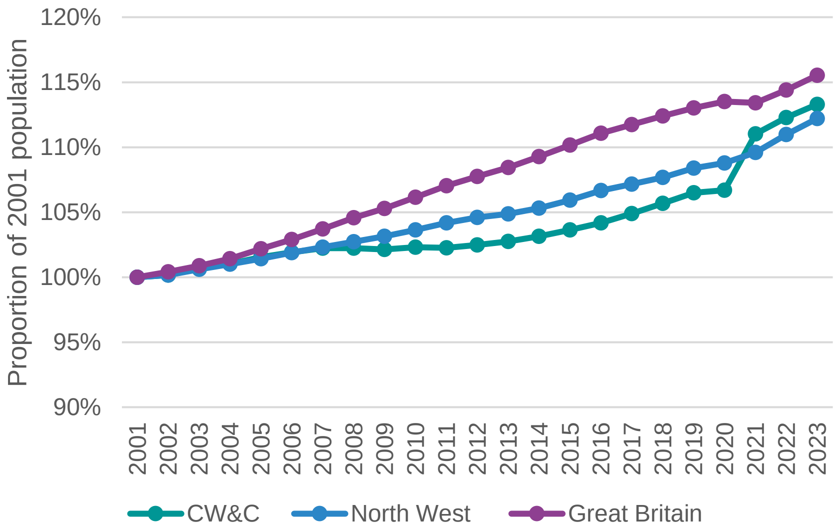
Map 2.2: CW&C population density



Source: Census (2021)

Chart 2.1 below shows that, since 2001, CW&C has experienced steady population growth, but with population increasing at a slower rate than the country as a whole. However, the rate of population growth within CW&C has increased within the last decade, and particularly through the pandemic, outpacing the population growth rate of the rest of the region and UK.

Chart 2.1: CW&C mid-year population estimates 2001-2023



Source: ONS Mid-year population estimates 2023.

This positive trend of population growth reflects the attractiveness of the borough as a place to live. However, an increasing population has implications for the transport network across the borough, with increasing demand for trips between key residential areas and employment opportunities placing additional pressure on networks which may already be constrained.

2.2.1.2 Population forecasts

In 2018, CW&C's population was forecast to grow by 13.1% to over 385,000 residents by 2040[7].

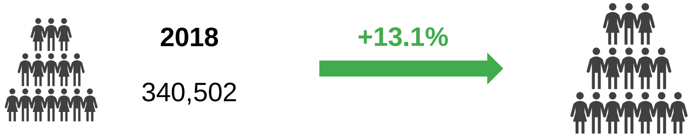
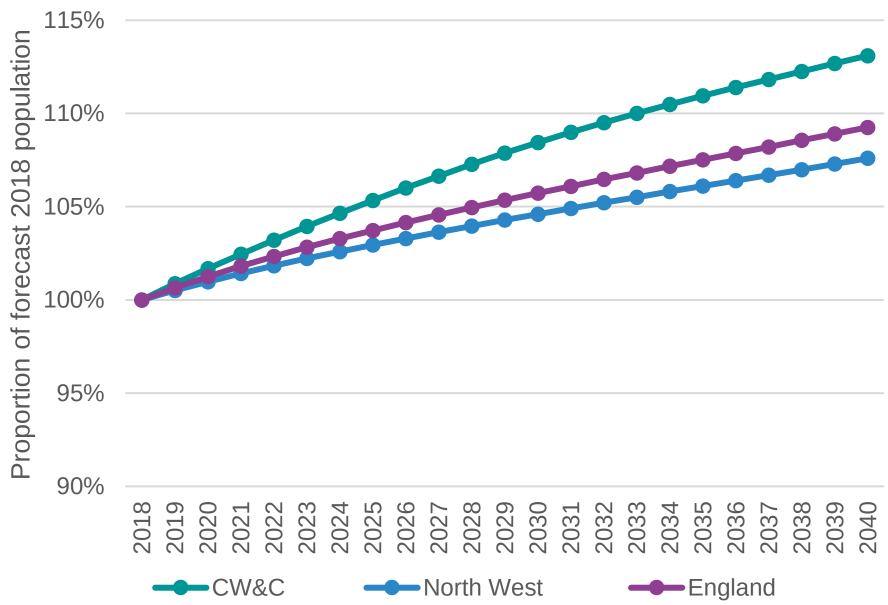


Chart 2.2 compares this projected growth against regional and national levels. This shows population growth in CW&C is forecast to be greater than the level of growth experienced across both the North West and England.

[7] Office for National Statistics (2018), Population projections – local authority based by single year of age.

Chart 2.2: Population projection in CW&C (2018-2040)



Source: Office for National Statistics (2018), Population projections

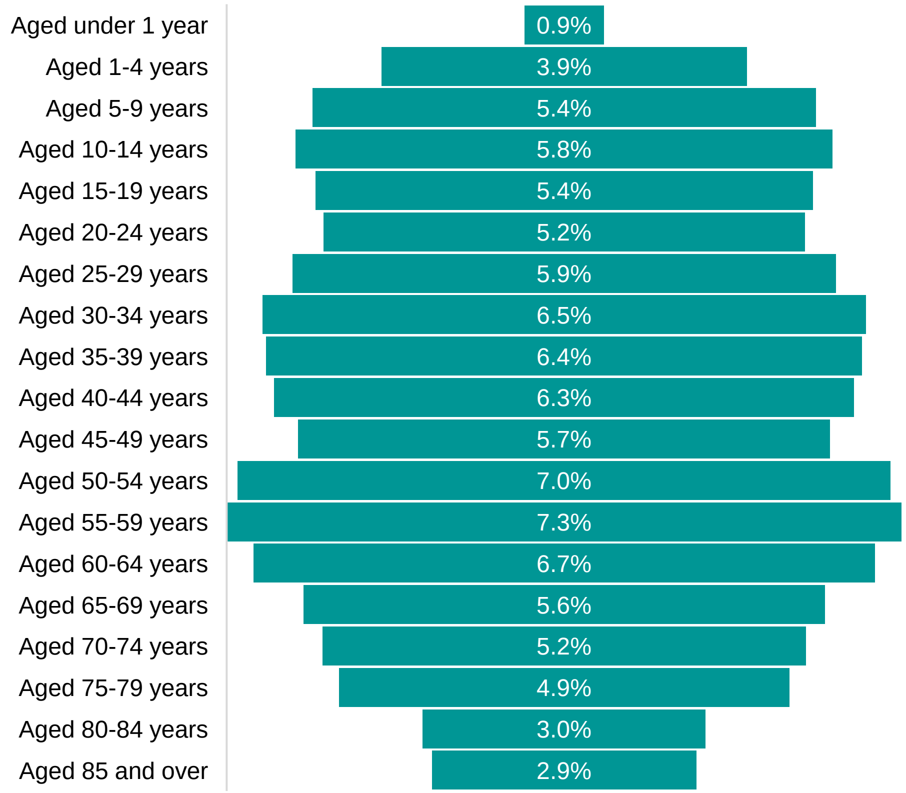
Increasing population has direct implications for the transport network, emphasising the need to ensure there is sufficient supply across the public transport network and that additional trips can be accommodated sustainably.

2.2.2 Age profile

2.2.2.1 Existing situation

Chart 2.3 shows the age profile of the CW&C population in 2023.

Chart 2.3: CW&C Age profile (2023)



Source: ONS Mid-year population estimates 2023

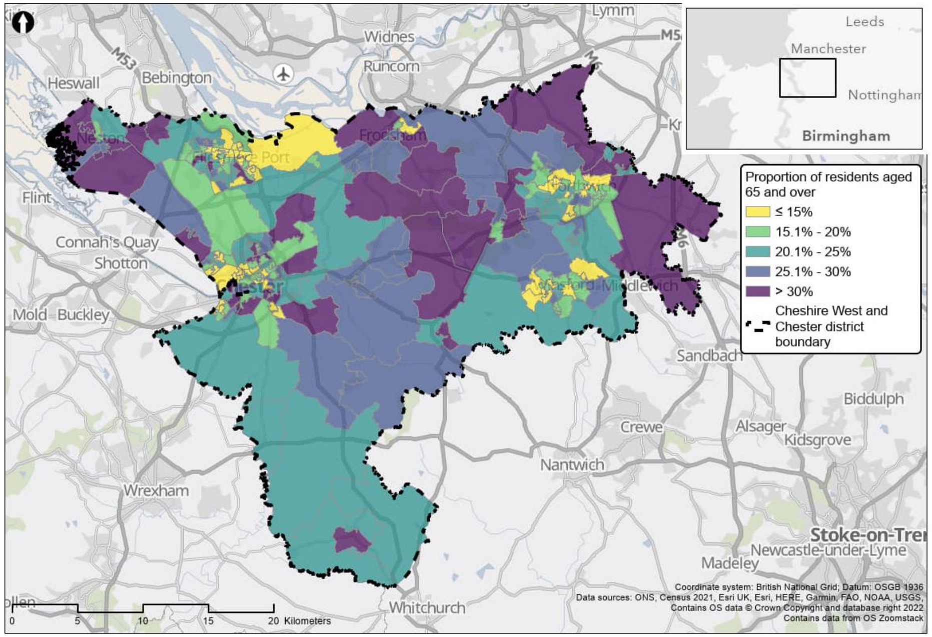
This chart shows the age groups with the highest proportion of population are those in their fifties.

In terms of growth, the number of people aged 50 to 64 years rose by just over 9,200 (an increase of 13.9%) between the 2001 and 2021 census and the share of this age group increased 1%, while the number of residents between 35 and 49 years fell by around 5,500 (7.7% decrease)[8].

2.2.2.2 Older people

The geographic spread of residents aged 65 and over across the borough is shown in Map 2.3. In total, 21.3% of the borough's population is aged 65 and over, compared to the national average of 18.5%.

Map 2.3: Proportion of CW&C residents aged 65 and over



Source: ONS Mid-year population estimates 2021

This map shows the highest concentrations of those aged 65 and over within smaller urban areas around Neston and Frodsham, more rural parts of the borough around Malpas, and communities west of Northwich and Winsford including Kingsley and Norley. Ensuring these more rural locations of the borough are well connected to health facilities, key services and leisure opportunities is therefore key to supporting healthy communities.

Trip choice varies significantly between age groups. Those in the 60 to 69 years age category have the highest mode share of trips by private modes and the lowest share by public transport nationally. However, for those beyond the age of 69, access to a car is likely to decrease, increasing dependency of public transport alternatives[9].

Research undertaken by the University of Chester (2021) into perceptions of public transport and community transport of older residents within CW&C demonstrated that 34.7% of respondents rated public transport provision as poor or very poor[10]. In addition, 36.5% of older respondents indicated the frequency of public transport is either poor or very poor. As the key alterative to private car use for the elderly population, the quality of public transport is key to ensuring these communities remain well connected to key services.

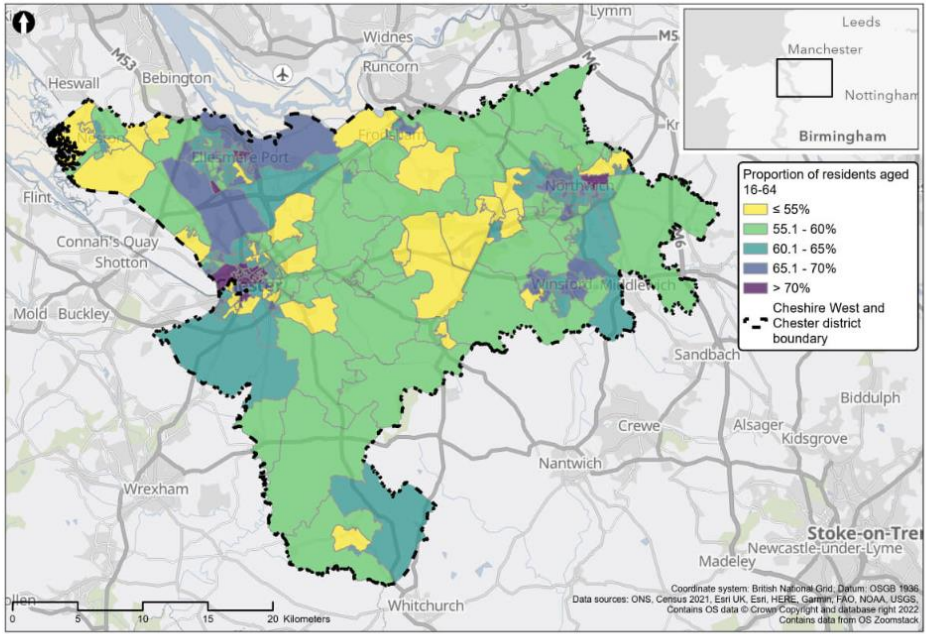
2.2.2.3 Working age people

Map 2.4 shows the geographic spread of residents aged 16-64, who are most likely to be in work or education. The working age population is defined as those aged 16 to 64 by the DfT, regardless of state pension age. In total, 62.5% of the borough's population is aged 16-64, compared to the national average of 64.1%. This map shows the highest concentrations of those aged 16-64 around more urban settlements around parts of Chester, Ellesmere Port, Winsford and Northwich. Improved connectivity and accessibility in these areas will therefore be vital for allowing current and projected populations to access opportunities associated with education and work. This includes

[8] https://www.ons.gov.uk/visualisations/censusareachanges/E06000050/
[9] National Travel Survey 2022
[10] https://extranet.who.int/agefriendlyworld/wp-content/uploads/2018/05/AF-Baseline-assessment-2020-Final-Version.pdf

connectivity to opportunities within the borough, as well as important cross border connections in line with commuting patterns (see Section 2.4 and Section 3).

Map 2.4: Proportion of residents aged 16-64

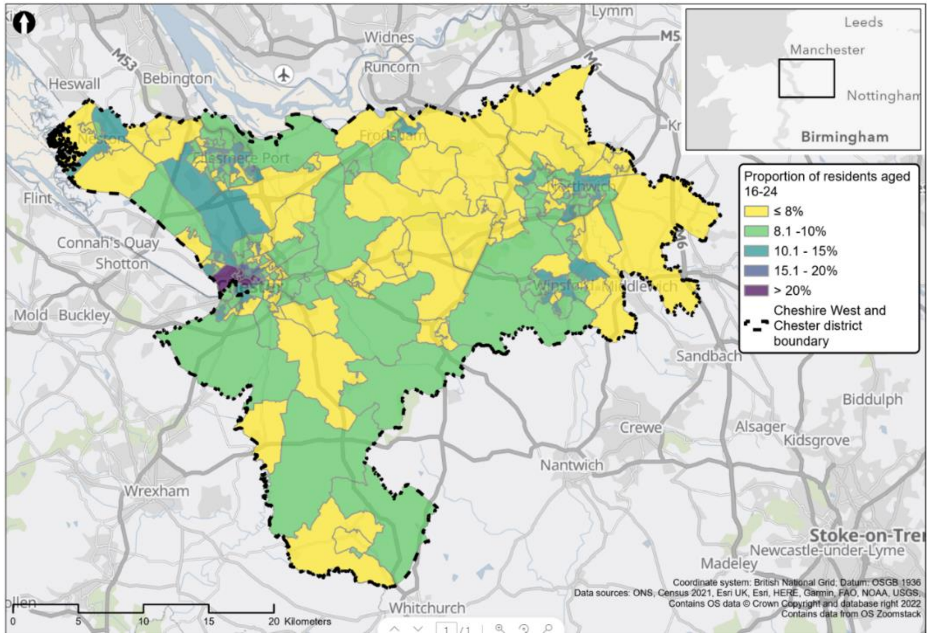


Source: ONS Mid-year population estimates 2021

2.2.2.4 Younger people

Map 2.5 illustrates the distribution of CW&C residents aged 16-24. In total, 10.7% of the borough's population is aged 16-24, compared to the national average of 11.7%. Similarly to the distribution of the working age population, younger people are most concentrated around the key urban centres of the borough.

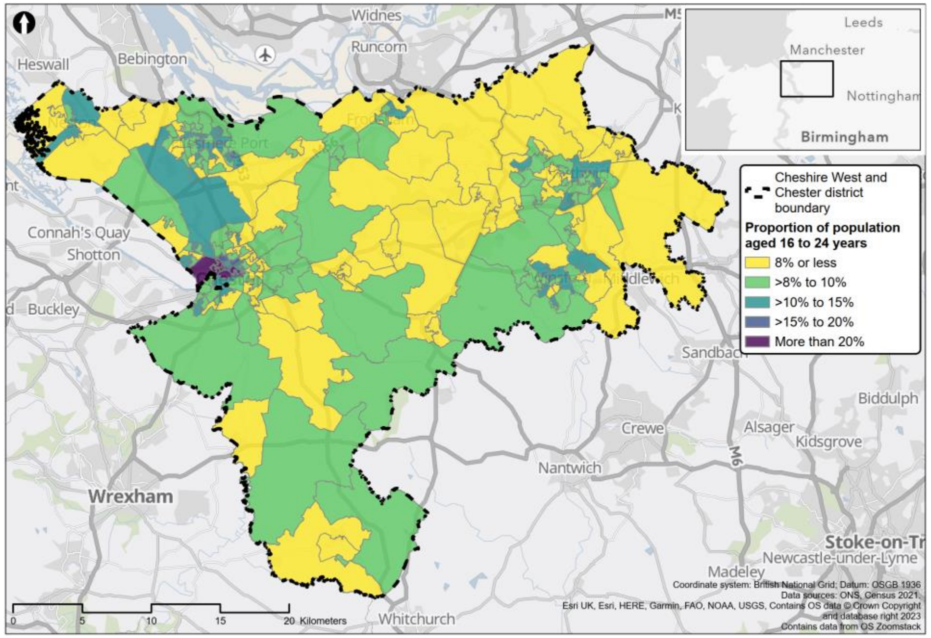
Map 2.5: Proportion of residents aged 16-24



Source: ONS Mid-year population estimates 2021

Map 2.6 illustrates the distribution of CW&C residents under 16. This shows that the proportion of children across most of CW&C is broadly between 10% and 20%, with the exception of slightly higher concentrations (20% to 30%) around the urban areas of Chester, Winsford, Northwich and Ellesmere Port. There is a small area within Chester where the proportion of the population who are children is 10% or less.

Map 2.6: Proportion of residents who are children (under 16)



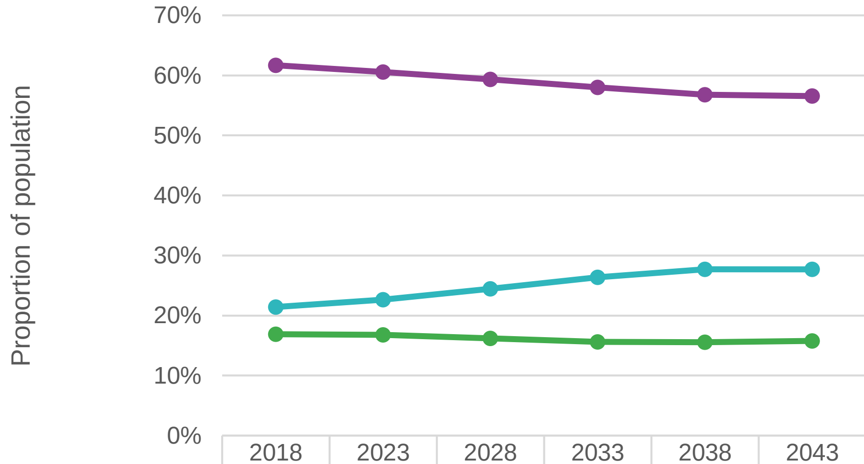
Source: ONS Mid-year population estimates 2021

Social mobility is about ensuring everyone has a fair chance to reach their full potential and that opportunities for a good quality of life are open to all. For youth social mobility, CW&C ranks 303 out of 324 local authorities in England in terms of overall social mobility[11], and is identified as a 'cold spot' for youth social mobility by the Social Mobility Commission. CW&C Council also ranks 248 out of 324 local authorities in terms of overall social mobility, which is within the worst 25% of local authorities in England.

2.2.2.5 Age profile distribution projections

Chart 2.4 shows projected changes in the proportion of CW&C's population by age band between 2018 and 2043. This shows a predicted decline in the proportion of age groups under 65 and an associated increase in the proportion of over 65s, indicative of an ageing population across the borough.

Chart 2.4: Age profile distribution projection in CW&C (2018-2043)



	2018	2023	2028	2033	2038	2043
Under 15	17%	17%	16%	16%	16%	16%
15 to 64	62%	61%	59%	58%	57%	57%
65 and older	21%	23%	24%	26%	28%	28%

Source: ONS Population projections 2018

It is therefore important to consider the needs of the future ageing population, ensuring the increasing number of residents within this age band are well connected to key services and facilities, without dependency on private car use. In addition, ensuring CW&C is well connected to key centres both within

[11] https://www.cheshirewestandchester.gov.uk/asset-library/fairer-future-strategy.pdf

CW&C and surrounding authorities will be key to attracting new residents within the working age population, supporting vibrant communities and positive contributions to the economy.

2.2.3 Deprivation

2.2.3.1 Existing situation

The Council declared a Poverty Emergency in October 2020. The declaration highlighted important disparities between communities, as well as the scale of poverty facing many residents[12]. This disparity is illustrated in Map 2.7 which shows Index of Multiple Deprivation (IMD) results for CW&C in 2019 by national quintile categories. IMD considers deprivation over the following seven main categories:

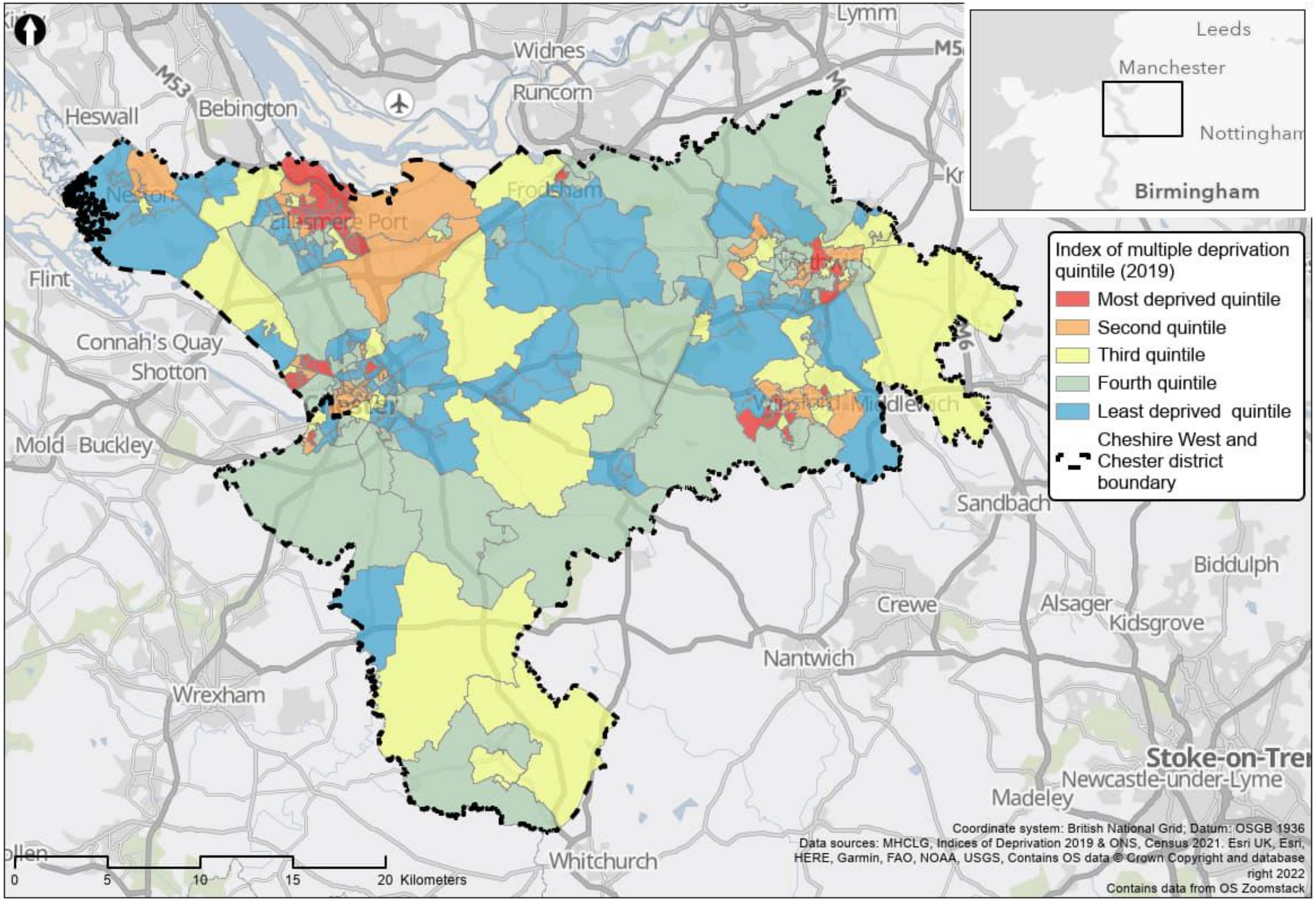
1. Income
2. Employment
3. Education
4. Health
5. Crime
6. Barriers to housing and services, and
7. Living environment

This map shows that deprivation levels in CW&C are generally below national averages. Just 16% of Lower Super-Output Areas (LSOA) within the borough fall within the most deprived quintile compared to 20% nationally. However, there are pockets of deprivation in the main urban areas, primarily within the outskirts of Chester, Northwich and Winsford, and most prominently around Ellesmere Port. 24,000 residents (around 7% of the total CW&C population) are living in 16 small neighbourhood areas that rank in the 10% most deprived neighbourhoods in England (decile 1). Two of these 16 neighbourhoods rank in the 2% most deprived areas in England. These neighbourhoods are in Lache and Winsford[13].

[12] https://www.cheshirewestandchester.gov.uk/asset-library/fairer-future-strategy.pdf

[13] Index of Multiple Deprivation (IMD) 2019

Map 2.7: CW&C Index of Multiple Deprivation (overall decile), 2019



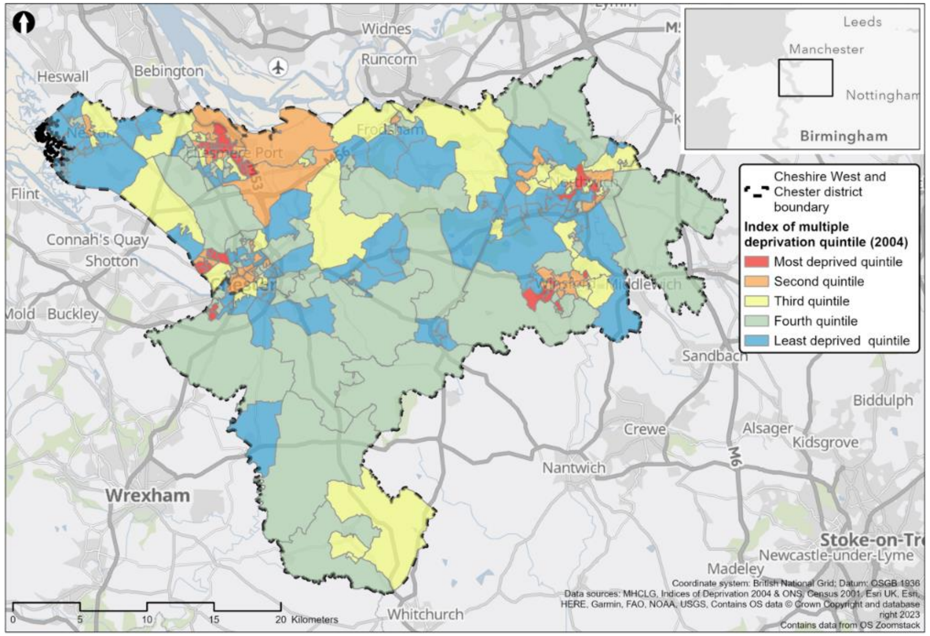
Source: IMD 2019

2.2.3.2 Deprivation over time

Historic IMD data has been assessed to identify whether issues of deprivation outlined in Section 2.2.3.1 are longstanding or recently emerging trends.

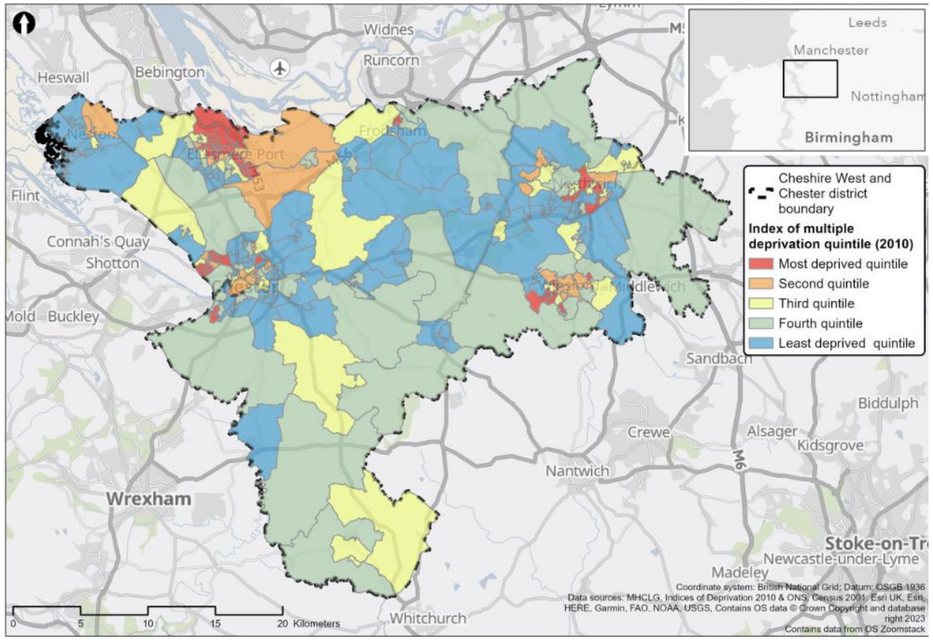
Map 2.8 and Map 2.9 illustrate the IMD results for CW&C in 2004 and 2010.

Map 2.8: CW&C Index of Multiple Deprivation (overall decile), 2004



Source: IMD 2004

Map 2.9: CW&C Index of Multiple Deprivation (overall decile), 2010



Source: IMD 2010

These show that, although patterns have remained largely the same over time with the most deprived areas seen around the key urban centres, there has been a slight increase in deprivation in some rural parts of the borough to the east of Northwich, to the south around Malpas, and within the centre of the borough around Tarvin, where LSOAs have shifted into the third most deprived deciles. It can also be seen that there has been a decrease in deprivation around Frodsham with more LSOAs moving into the two least deprived deciles.

2.2.3.3 Addressing poverty and future deprivation

By 2032, and with the co-operation of local partners, business, residents, and central government, the Council aims to halve the number of children living in absolute poverty. This would be a reduction of 3,634 children living in low-income families[14].

Despite aspirations for the Council to reduce the number of low income families across the borough, the cost of living crisis nationally is expected to have a significant impact on absolute poverty across the UK. The Office for Budget Responsibility forecasted in March 2023 that real household disposable income per person, a measure of living standards, will fall by a cumulative 5.7% over 2022/23 and 2023/24. This would be the largest two-year fall since records began in 1956/57. The OBR expects real disposable household income per person to still be below pre-pandemic levels by 2027/28[15]. Ensuring residents across CW&C are well connected to a range of employment opportunities is therefore important for reducing the number of people at risk of experiencing poverty.

2.2.4 Unemployment

The current unemployment rate for the borough is 3.5%, compared to 4.7% for the North West and 4.8% nationally[16]. Map 2.10 illustrates the proportion of economically active residents across CW&C who were unemployed according to the 2021 census. This shows the highest levels of unemployment around parts of Neston, Ellesmere Port, Chester, Northwich and Winsford, largely in line with the pattern of deprivation illustrated in Map 2.7 above.

Many wards have significantly higher unemployment rates than the borough wide and national averages. Central & Grange, Westminster, Wolverham, and Blacon all have rates of unemployment (as measured by the claimant count) above 7%, compared to 3.3% per cent on average for the borough.

This highlights areas where efficient and sustainable connectivity to jobs, skills and training opportunities is increasingly important to reverse trends of unemployment seen within these areas and contribute to improved quality of life and a healthier local economy.

When looking at trends over time, there have been relatively minor changes in employment levels across the borough. In 2021, just 2.3% said they were unemployed, compared with 3.3% in 2011. The decrease in the percentage of people aged 16 years and over (excluding full-time students) who were employed was greater in Cheshire West and Chester (1.3%) than across the North West (0.5%, from 54.2% to 53.7%). Across England, the percentage fell by 0.8%, from 56.5% to 55.7%[17].

2.2.5 Crime statistics

Crime is a key factor in reducing personal safety and security and perceptions of personal safety and security amongst communities and can therefore reduce the quality of the local environment and discourage walking and cycling as modes of transport. This is particularly the case in periods of darkness. According to Our Place Survey undertaken by CW&C in 2021, around 22% of respondents said they feel fairly unsafe or very unsafe after dark[18]. A heatmap of reported street crimes (Anti-Social Behaviour) for each key urban area from 2020 to 2023 is shown in Map **2**.11 below. This shows that crime is concentrated most in the centres of each urban area, with limited reported crimes in the rural areas. Of the approximately 95,000 total crimes reported in this 3-year period, the most common category of crime, with almost 20,000 cases, was anti-social behaviour. This type of crime along with others such as violence, robbery and theft from another person would all reduce perceived pedestrian safety and can create severance for local communities through reduced opportunity for walking and cycling.

[14] Fairer Future Strategy 2022/32

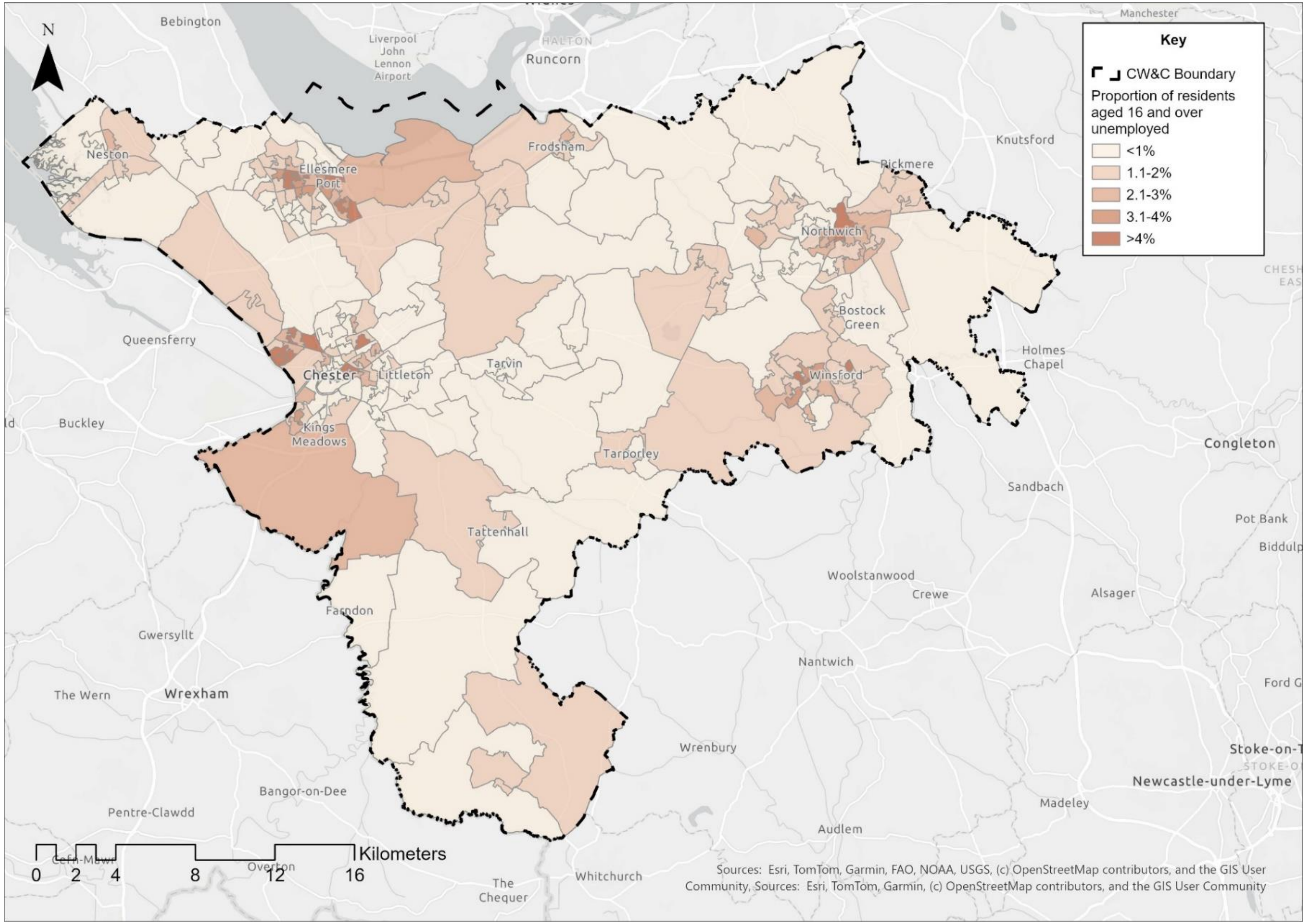
[15] Income inequality in the UK

[16] Percentages as proportions of the economically active population

[17] Proportions as % of the total population, https://www.ons.gov.uk/visualisations/censusareachanges/E06000050/

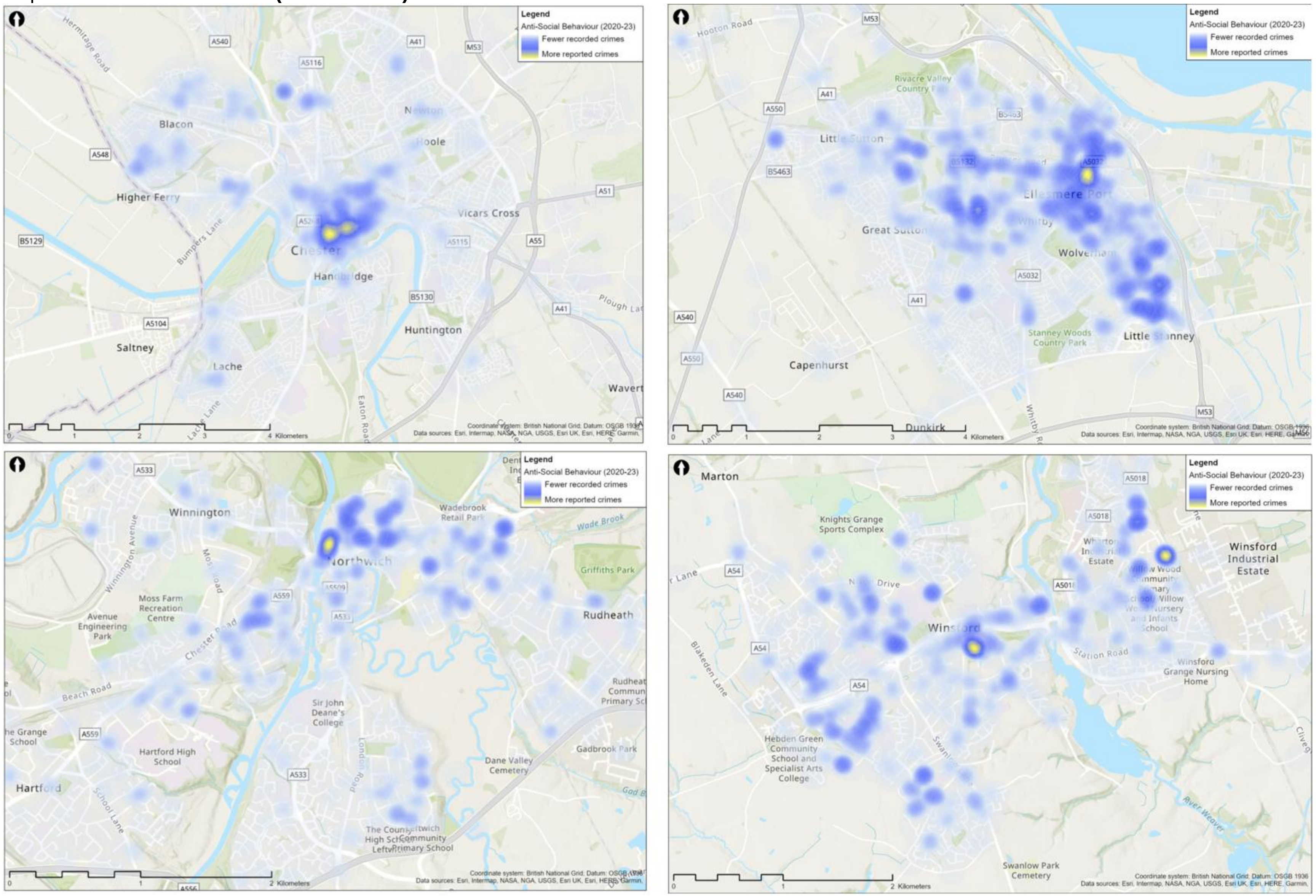
[18] https://www.cheshirewestandchester.gov.uk/your-council/key-statistics-and-data/state-of-the-borough/crime

Map 2.10: Proportion of CW&C unemployed, 2025



Source: ONS, Claimant count

Map 2**.11: CW&C crime data (2020 to 2023)**



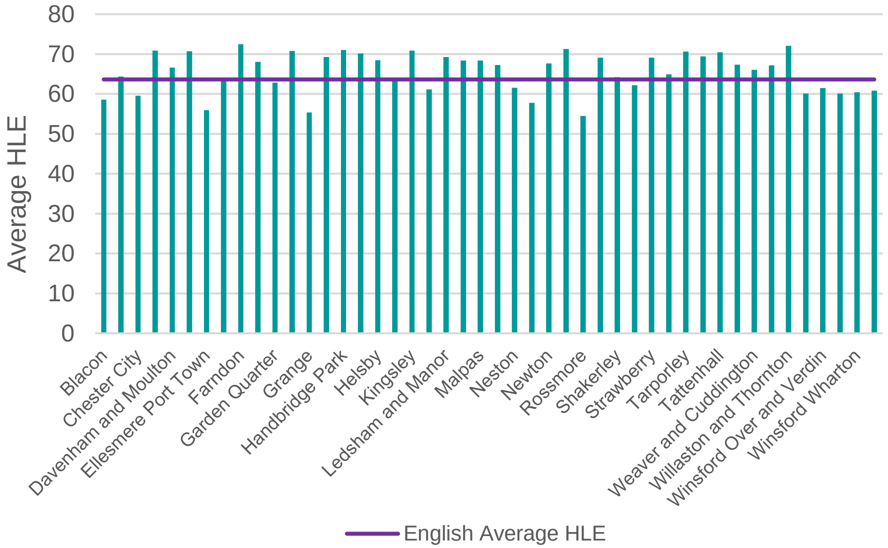
Source: Data.Police.UK

2.2.6 Health and wellbeing

2.2.6.1 Healthy life expectancy

Chart 2.5 illustrates the healthy life expectancy (HLE) of residents within wards across CW&C compared to the national average.

Chart 2.5: Healthy life expectancy at birth by ward

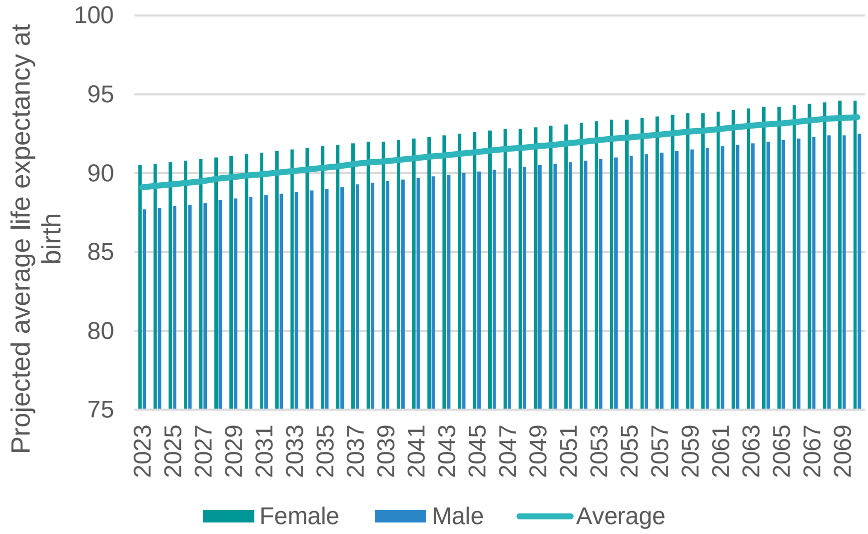


Source: Office for National Statistics, Census 2021 (life expectancy by ward)

This chart shows that wards across CW&C experience significant health inequalities, with the most deprived wards showing life expectancies below the national average; by as much as 10 years for a number of wards including Rossmore, Grange and Ellesmere Port Town. HLE trends for both males and females have remained relatively static over the last 10 years[19].

Chart 2.6 illustrates the projected average life expectancy at birth across the UK between 2023 and 2069. This shows the national projected average life expectancy at birth in the UK is anticipated to increase to reach 90.1 years for males and 92.6 years for those born in 2045[20].

Chart 2.6: Projected average life expectancy at birth across the UK



Source: Expectation of life, principal projection, UK, 2020 edition, ONS

People living longer across the UK is likely to reinforce the impacts of an ageing population within CW&C evidenced above.

[19] CW&C Health and Wellbeing adults

[20] Office of National Statistics (NOMIS)

As noted earlier in Section 2.2.4, obesity is a key indicator of health. In 2021, estimates suggest that 25.9% of adults were obese in the UK. This number is likely to increase to 36% in 2040, or an estimated 21 million people.[21]

Increasing physical activity amongst the population of CW&C residents will be a key to ensuring obesity, and associated health implications, do not increase in line with trends at the national level. It is therefore important that these communities are well connected by active modes, and that active modes form an attractive alternative to private car use for all or part of journeys to increase levels of walking and cycling and mitigate impacts of obesity. Further health benefits of increased walking and cycling are noted later in Section 4.2 and 4.3.

2.2.6.2 Health indicators

Table 2.2 lists performance against a range of health indicators for CW&C, in comparison to regional and national averages.

This shows that CW&C has a considerably lower under-75 mortality rate from all causes compared to the North West, and a lower rate of people killed and seriously injured on roads when compared to the regional and national average. All other indicators identified are in line with national levels, though it is noted that the proportion of active adults is slightly higher than the national average while the proportion of overweight adults is also slightly higher.

Table 2.2: CW&C health indicators

Indicator	CW&C	North West	England
<75 mortality rate from all causes (rate per 100,000 population), 2023	342.3	408.1	341.6
<75 mortality rate from all cardiovascular diseases (rate per 100,000 population), 2023	75.9	93.8	77.4
Killed and seriously injured (KSI) rate on England's roads (rate per 100,000), 2023	58.8	89.7	91.9
Percentage of physically active adults (%), 2023	72.4	65.7	67.1
Percentage of adults classified as overweight or obese (%), 2023	68.3	66.5	64.0
Year 6: Prevalence of obesity (including severe obesity) (%), 2023	20.2	23.3	22.1
Pregnant women smoking at time of delivery (%), 2024	7.2	8.4	7.4
Smoking prevalence in adults aged 18+ (%), 2023	10.5	11.8	11.6
Admission episodes for alcohol related conditions (rate per 100,000 population), 2023/4	472	501	504
Percentage of physically active children and young people, 2021/22	22.1	24.2	22.3

Source: fingertips.phe.org.uk, Local Authority Health Profiles, CW&C State of the Borough, Public Health England

2.2.6.3 Disability

Table 2.3 and Table 2.4 show Census 2021 disability statistics for CW&C compared to regional and national averages.

[21] Obesity statistics - House of Commons Library (parliament.uk)

Table 2.3: Proportion of disabled residents within CW&C

Indicator	CW&C	North West	England
Disabled under the Equality Act	18%	19%	17%
Not disabled under the Equality Act	82%	81%	83%

Source: ONS, Census 2021

Table 2.4: Proportion of disabled residents within CW&C with no cars or vans in household

Indicator	CW&C	North West	England
Disabled under the Equality Act: No cars or vans in household	36%	33%	28%
Not disabled under the Equality Act: No cars of vans in household	64%	67%	72%

Source: ONS, Census 2021

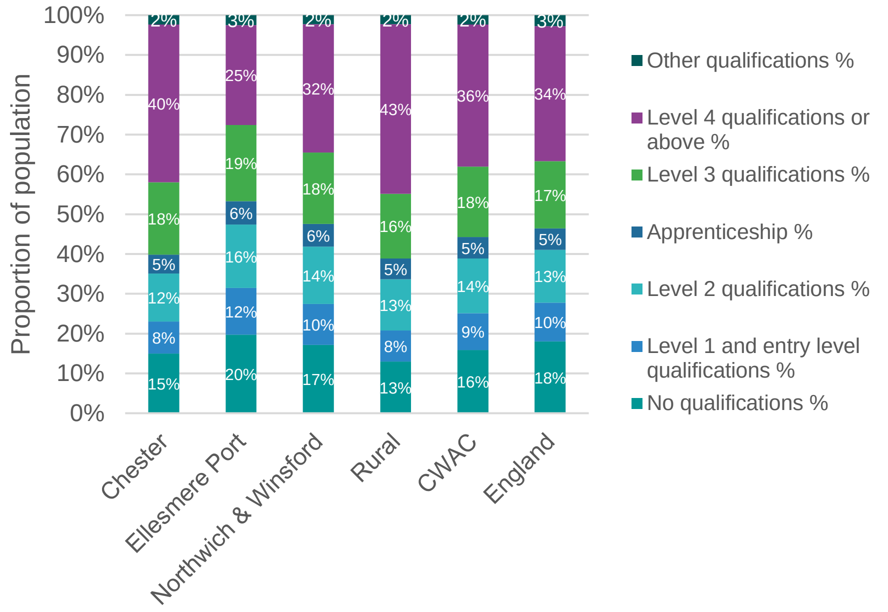
This shows that the proportion of CW&C residents who are disabled under the Equality Act is in line with regional and national averages. However, 36% of disabled CW&C residents live in households with no car or van. This is considerably higher than the regional and national averages of 33% and 28% respectively.

The higher proportion of disabled people without access to a car heightens the need for accessible and well-connected public transport options with a good level of service. This will enable disabled people living in households without vehicles to have an equal opportunity to work and socialise, reducing risk of isolation and adverse health outcomes.

2.2.7 Skills and qualifications

Chart 2.7 shows the distribution of highest qualification levels across CW&C, for the borough as a whole, and for England on average.

Chart 2.7: Highest level of qualification in CW&C

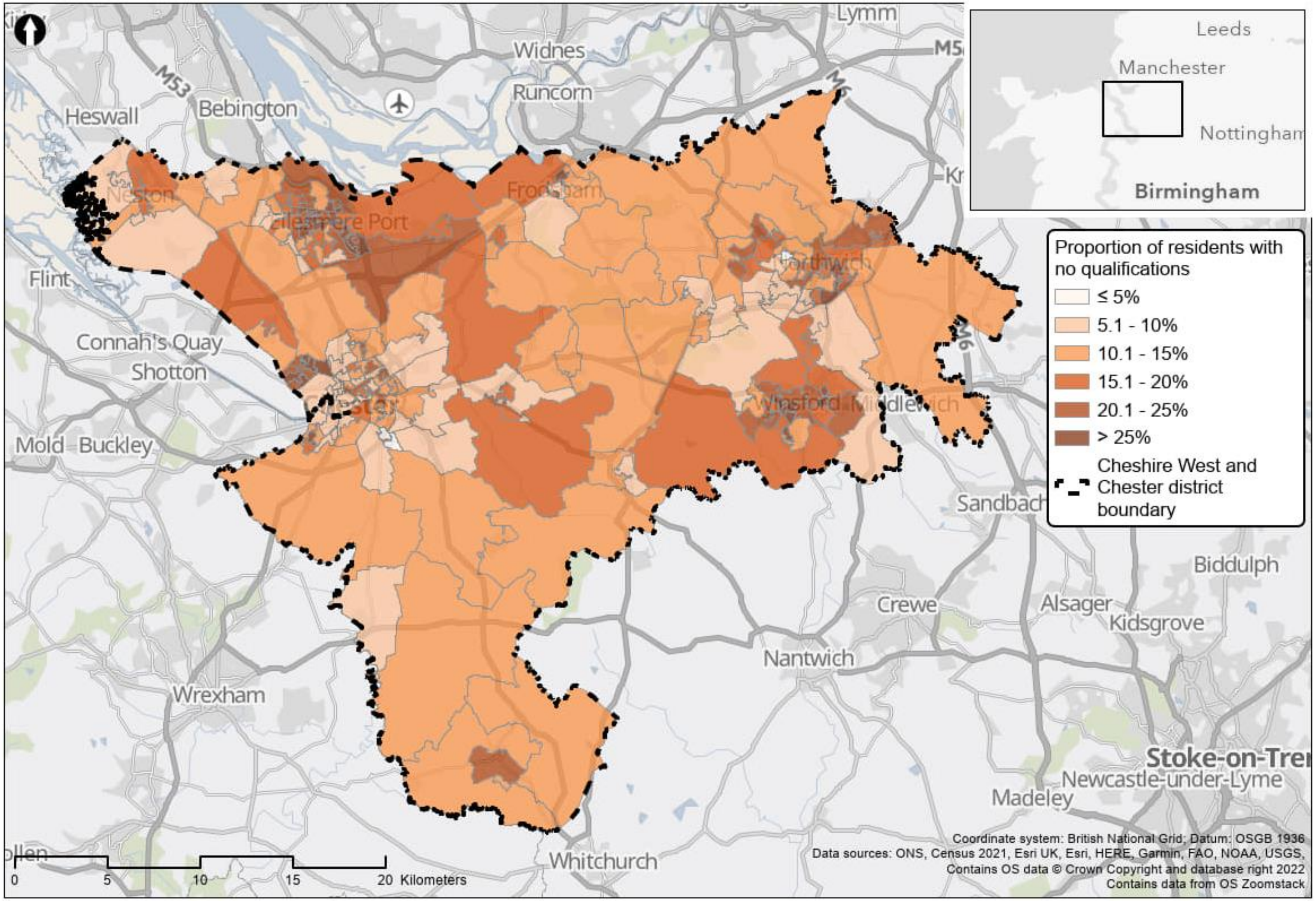


Source: Census (2021), RM047 - Highest level of qualification by country of birth

This shows that CW&C performs well compared to the England average, with slightly lower proportions of the population with no qualifications. However, there are variances in this parameter across different parts of the borough, and generally opposite variation in the category of 'Level 4 qualifications and above'.

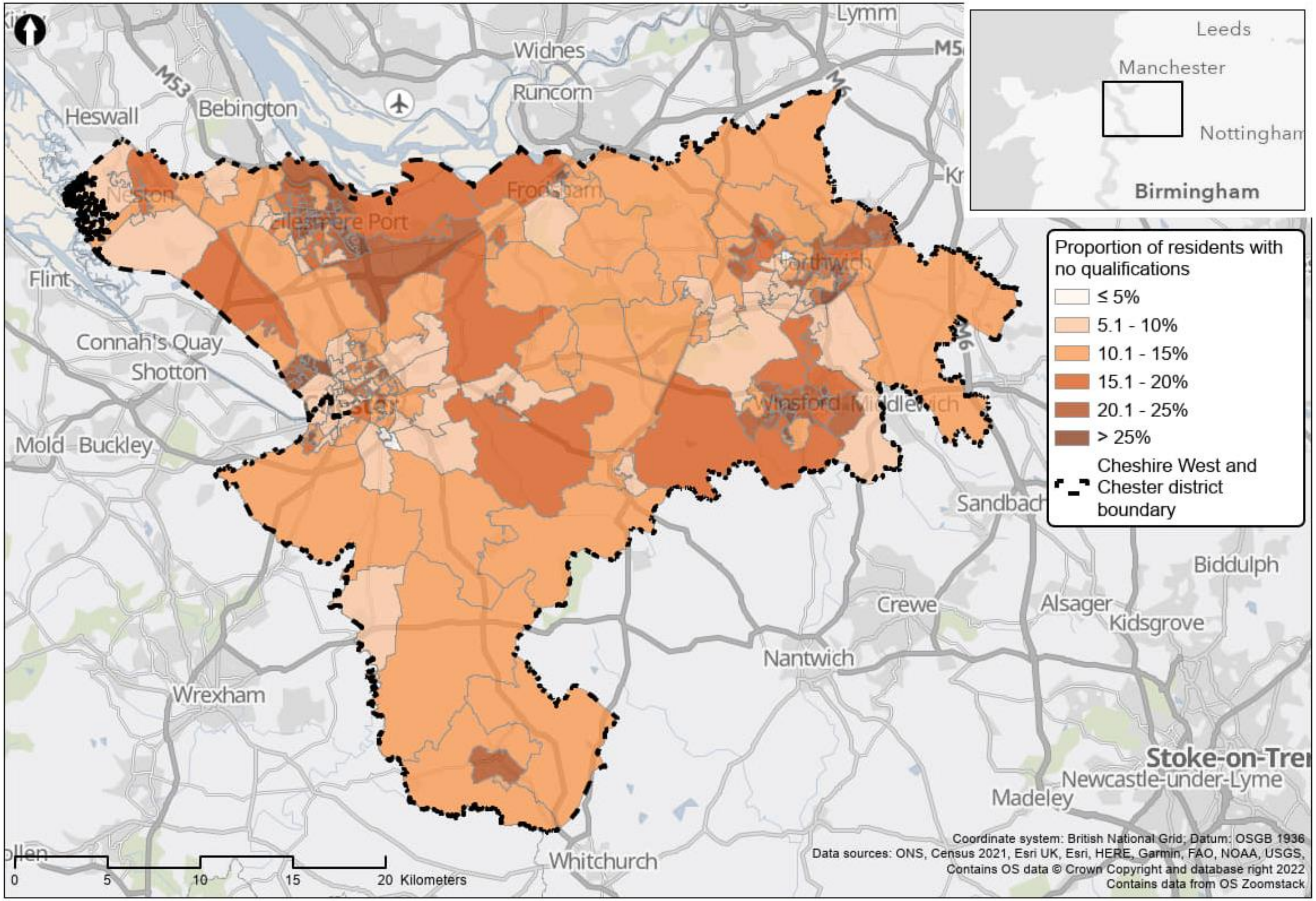
Map 2.12 provides a summary of the spatial disparity in zero-qualification levels in CW&C.

Map 2.12: CW&C proportion of residents with No Qualifications (2021)



Source: Census (2021)

Map 2.12: CW&C proportion of residents with No Qualifications (2021)



Source: Census (2021)

This shows large areas of Ellesmere Port, Winsford, Northwich, Malpas and Blacon on the outskirts of Chester have the highest proportion of residents with no qualifications. These generally coincide with the areas of highest deprivation shown in Map 2.7 above.

Map 2.12 also illustrates lower skilled populations within more rural settlements through the centre of the borough and to the west south of Neston, despite a good range of educational facilities within these areas.

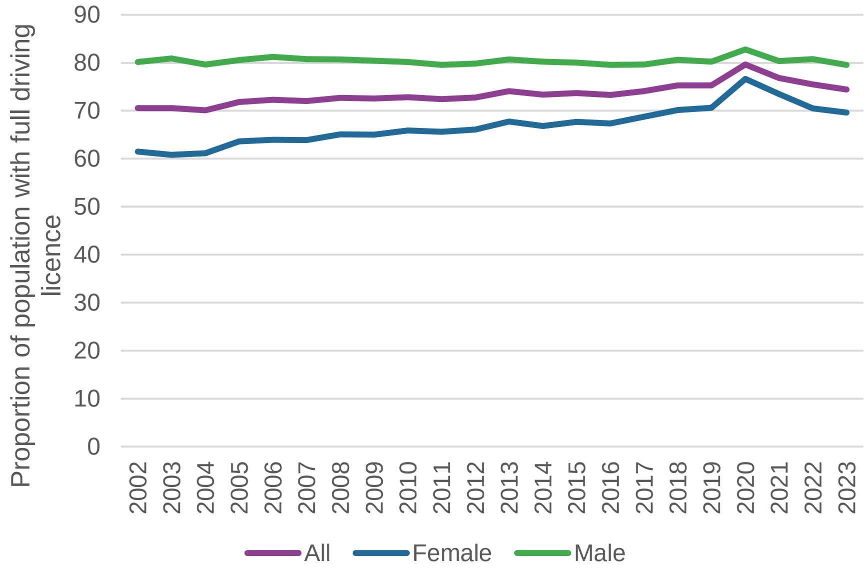
Supporting access to key educational facilities, as well as to jobs and training opportunities, will be required to enable the best life chances for all residents across the borough.

2.2.8 Driving licence rate

The National Travel Survey provides national driving licence holding rates by gender and age group to provide an indication of the proportion of driving age people that hold a license over time. This enables past trends to be observed, and it may be assumed that trends in CW&C follow a broadly similar pattern.

Chart 2.8 shows the proportion of driving-age male and female populations of England holding a full driving licence from 2002 to 2023. This shows that the proportion of males holding a full licence has remained constant around 80% between 2002 and 2023. The proportion of females holding a full licence has gradually grown from around 60% in 2002 to 70% in 2023. In both cases, there was a small spike in 2020, but rates have returned to their usual levels in subsequent years.

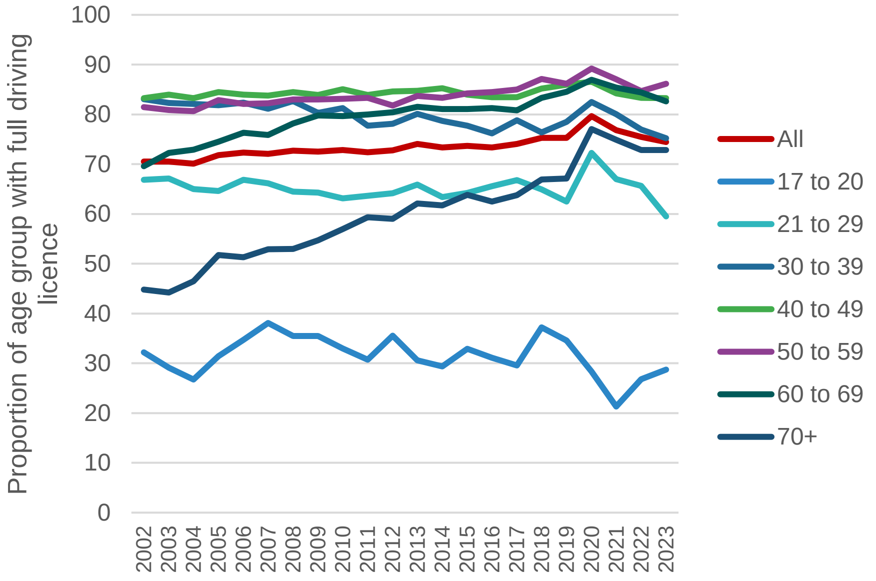
Chart 2.8: Proportion of England driving-age population holding full driving licence, by gender



Source: NTS0201a

The following chart shows the same data, but split by age-group.

Chart 2.9: Proportion of England driving-age population holding full driving licence, by age group



Source: NTS0201a

This chart shows an interesting set of trends where the rate of licence holding among people under 20 has generally declined since 2002, while the rate for people over 60 has seen a steady increase over the same period. The proportion of people aged 20 to 60 with a licence has remained roughly constant within each age group, although there does appear to have been some decline across all groups since 2020. As with licence-holding by gender, there appears to have been a spike in rates in 2020, but these returned to their usual levels in 2021.

The reason for the increase in older age groups will partly be the natural result of younger higher-rate groups growing older over time, but the data also suggests increased take-up within those groups. This could mean that older generations are becoming more car dependent over time.

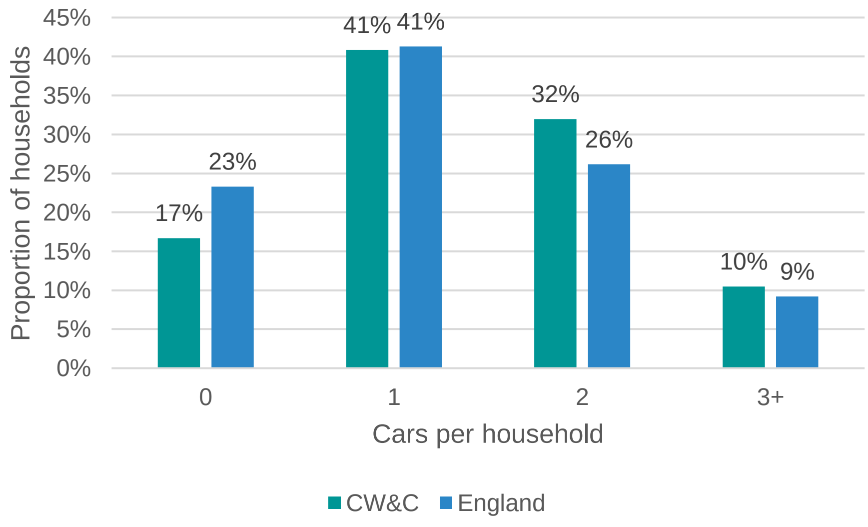
Conversely, there is evidence that younger generations are becoming less car dependent over time, with fewer people holding licences in the younger age group. Though the full reasons for this trend are not clear, it does potentially point to a possible longer term future trend of decreasing car dependence nationally, which may also apply within CW&C.

2.2.9 Car ownership

2.2.9.1 Existing situation

Based on the 2021 Census, Chart 2.10 shows the distribution of households in CW&C and England by levels of car ownership.

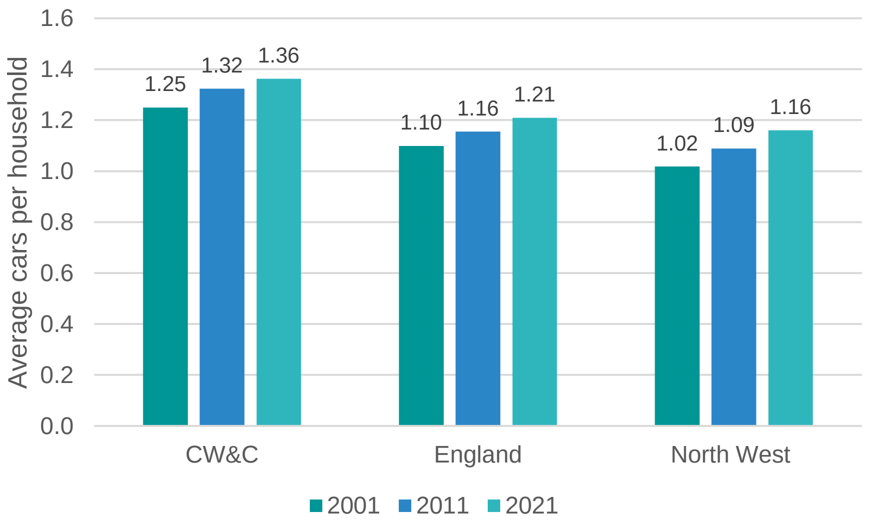
Chart 2.10: CW&C and England household distribution by car ownership



Source: Census 2021

This shows a lower level of households without cars in CW&C compared to the national average. Conversely, there is a higher level of multiple-car households in CW&C compared to the national average. The overall average number of cars per household within CW&C compared to the regional and national average is shown in Chart 2.11 and how this has changed according to the Census over the last 20 years.

Chart 2.11: Average cars per household in CW&C, North West and England 2001-2021



Source: Census 2001, 2011 and 2021

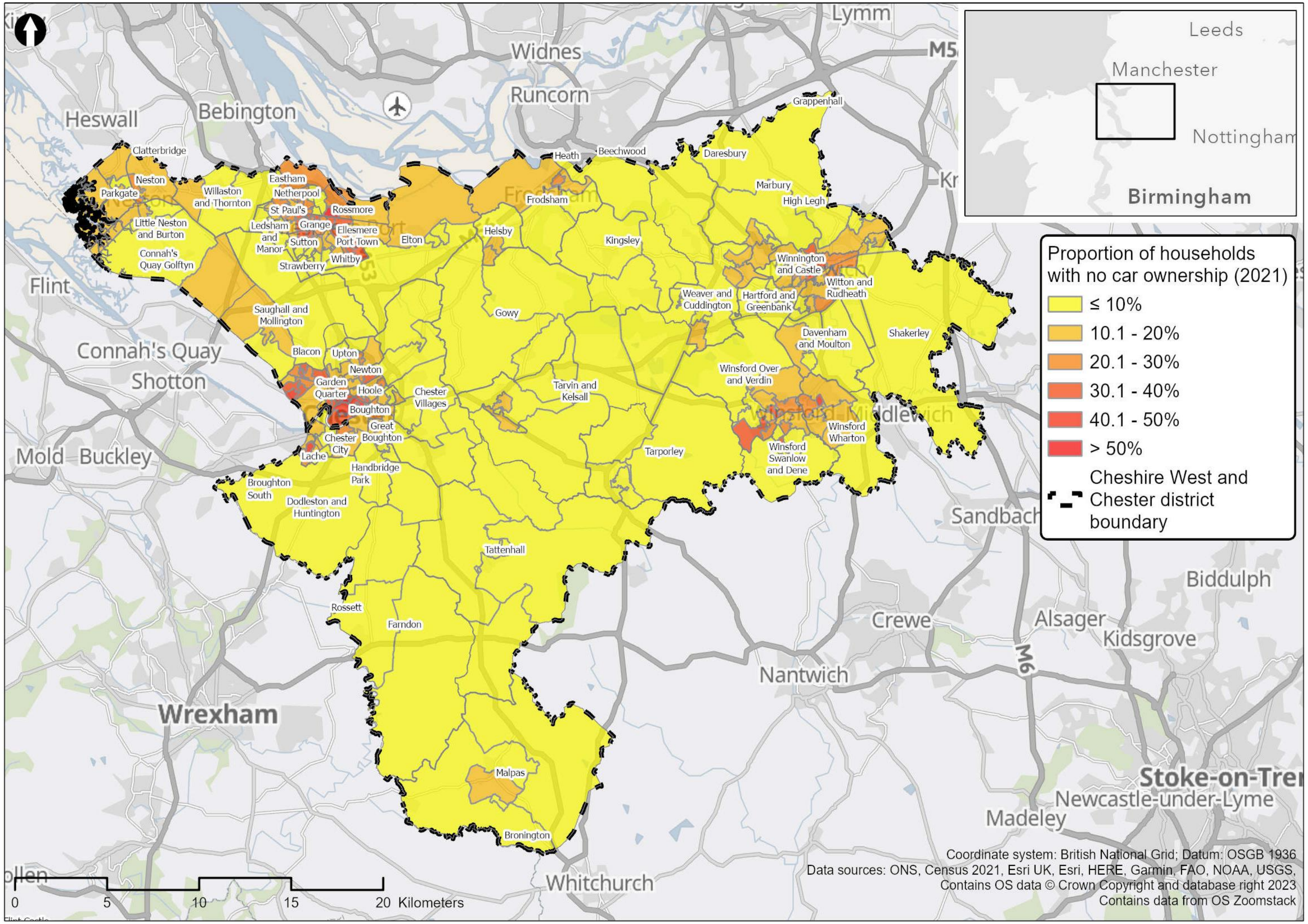
This shows that, on average in 2021, CW&C households had access to about 8% more cars than the national average. Chart 2.11 also shows how the average number of cars per household across all three geographies has gradually increased within census interval periods. The rate of increase in car ownership amongst CW&C residents has been similar to those at national and regional levels, but the average number of cars per household in the borough remains above that seen across the North West and England as a whole.

Map 2.13 shows how the proportion of residents with no access to a car is distributed across CW&C. This shows low levels of zero car ownership across most of the borough, with the highest proportion of residents without access to a car being predominantly within and around urban areas where greater alternative travel options are available, but also coinciding with the most deprived areas shown in Map 2.7 above.

Access to economic opportunities and key services by public transport is explored in Section 0 and 3.5. This analysis shows the challenges facing those that depend on alternative modes. This deficit of alternatives combines with the relatively low level of car ownership to create a significant accessibility issue for the local population to key centres of attraction. Levels of accessibility are worst in areas such as Winsford (to the south of the town centre), the outskirts of Northwich, and small parts of and areas to the north of Ellesmere Port, where a high proportion of households also do not have access to a car (See Section 2.3.4). This is also demonstrated within Table 2.5 which shows the 10 wards across the borough with the highest levels of no car households. A number of these neighbourhoods rank in the top 20% most deprived in England (Decile 1 or 2). These include Wolverham, Northwich, Leftwich, and Blacon. This highlights the link between the lack of transport opportunity in these areas, social isolation and transport-related poverty.

In addition, car ownership is high across the majority of the borough and therefore often forms the dominant mode of travel for key trips (see Section 2.3.40). Reducing car dependency and associated vehicle emissions to achieve carbon reduction targets in line with regional and national policy is therefore likely to be a key consideration.

Map 2.13: CW&C proportion of households with no access to a car or van



Source: Census (2021)

Table 2.5: Wards with highest % of CW&C households without access to a car

Ward	% of households without access to a car
Chester City & the Garden Quarter	37%
Blacon	32%
Central & Grange	31%
Wolverham	30%
Westminster	30%
Lache	27%
Northwich Leftwich	25%
Northwich Witton	24%
Winsford Wharton	23%
Newton & Hoole	23%
Sutton Villages, Neston and Netherpool	21%

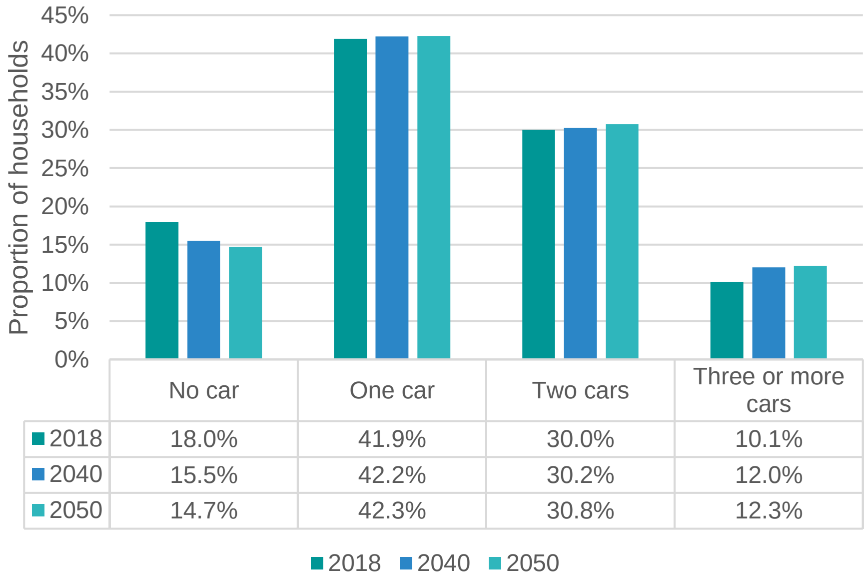
Source: Census (2021)

2.2.9.2 Future car ownership

The DfT host a National Trip End Model (NTEM) to forecast the growth in trip origin-destinations (or productions-attractions) up to 2051 for use in transport modelling. This includes an estimate of future changes in car ownership.

Based on 2018 NTEM data for CW&C extracted by Transport for the North (TfW), the following chart provides an estimate of future car ownership levels in 2040 and 2050, using the NTEM Core scenario forecast.

Chart 2.12: NTEM car ownership projections for CW&C



Source: NTEM 2018

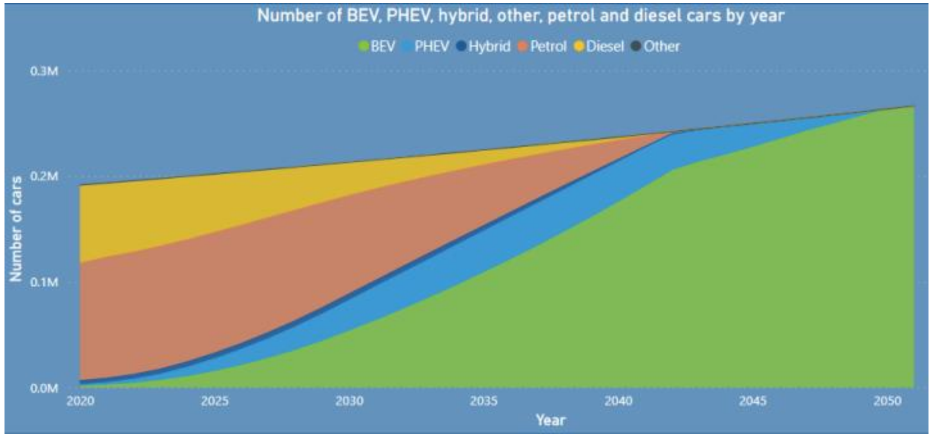
This shows the proportion of no-car households continuing to decrease in future, with most of the growth in car ownership being in multi-car households.

It is also noted that the composition of the future vehicle fleet is predicted to change with the continued roll out and uptake of Electric Vehicles and supporting infrastructure.

The Council have developed an Electric Vehicle (EV) Charging Infrastructure Strategy (2023-2027) which aims to support the roll-out of more electric vehicle charging infrastructure to support wider aspirations for ‘net zero’ emissions by 2045.

Chart 2.13 shows projections of EV uptake in CW&C to 2050, including the scenario of the proposed 2030 ban on the sale of new petrol and diesel cars.

Chart 2.13: Projected uptake of EVs in CW&C by fuel type 2020-2051



Source: CENEX, within CW&C Electric Vehicle Charging Infrastructure Strategy (2023-2027)

At the national level, 48% of respondents to the National Travel Attitudes Study (NTAS) conducted in August 2020 indicated they would be likely to buy an ultra-low emission car (either a plug-in hybrid or a battery electric car) the next time they purchase a car.

These projections emphasise the need to support the roll out of charging infrastructure across the borough and wider aspirations of the Electric Vehicle (EV) Charging Infrastructure Strategy. Statistics on current levels of EV ownership within the borough are provided within Section 4.8.

2.2.10 Digital connectivity

Digital infrastructure is an important consideration within transport planning, supporting demand management measures and increasing access to key digital services amongst communities. Provision of digital infrastructure offers communities the opportunity to reduce the need to travel and increase accessibility to transport services and related information.

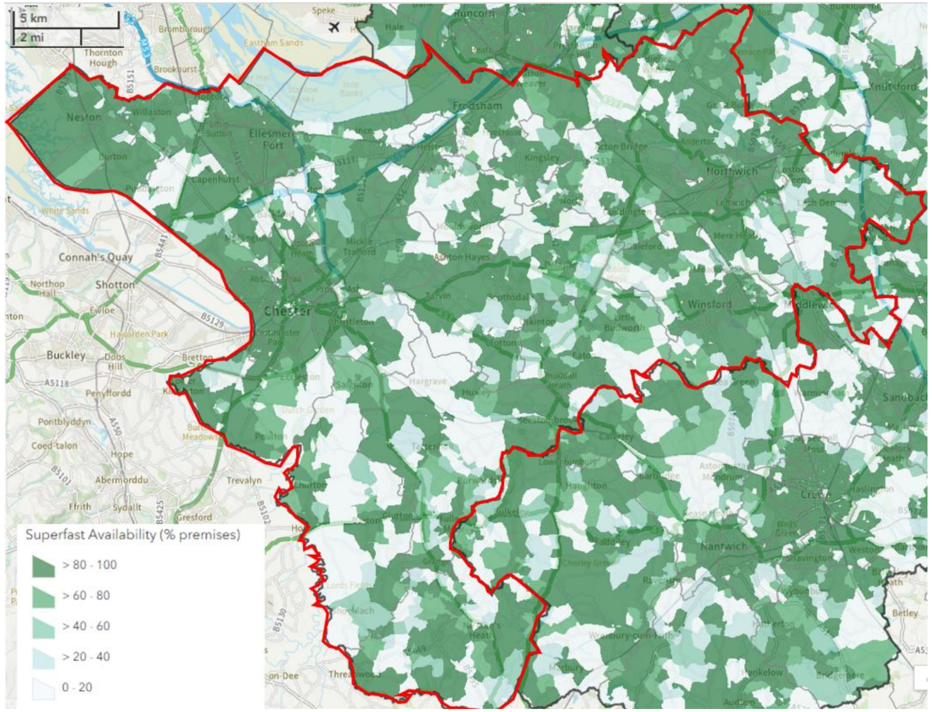
CW&C has been increasing the usage of digital technology over recent years to make services and places more successful, but there are a number of key challenges and opportunities both within CW&C and across the UK to address to enhance future success[22]:

- 88% of UK adults have access to a smartphone, and 95% of these smartphones are used every day
- 7% of the borough are currently digitally excluded. At least 25,000 residents are at risk of digital exclusion in CW&C, two thirds of which are within the older population. Most are from less affluent backgrounds. Survey suggests key reasons for this are lack of interest (11%), lack of skills (39%), privacy and security concern (30%), affordability (20%)
- Over 90% of CW&C residents use the internet on a regular basis in their everyday lives
- 94.6% of premises in the borough have access to superfast broadband speeds (30mbps or greater), but just 26.8% of local premises are able to access ultrafast broadband (300mbps or greater) – well below the national average of 54%
- 8% of premises within CW&C are connected to full fibre infrastructure – which is below the national average of 12%
- 90% of the borough is covered by a 4G signal from one or more mobile networks

[22] Towards a Digital Borough

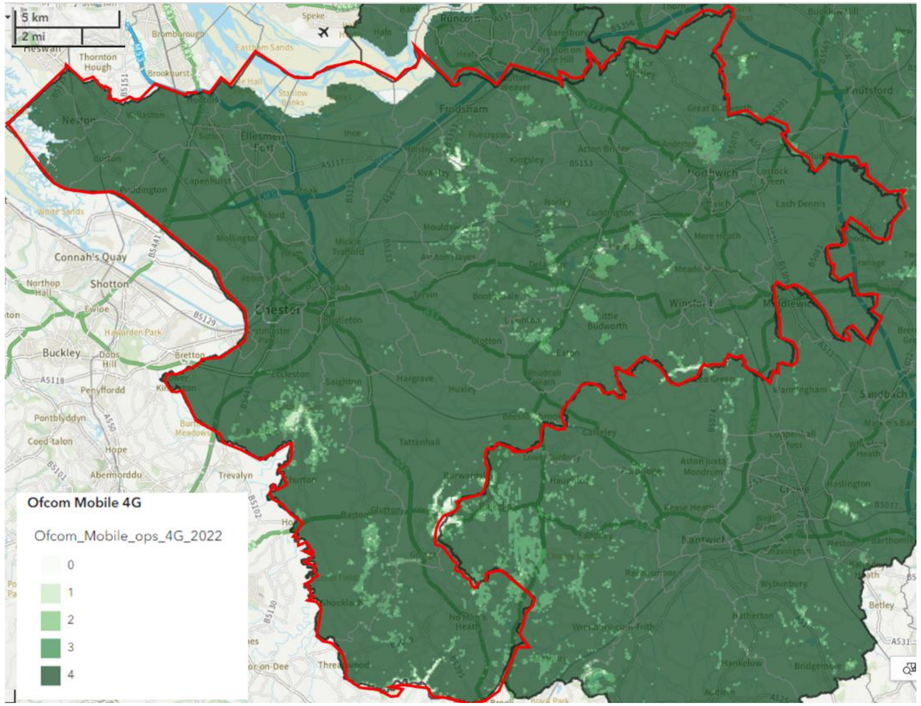
Map 2.14 and Map 2.15 below respectively illustrate the availability of superfast broadband and 4G mobile coverage across the borough.

Map 2.14: Superfast broadband availability across CW&C



Source: OfCom Connected Nations (Spring 2023), CW&C Farrpoint Mapping Portal

Map 2.15: Mobile 4G Coverage across CW&C



Source: OfCom Mobile Ops 4G 2022, Cheshire West and Chester Farrpoint Mapping Portal

Map 2.14 shows significant variability of superfast broadband across the borough, with large areas where less than 20% of premises are connected. However, when comparing this to population density (Map 2.1), these areas are largely sparsely populated rural areas with the majority of densely populated areas around the key urban centres provided with good coverage.

In addition, Map 2.15 shows a high level of mobile 4G coverage across the majority of the borough, with small exceptions in rural areas south of Chester, south of Frodsham / east of Helsby, and towards the boundary of the borough south of Tattenhall.

It is important to consider that a good level of infrastructure to provide coverage of mobile and broadband does not directly translate into high levels of digital connectivity. Consideration of the population's propensity to access services digitally is therefore required to understand the level of digital connectivity across CW&C and its opportunities. This is explored fully within Section 2.3.4.

Demographics – key findings

- 35% of CW&C's total population reside within rural areas. The borough had a total population of 361,799 in 2022.
- CW&C's population is growing and at a faster rate than the national average since 2011. This naturally will continue to result in more demand for travel.
- 21.3% of CW&C's population is aged 65 and over, compared to the national average of 18.5%. This is indicative of an ageing population across the borough with particular health and accessibility requirements.
- Given that many of the older residents live in more rural areas, this will create a need for strong rural connectivity solutions.
- CW&C's population is forecasted to grow at a faster rate than the North West and England, with an increase of 13.1% expected between 2018 and 2040, bringing total population to over 385,000 residents by 2040.
- For youth social mobility, CW&C ranks 303 out of 324 local authorities in England in terms of overall social mobility and is identified as a 'cold spot' for youth social mobility.
- The average number of cars per household in CW&C is above the regional and national average, and has been over the last 20 years.
- 24,000 residents across 16 small neighbourhoods are within the top 10% most deprived nationally.
- Over 30% of all wards within the borough are below the English average for Healthy Life Expectancy (HLE) at birth. However, national HLE is forecast to increase creating the need to ensure a greater proportion of the population has good access to health services.
- 25% of CW&C's population aged over 16 have no qualifications or highest level 1 qualifications, though this is lower than the national average of 28%.
- Increasing connectivity to key health services, as well as educational facilities, jobs and training opportunities is essential to tackle deprivation, and low levels of qualifications. Low Healthy Life Expectancy (HLE) is experienced in a number of communities across the borough, particularly around areas of Ellesmere Port, Winsford and Northwich.
- The proportion of active adults is slightly higher than the national average, and the proportion of overweight adults is slightly higher.
- 17% of LSOAS across the borough have no access to a car or van, compared to the national average of 23%.
- The proportion of the driving-age population holding a full licence in England increased from 70% in 2002 to 75% by 2023.
- 7% of the borough are currently digitally excluded. At least 25,000 residents are at risk of digital exclusion in CW&C.
- Projected increase in EVs in the borough, and national targets on the ban of petrol and diesel cars, means that CW&C needs to have accessible EV infrastructure to keep up with the future demand.

2.3 Accessibility

2.3.1 Triple Access System

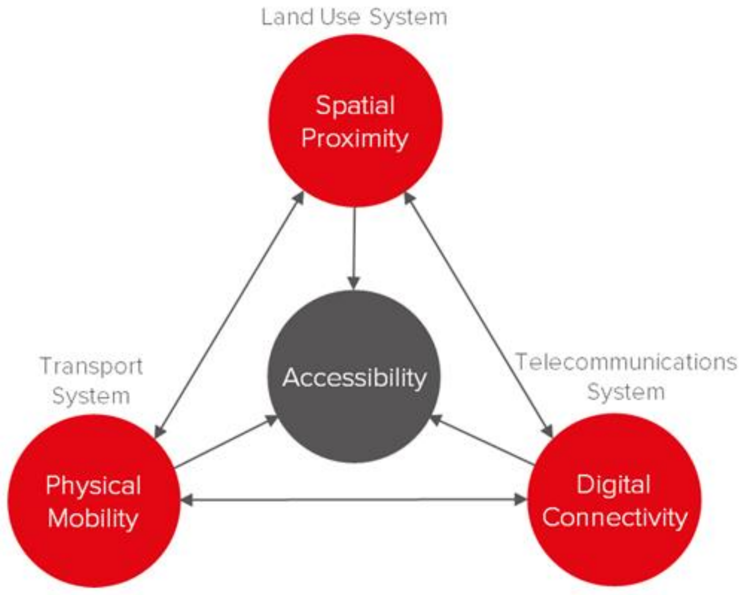
The primary function of the transport system is to provide people and businesses with access to essential services, jobs and opportunities, with the quality of access contributing to the health of communities and the economy. Triple Access Planning (TAP) recognises that access to services, jobs and opportunities can be achieved today through:

- the transport system (transport access)
- the land-use system (physical access), and
- the telecommunications system (digital access)

Together these constitute a Triple Access System (TAS – see Figure 2.1).

An analytical approach has been developed to help visualise the current TAS within CW&C and its potential through the three access systems. The approach to developing each strand of the TAS is summarised in the sections below.

Figure 2.1: The Triple Access System



Source: G. Lyons and C. Davidson 2016. Guidance for transport planning and policy making in the face of an uncertain future

2.3.2 Land use/spatial proximity (physical access)

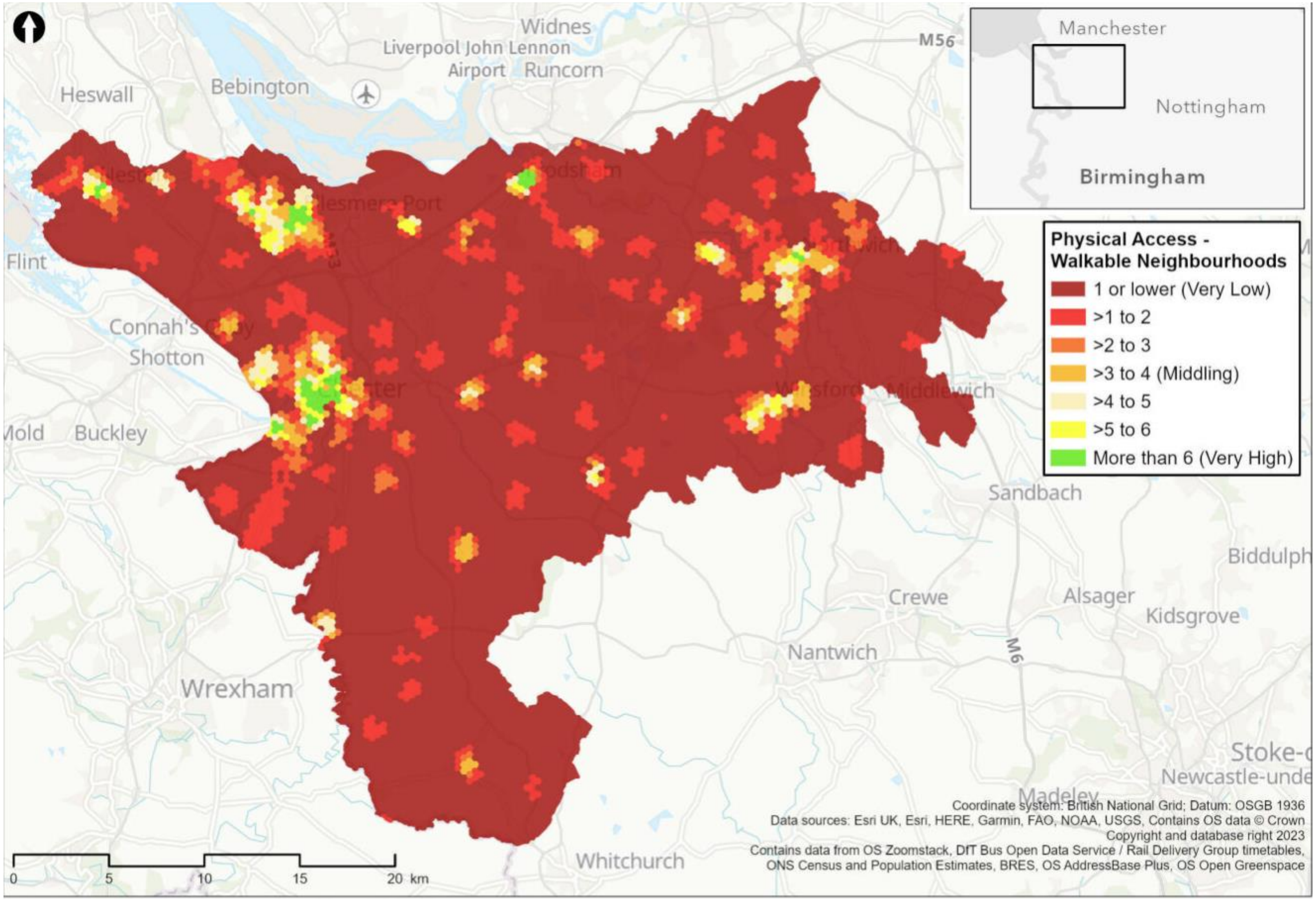
CW&C has been assessed in terms of access to a range of amenities considered important for everyday sustainable living, to explore the availability of key local services and amenities within short walk distances of home as an alternative to using the car. This comprises generating 10-minute walking isochrones to identify access to a range of amenities and constructing a 'heatmap' from these that illustrates what level of access to amenities different areas have. For this analysis, 20 minutes is defined as the round-trip duration, so access is measured according to a 10-minute reachability. The amenities considered include:

- Healthcare – GP surgeries and dentists
- Pharmacies
- High frequency public transport access points – i.e. stops and stations with a minimum average daily frequency of 2 service per hour and a minimum peak frequency of 4 services per hour. This amenity is included to support sustainable access to a wider range of amenities than is available with a 20-minute walking round-trip
- Local centres, which are taken as a proxy for the provision of everyday shopping (e.g. food) needs, and services not included in other amenities, such as banking and postal services
- Open space and fitness amenities, including greenspace access points, play areas and sports and fitness amenities
- Cultural and social amenities, including places of worship, cinema and theatres, libraries and community centres
- Primary education including primary schools and creche/pre-school amenities

The results of this physical access analysis for CW&C are shown against a normalised score scale in Map 2.16.

This plot shows the highest levels of physical access around the key centres of Chester, Ellesmere Port, Northwich and Winsford where amenities and local services are centred, as well local centres such as Frodsham, Neston and Helsby. As well as reflecting the better coverage of amenity types, the scores also reflect more extensive and better-connected pedestrian networks in these built-up areas.

Map 2.16: CW&C Physical Access – walkable neighbourhoods



Source: Mott MacDonald

2.3.3 Transport system/physical mobility (transport access)

The access facilitated by the public transport system is assessed in terms of the access it provides to jobs. Access to jobs is estimated by identifying the number of jobs within 30 minutes by public transport journey time of every LSOA in CW&C within the AM peak. Job numbers are derived from the Business Register and Employment Survey (BRES). The results of this physical access analysis are presented on a normalised score scale in Map 2.17.

This shows the highest levels of accessibility to jobs in and around Chester and Ellesmere Port, with low levels of accessibility experienced in other urban centres such as Winsford and Northwich, and the lowest levels within the remaining rural areas. The levels of public transport access identified on the map reflects the number of public transport services, their frequencies, and potential for interchange available, to both the population resident in each LSOA as well as at the employment endpoints.

2.3.4 Digital access

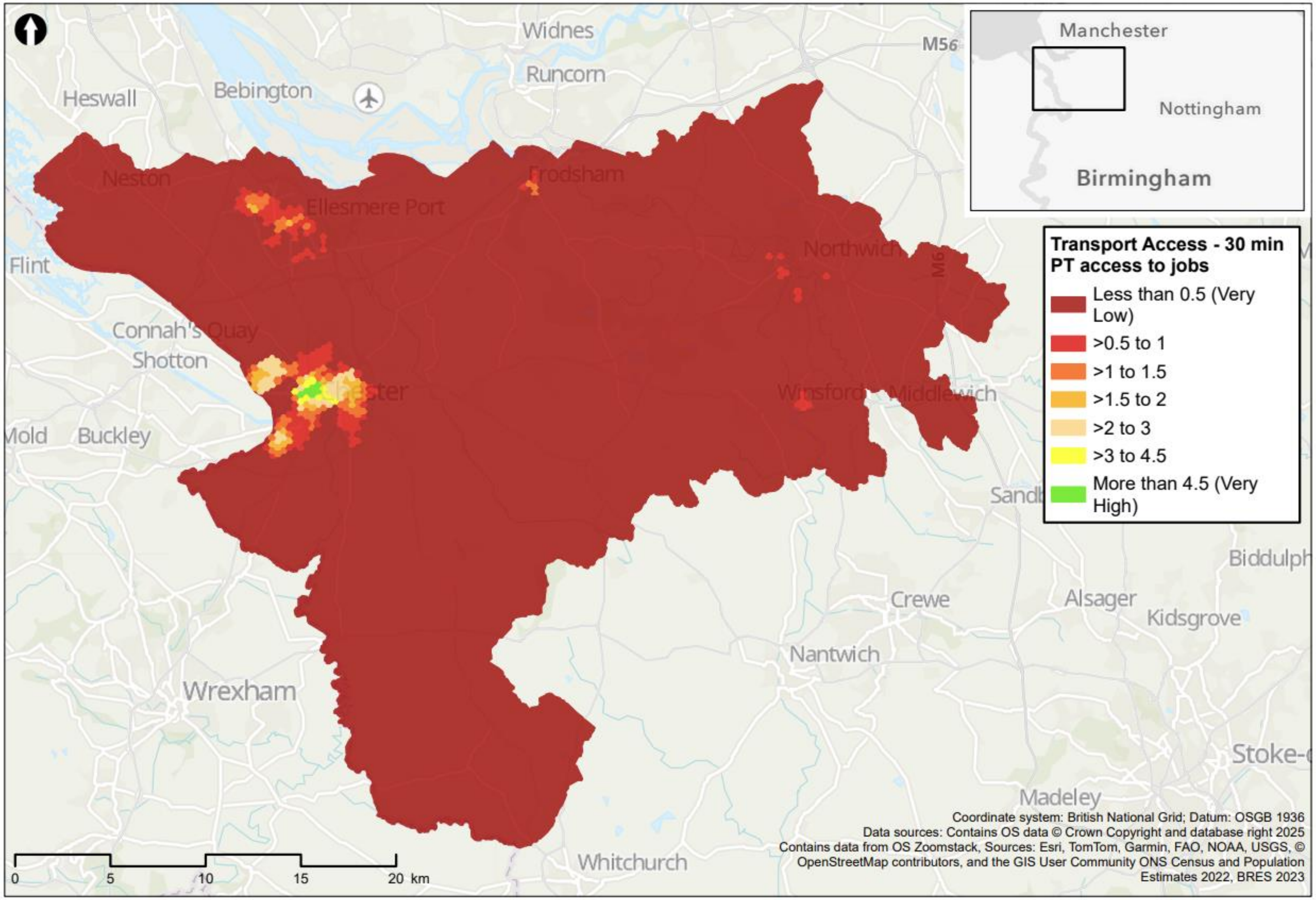
As most of England has access to high quality broadband today, Internet User Classification data has been used from the Consumer Data Research Centre (CDRC) to understand the propensity of residents to access services digitally. CDRC describe this data as providing “aggregate population profiles of Internet use and engagement”, and as such reflects where digital access may be limited by engagement or confidence issues rather than by infrastructure. The results of this assessment for CW&C are shown against a normalised score scale in Map 2.18 overleaf.

The highest levels of digital accessibility within this plot are centred around Chester, Northwich and, to some extent, Ellesmere Port. The area around the Ellesmere Port Industrial Area, Malpas, the outskirts of Northwich and Neston are shown to be the areas with the lowest levels of digital connectivity.

The area around the Ellesmere Port Industrial Area, Malpas, the outskirts of Northwich and Neston are shown to be the areas with the lowest levels of digital connectivity within Map 2.18. Lower levels of digital access in these areas are likely a result of either industrial or rural land uses, concentrations of older populations, deprivation and lower levels of skills and qualifications (as evidenced in Section 2.2).

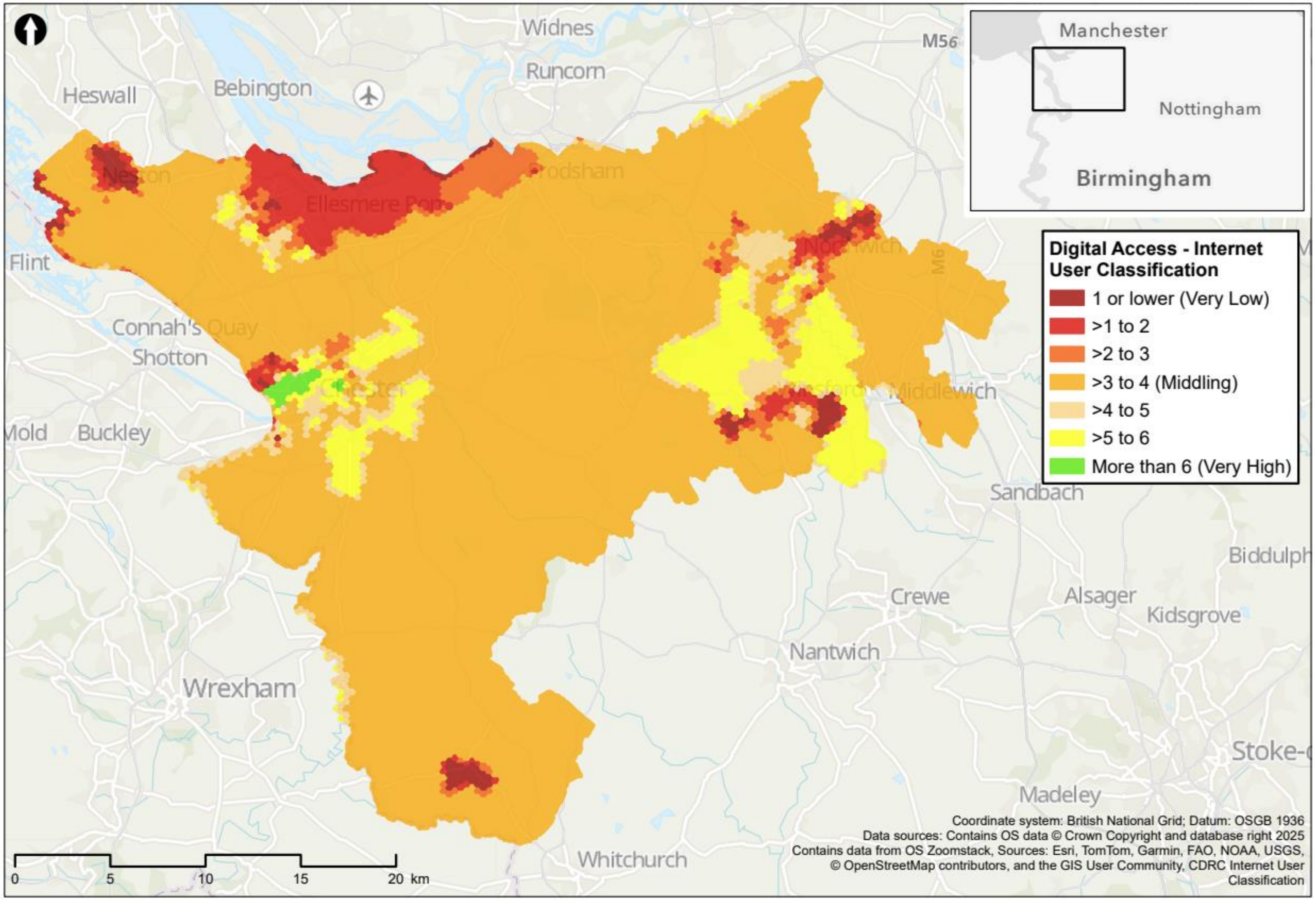
The area around Ellesmere Port is also shown in Section 2.2.10 to have poor broadband and mobile coverage. Although there is good mobile coverage around Malpas, the outskirts of Northwich and Neston, there are areas with poor broadband coverage further limiting access to digital services and facilities.

Map 2.17: CW&C Transport Access – 30 min PT access to jobs



Source: Mott MacDonald

Map 2.18: CW&C Digital Access – Internet User Classifications



Source: Mott MacDonald

2.3.5 The Triple Access System

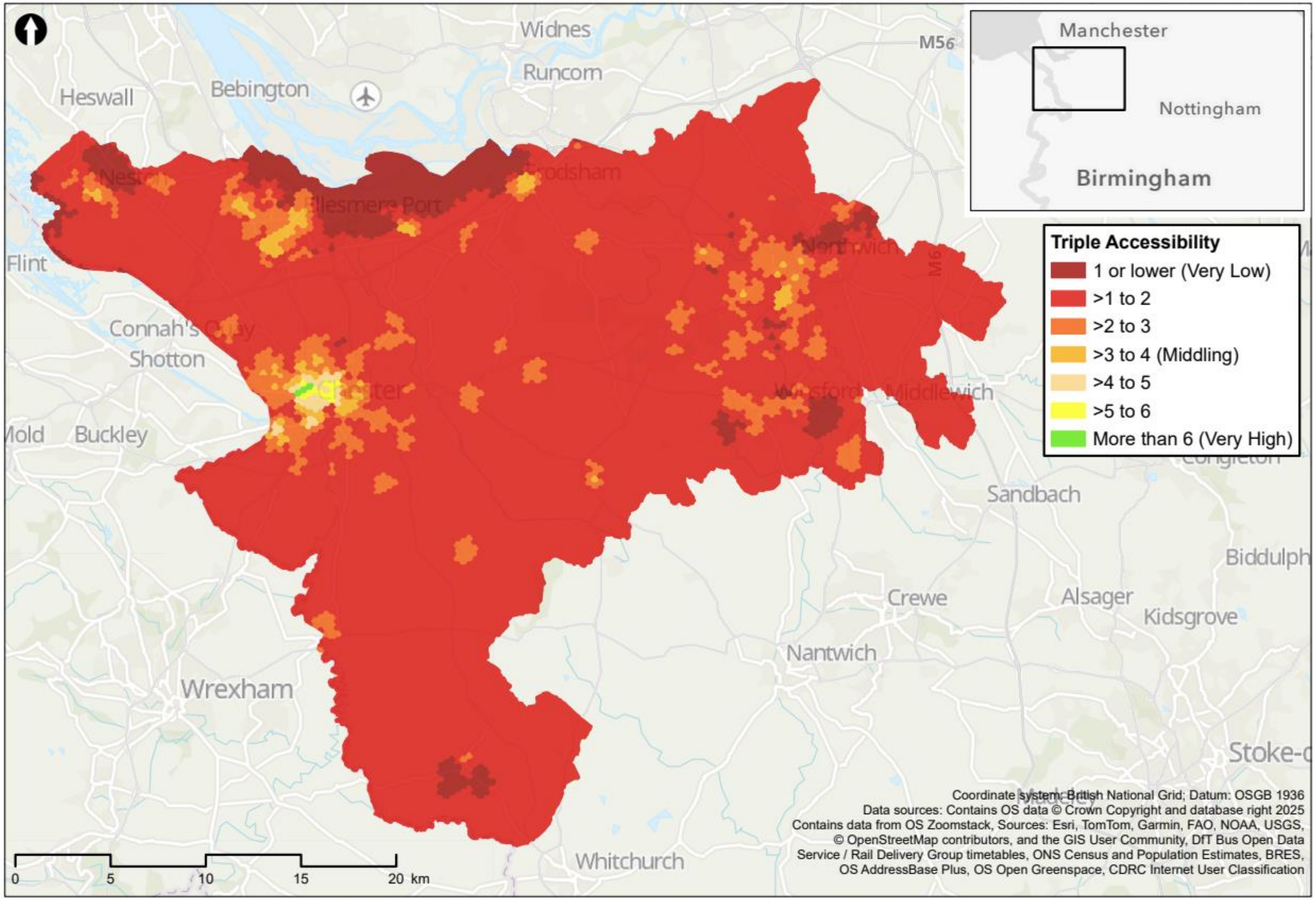
The analysis of each TAS pillar listed above is mapped to a fine-grained grid that covers the CW&C boundary, meaning that each cell in the grid captures its portion of the score from the respective analysis. The cell size for this grid is chosen to be small enough that it does not obscure detail, which is particularly relevant when looking at spatial proximity in terms of walking access. The scores reflect how good (or otherwise) the access is for someone in that location.

The scores are then normalised so that each pillar's score falls within the same range, and finally the scores are combined together with equal weighting to give an aggregate TAS score. Map 2.19 overleaf presents the initial results of this analysis, which shows the combined Triple Access System view for CW&C, composed from the three separate layers described above:

- the Physical Access layer, i.e. walkable neighbourhoods analysis (Map 2.16)
- the Transport Access layer, showing jobs accessible within 30 minutes journey time by public transport based on home LSOA centroid (population weighted) (Map 2.17).
- the Digital Access layer, i.e. Internet User Classifications (propensity/ability to use the Internet (Map 2.18)

The Triple Access System gives a holistic view of access to amenities and services. This combined Triple Access plot shows the highest levels of accessibility around the urban areas of Chester, Ellesmere Port and Northwich, with poorer access in more rural areas where there are fewer amenities, sparser public transport provision, and lower levels of digital access. However, areas identified with low levels of accessibility (particularly in relation to transport and digital) around Northwich, Ellesmere Port and Winsford are also key areas of employment and opportunity across the borough (See Section 3.2.2 and Section 3.2.3). It is therefore important to ensure connectivity within these areas is improved to promote growth and success through maximising accessibility.

Map 2.19: CW&C Triple Access System



Source: Mott MacDonald

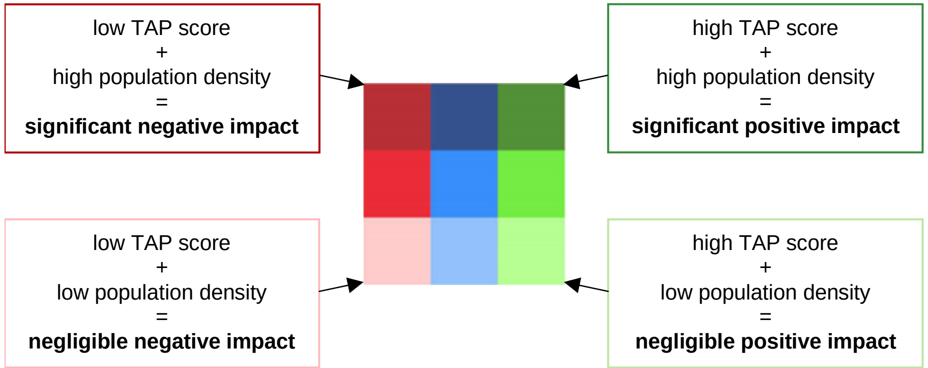
2.3.6 Transport poverty areas

In order to build on this analysis and identify people and places most at risk of transport related social exclusion, additional socio-economic data has been layered onto the above TAP mapping to help identify areas of potential transport poverty. Map 2.20 below refines the TAP map by showing how it affects population areas in CW&C, on the basis that the impact of the TAP score increases as the affected population density increases. The map combines two variables as follows:

- The TAP score is represented by the three colour scale, with red representing a low TAP score, blue medium, and green a high TAP score
- Population density is represented by the shading of each TAP colour, with lighter shades representing a low population density and darker shades representing a high population density

To aid understanding of this map, Figure 2.2 clarifies interpretation of the key, showing that darker red colours highlight areas of potential transport poverty.

Figure 2.2: Map key interpretation

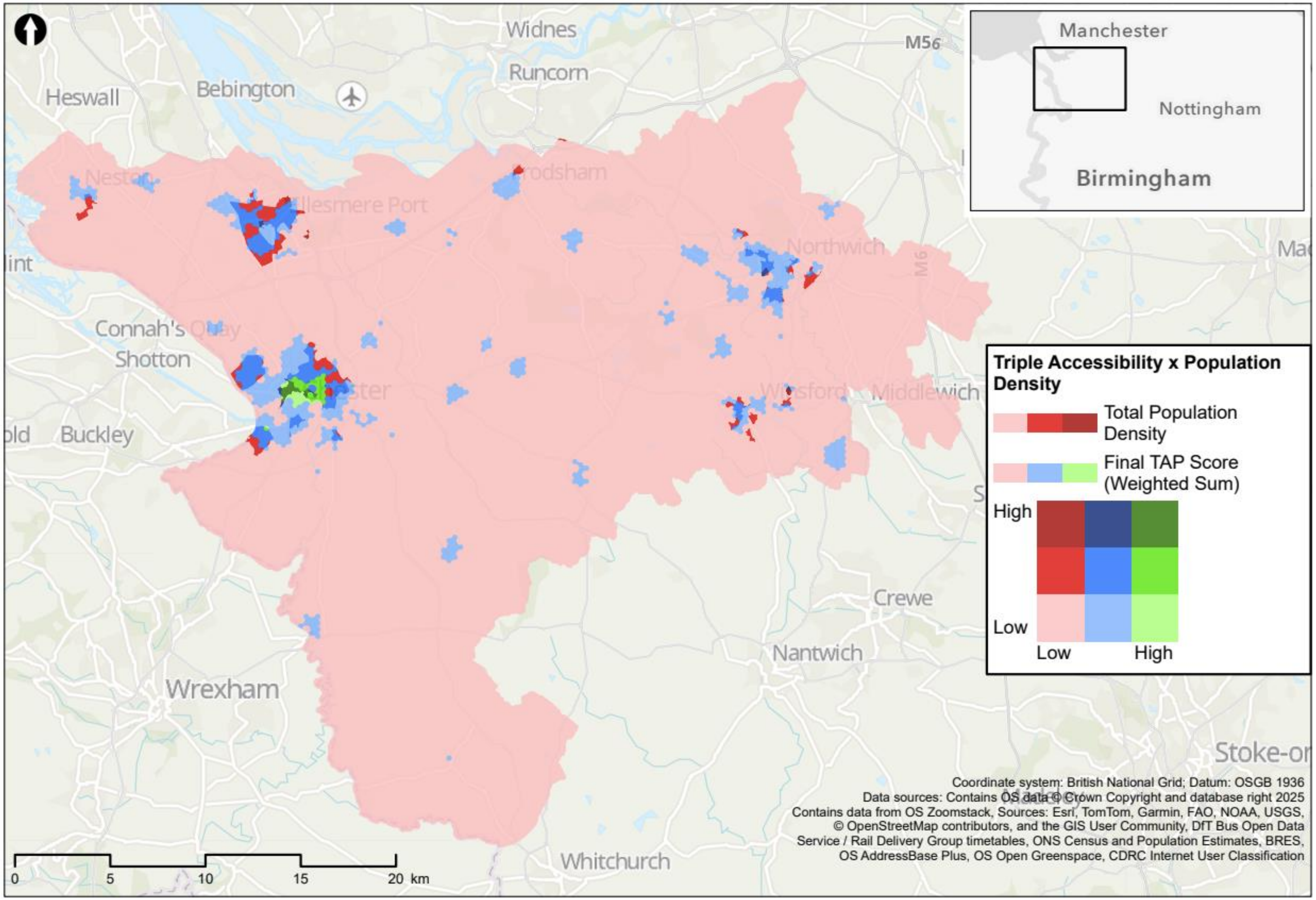


Map 2.20 shows most of the darker shaded areas of Chester, Ellesmere Port, Northwich and Winsford are coloured either green or blue, showing medium to high Triple Access scores in the most populated areas. This is also reflected within the National Infrastructure Commission's analysis of intra-urban and inter-urban connectivity which shows areas of Northwich and Weaverham within the bottom ranked places across the North West for inter-urban connectivity by public transport[23].

Most rural parts of CW&C show low Triple Access scores, but also low population density. There are a few areas of the darkest red shading, which represents high population density, in the least accessible areas. There are small pockets in Chester, Ellesmere Port, Neston, Frodsham, Northwich and Winsford. However, there are more widespread areas of moderate red shading, which represents the lowest triple access scores in moderately populated areas. These can be seen on the outskirts of all settlement areas. This is a typical characteristic of suburban / urban sprawl and linear developments in villages and small towns, where density of development can make amenity and public transport provision unsustainable, where poorly connected pedestrian (e.g. 1980s housing estates with cul-de-sacs and no cut throughs) and public transport networks all contribute to poor access.

[23] https://nic.org.uk/data/all-data/transport-connectivity/

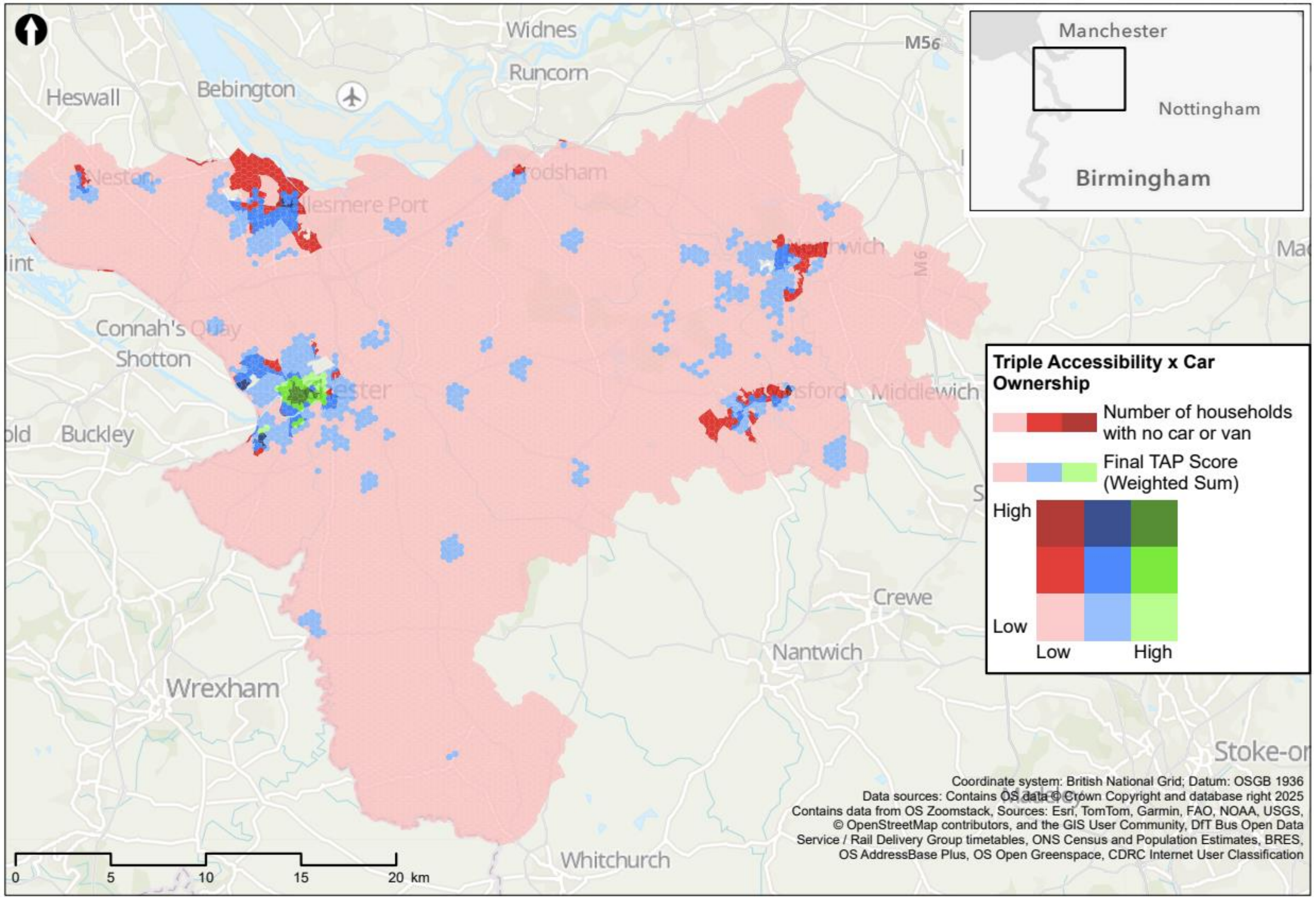
Map 2.20: CW&C Triple Access score vs population density



Source: Mott MacDonald

Of the populated areas which show low Triple Access scores, the ones most at risk of transport poverty are those also with low levels of car ownership. The above is therefore further refined in Map 2.21 below by replacing population density with the density of households with no car. The map key works in the same way as shown in Figure 2.2 above, where the darker shades of red highlight areas of greatest potential transport poverty.

Map 2.21: CW&C Triple Accessibility vs density of no-car households



Source: Mott MacDonald

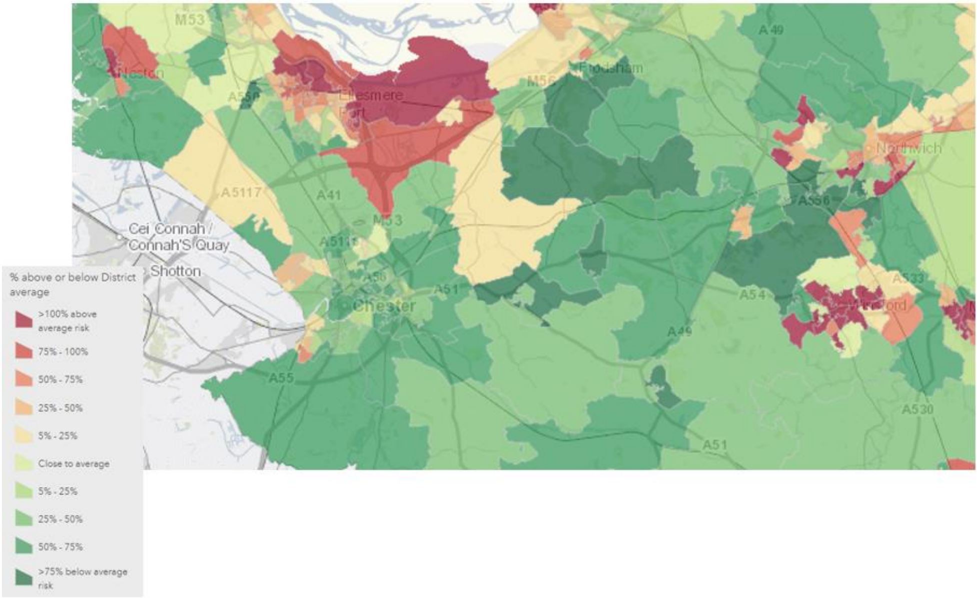
Map 2.21 indicates just a handful of areas where low car ownership and low accessibility overlap. These are located on the outer fringes of Chester, the east side of Ellesmere Port, the east side of Northwich, the west side of Winsford, the north side of Neston, and the east side of Frodsham. Accessibility improvement measures should be particularly focussed on these areas. It is important to note that the high accessibility and low car ownership score seen in Chester may reflect people with good access to services without the need for a car, as well as the difficulty of car ownership in city centres in relation to parking.

Transport for the North (TfN) have also undertaken extensive analysis on the causes, consequences, and extent of transport-related social exclusion (TRSE) in the North of England. This analysis considers fragmentation, unreliability, and high costs in the public transport system, poor conditions for walking, cycling, and wheeling, and high levels of car dependency. The results of this analysis across CW&C are illustrated in Map 2.22, which compares the risk of TRSE in a selected area to the average for the Local Authority District the area is in, and provides a local risk comparison.

These results broadly align with those shown in Map 2.20 where areas at risk of TRSE are largely within the outskirts of urban centres. The TfN mapping shows fewer areas around the centre of Chester, larger areas around Ellesmere Port, north and south of Northwich and west of Winford to be at risk of TRSE.

These areas of low TAS communities are most at risk of car-dependency, and therefore likely to see the greatest detrimental impacts on carbon emissions, local air quality and road safety.

Map 2.22: CW&C areas at risk of TRSE, TfN



Source: TfN TRSE Mapping Portal

Accessibility – key findings

- Areas around the key centres of Chester, Ellesmere Port, Northwich and Winsford where amenities and local services are centred as well local centres such as Frodsham, Neston and Helsby have the greatest opportunity to provide walkable neighbourhoods.
- There are low levels of access to jobs via public transport across the borough, although this increases in some parts of Chester and Ellesmere Port this remains low in the evenings and before the typical morning peak reducing.
- The highest levels of digital accessibility within the borough are centred around Chester, Northwich and, to some extent, Ellesmere Port. The area around the Ellesmere Port Industrial Area, Malpas, the outskirts of Northwich and Neston are shown to be the areas with the lowest levels of digital connectivity
- There are a number of areas across the borough which are more likely to suffer social isolation and exclusion as a result of low levels of connectivity and correspondingly low access to opportunity within areas surrounding of Chester, Ellesmere Port, Northwich and Winsford.
- There is a strong evidential link between adverse socio-economic trends for the residential population (deprivation, healthy life expectancy and proportion of people with no qualifications) and low levels of accessibility within the areas in which they live. For example, communities subject to some of the highest levels of deprivation across the borough are also those with a low Triple Access score and most at risk of transport poverty.

2.4 Travel

2.4.1 Data sources

There is currently little bespoke data on how people living and working in CW&C travel. However, data for this section is drawn from the following two nationally available sources:

- National Travel Survey (NTS) – collected every year based on nationwide household travel surveys, this data provides national results on how people travel for a range of trip purposes. The dataset sample for CW&C alone is too small to provide borough-specific results for a single year, but this can be aggregated over several years to produce a more reliable sample.
- National Trip End Model (NTEM) – NTEM is the DfT's national model to forecast the growth in trip origin-destinations (or productions-attractions) up to 2051 for use in transport modelling. It is based on 2011 census data, but Transport for the North (TfN) have rebased it to 2018 for CW&C using 2018 population data.

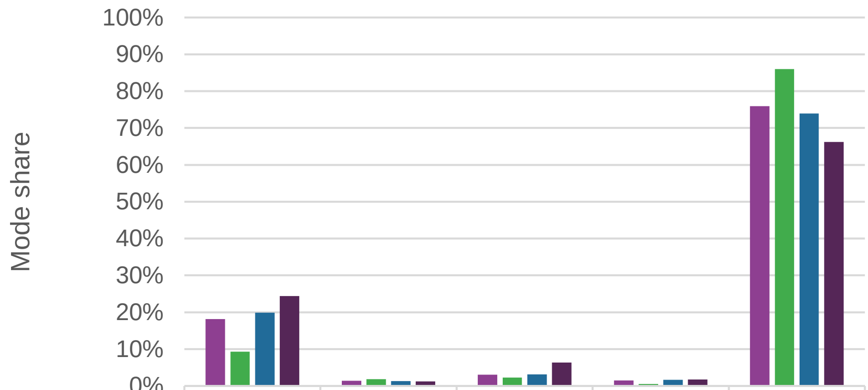
2.4.2 Average mode share

Based on NTS data for all trips with CW&C as an origin and/or destination between the years of 2007 and 2019, Chart 2.14 shows the average mode share for:

- All CW&C
- CW&C rural areas only
- CW&C urban areas only
- North West average

Rural and urban areas are as defined by ONS.

Chart 2.14: Average mode shares for trips starting/ending in CW&C



	Walk	Cycle	Bus	Rail	Car/Van
CW&C - all	18%	1.4%	3.0%	1.5%	76%
CW&C - rural	9%	1.8%	2.3%	0.6%	86%
CW&C - urban	20%	1.3%	3.2%	1.7%	74%
North West	24%	1.3%	6.3%	1.8%	66%

Source: NTS CW&C extract, 2007 to 2019

This chart shows the following:

- The average car mode share (including both driver and passenger) is 10% higher in CW&C than the regional average, with mode shares for all sustainable modes but cycling being lower than the regional average
- This difference is more pronounced in the rural areas of CW&C, with rural car mode shares being 20% higher than the regional average and 12% higher than in CW&C urban areas, while sustainable mode use is lower in rural areas than in urban areas for all but cycling

2.4.3 Trip purpose

Based on 2018 NTEM data for CW&C, Chart 2.15 shows the average distribution of trip purposes by day of week and, for weekdays, time of day, as follows:

- AM = morning peak period (typically 07:00-10:00)
- IP = inter-peak period (typically 10:00-16:00)
- PM = evening peak period (typically 16:00-19:00)
- OP = off-peak period (typically 19:00-07:00)

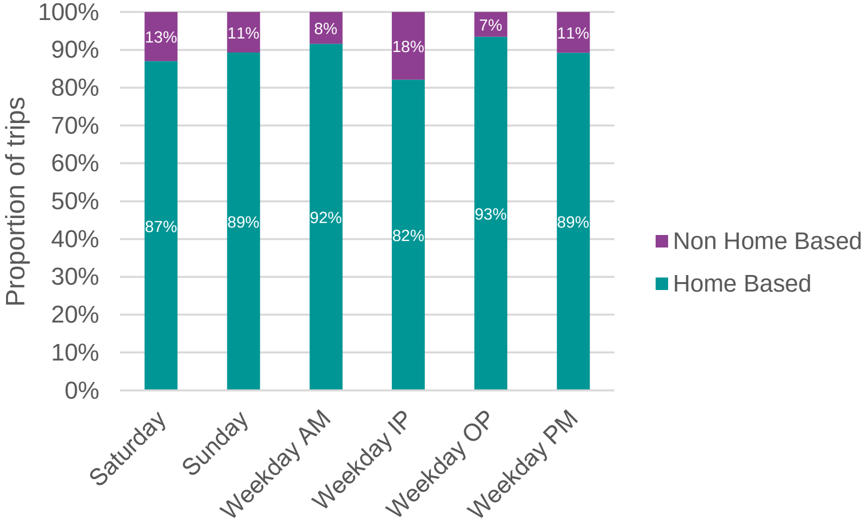
Chart 2.15: CW&C 2018 trip purpose distribution by day/period

Source: NTEM 2018 CW&C data

This chart highlights how trip purposes change depending on time of week and day. Typically the weekday morning and evening peak periods are the busiest times for the transport network, but this chart shows how the trip purposes contributing to these peaks is different in each case. In the morning, nearly 3 out of every 4 trips concerns people either getting to work or education, while in the evening peak this element reduces to just over 40% of trips, with the remainder comprising a range of discretionary trips.

One element that most of these trips throughout the week have in common is that they either start or end at home. This is shown in Chart 2.16 below, where around 9 in every 10 trips start or end at home. The exception to this is the weekday inter-peak period, where trip chaining between non-home locations is more likely to take place from work or shopping locations, but home based trips still represent the significant majority. This is a reminder that mode choice decisions for most trips are made from home and so depend on what travel options are available at the home end of the trip.

Chart 2.16: CW&C 2018 distribution of home based and non-home based trips by day/period

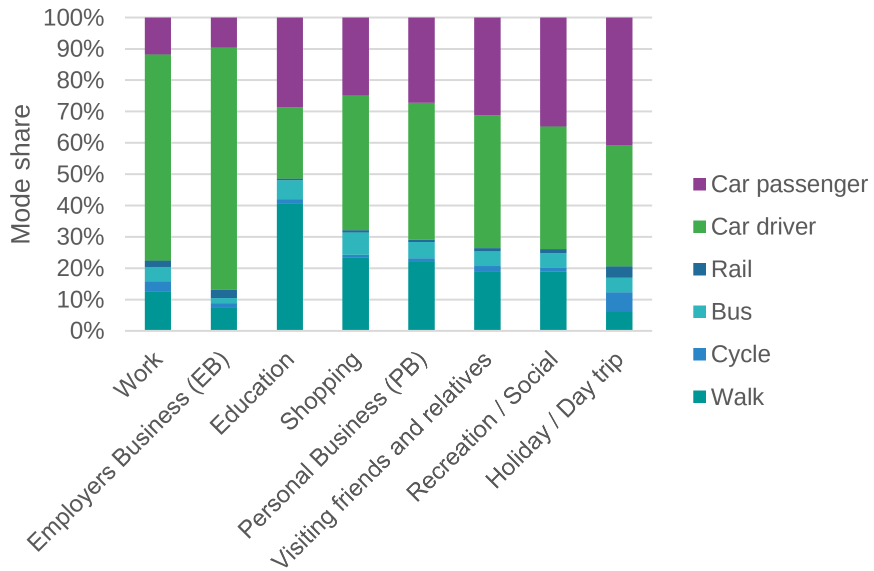


Source: NTEM 2018 CW&C data

2.4.4 Mode share by trip purpose

Based on 2018 NTEM data for CW&C, Chart 2.17 shows average mode shares by trip purpose.

Chart 2.17: CW&C 2018 mode share by trip purpose



Source: NTEM 2018 CW&C data

This clearly shows how car driver mode shares are considerably highest in CW&C for work related trips. Overall car use is similarly high for holiday / day trips, but this shows much higher car passenger use and therefore car occupancies. This is illustrated in Table 2.6, which combines the above car driver and passenger results to calculate average car occupancy by purpose.

Table 2.6: Average 2018 CW&C car occupancy by trip purpose

Trip purpose	Average car occupancy
Employers Business (EB)	1.12
Work	1.18
Shopping	1.58
Personal Business (PB)	1.62
Visiting friends and relatives	1.73
Recreation / Social	1.89
Education	2.26
Holiday / Day trip	2.06

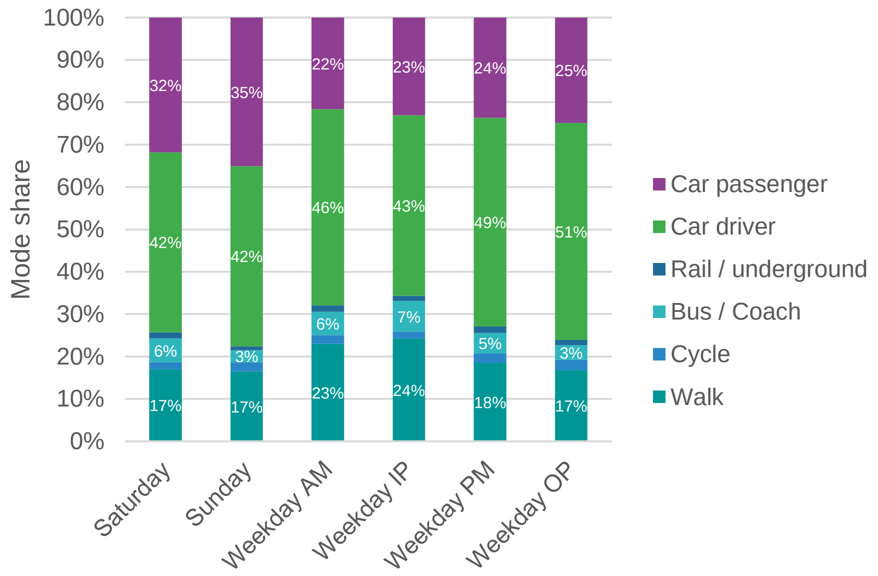
Source: NTEM 2018 CW&C data

This shows highest car occupancy for education trips, as most of these are escort trips. The above chart also shows that walking mode share is highest for education trips, as schools are often within walking distance of where students live.

2.4.5 Mode share by period

The combination of trip purposes changing by time period and mode shares changing per trip purpose results in average mode shares changing by time period also. This is shown in Chart 2.18 below.

Chart 2.18: CW&C 2018 mode share by day/period



Source: NTEM 2018 CW&C data

This chart shows how sustainable mode use is proportionally highest in the weekday inter-peak period at about a third of trips, closely followed by the weekday AM peak period. In the latter case, the relatively high proportion of education trips helps to counterbalance the commuter peak, while the interpeak period sees a greater proportion of shopping and education trips.

Car driver mode shares are highest during the overnight off-peak period, but flows tend to be lowest at this time. More problematic is the PM peak period where car driver mode shares are second highest and flows are also at their highest.

Based on this data, Table 2.7 shows average car occupancy levels by time period in CW&C in 2018.

Table 2.7: Average 2018 CW&C car occupancy by day/period

Trip purpose	Average car occupancy
Saturday	1.75
Sunday	1.83
Weekday AM	1.47
Weekday IP	1.54
Weekday PM	1.48
Weekday OP	1.49

Source: NTEM 2018 CW&C data

This shows that average car occupancies are lowest during the weekday morning and evening peak hours. This is problematic, as these are the times of peak network usage (see Section 4.6.2.2). As noted above, this is more problematic still for the PM peak as this is also the peak with the highest car driver mode share. In both cases, the low car occupancies are primarily due to the higher proportions of single occupancy car use for commuting trips.

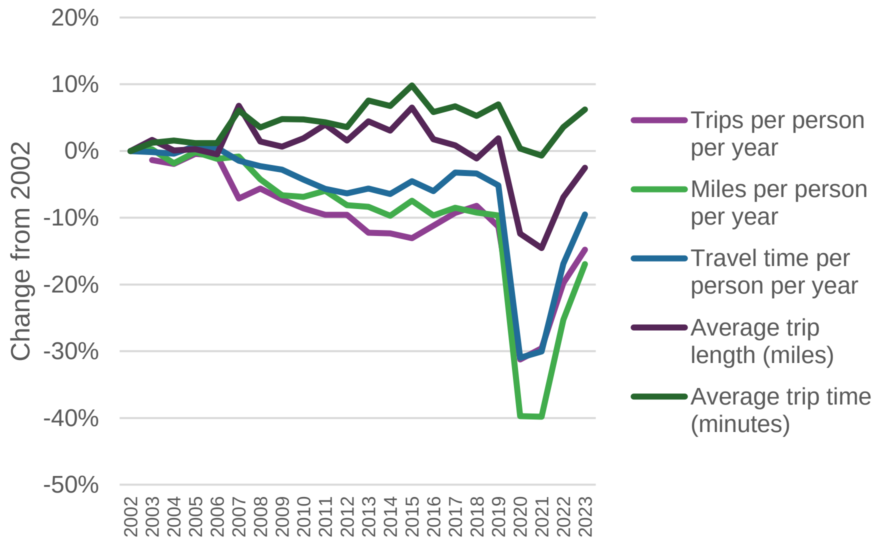
2.4.6 National travel trends

The sample size for NTS data for CW&C is too small to allow trends over time to be assessed. However, these can be derived from England-level data, and it can be expected that any clear national-level travel trends will also apply to CW&C.

The following chart shows, per person per year, changes since 2002 in:

- Total trips
- Total distance travelled
- Total travel time
- Average distance per trip, and
- Average duration per trip

Chart 2.19: % changes in trip making, distance and duration since 2002



Source: NTS0101, England results

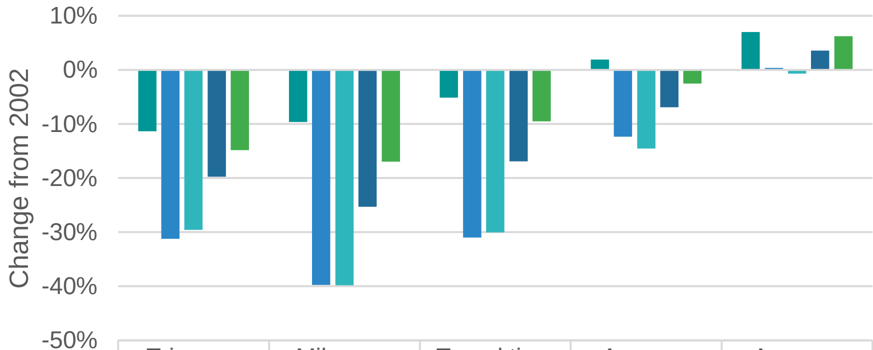
The effects of the pandemic are clear from this chart. Up until 2019, however, the trends from 2002 were as follows:

- Trip rates per person (shown turquoise) dropped steadily to a low of -13% in 2015, increasing slightly to -11% by 2019
- Total miles travelled per person (shown pruple) dropped at a similar but slightly slower rate, as the average trip length (shown dark green) increased up to +6% by 2015 before dropping to +2% by 2019
- Total time travelled per person (shown greenle) dropped at a slower rate still, as the average trip duration (shown dark purple) increased up to +10% by 2015, remaining at +7% by 2019

What this data shows is that, between 2002 and 2019, the average distance per trip hardly changed and people were each making 11% fewer of them, and yet average trip durations increased by 7%. This suggests that, though each person was making fewer trips, the total number of people making trips increased over the same period due to population growth. This conclusion is supported by Chart 2.1 above, which shows that the population of Great Britain increased by 13% over this period, while DfT road traffic statistics show that national road miles travelled annually increased by the same proportion[24]. Without a commensurate increase in network capacity, such an increase in traffic volumes results in increased congestion and therefore journey times.

In terms of the effects of the pandemic, Chart 2.20 summarises the percentage change in each parameter from 2019 to 2023 compared to 2002. This clearly shows the impacts on travel during the main pandemic period in 2020 and 2021, with the ‘stay at home’ message resulting in a significant drop in trip making and trip lengths, while the resulting drop in congestion brought average trip durations back down to 2002 levels. Post-pandemic, the 2022 and 2023 data shows some recovery back towards 2019 pre-pandemic levels, but still with some way to go.

Chart 2.20: % changes in trip making, distance and duration since 2002



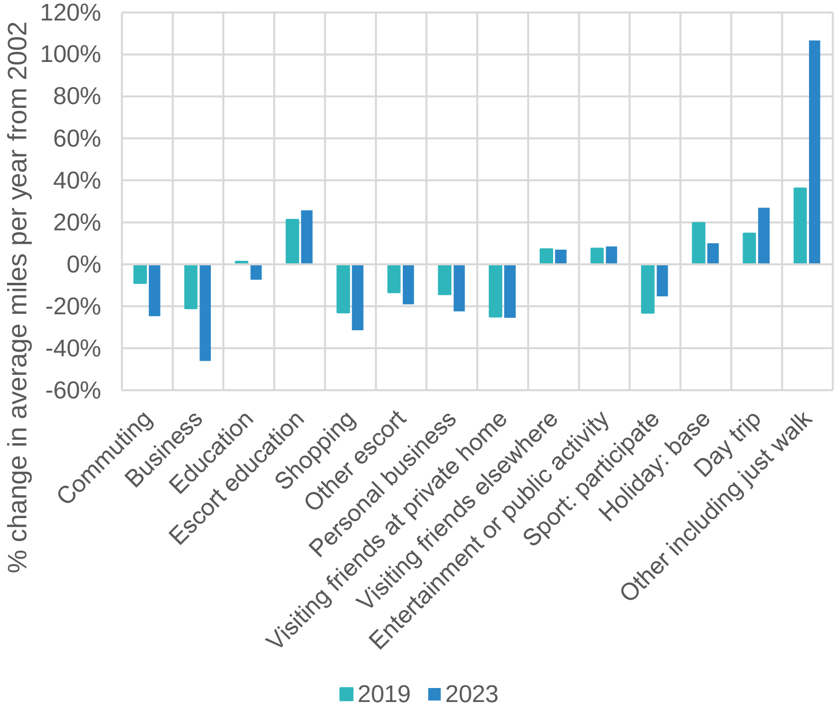
	Trips per person per year	Miles per person per year	Travel time per person per year	Average trip length (miles)	Average trip time (minutes)
2019	-11%	-10%	-5%	2%	7%
2020	-31%	-40%	-31%	-12%	0%
2021	-30%	-40%	-30%	-15%	-1%
2022	-20%	-25%	-17%	-7%	4%
2023	-15%	-17%	-10%	-3%	6%

Source: NTS0101, England results

Regarding the general downward trend in personal trip making, Chart 2.21 below shows how trip making has changed by purpose since 2002 in both 2019 and 2023.

[24] https://www.gov.uk/government/statistical-data-sets/road-traffic-statistics-tra

Chart 2.21: Changes in trip making by purpose since 2002



Source: NTS0403, England results

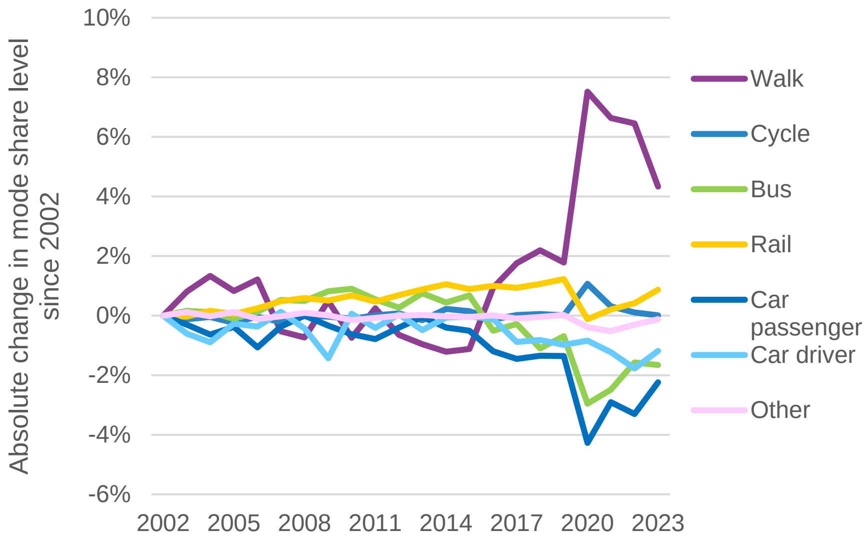
This shows that, in 2019, there were drops in commuting, business, shopping, other escort, personal business and visiting friends at home trips. Education trips and most leisure trips (except visiting friends at home) stayed at similar levels. It is likely that the main reason for most of the drops in trip making relate to the rise of online services. For commuting and business trips, online working has enabled more working from home and fewer in-person meetings. For shopping and personal business trips, increased access to online shopping and delivery services means fewer physical trips. And a drop in visiting friends at home is likely a result of people interacting more via social media instead.

Education trips remain unchanged as this continues to be largely an in-person activity (outside of the pandemic restrictions), while leisure trip making is also generally unchanged for the same reason. Notably, day trips and particularly 'other including just walk' activities have increased during this period, which potentially reflects people's need to take a break from the house due to reduced overall trip making.

In terms of post-pandemic effects, the 2023 results show how the pandemic amplified the 2019 changes for any trip purposes that can be completed online, with a similar amplification of 'just walk' trips to offset increased home-based activity.

Lastly, in terms of travel mode choice trends, Chart 2.22 shows the absolute changes in mode share since 2002.

Chart 2.22: Changes in mode share since 2002



Source: NTS0403, England results

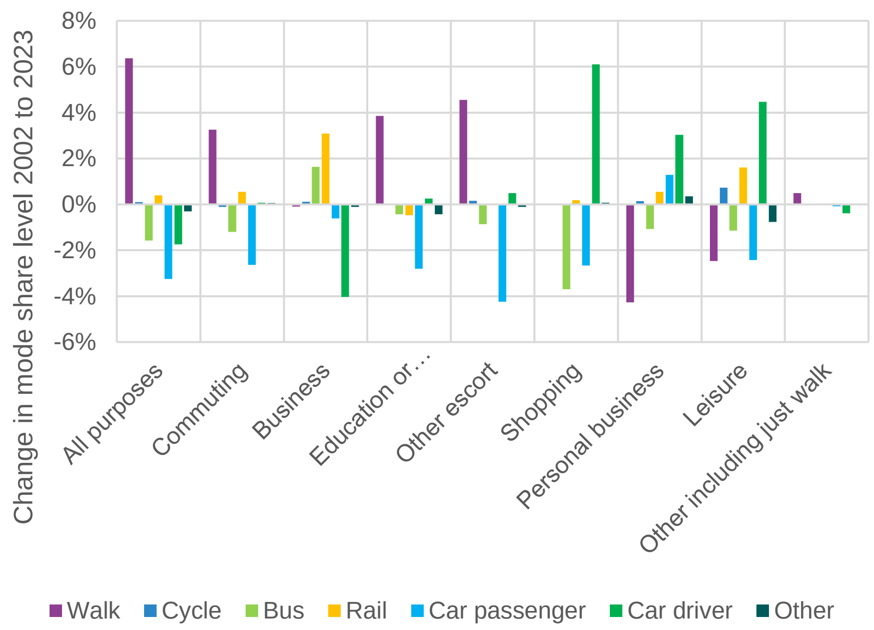
This shows that, from 2002 to 2019:

- Rail's mode share steadily grew by 1.2%, from 2.2% to 3.4%
- The national bus mode share also grew by nearly 1% up to 2015, but then dropped to -1% by 2019
- Car driver mode share held steady until 2016, and then also fell by -1% by 2019, while the car passenger mode share started falling from 2013 to a drop of -1.4% by 2019
- Conversely, while the walk mode share dropped -1.1% by 2015, it then increased to +1.8% by 2019
- The cycling mode share remained steady throughout the period

This data therefore shows that, from about 2015 to 2019, bus and car mode shares fell while rail and particularly walking shares increased. The pandemic then particularly affected all public transport, while seeing a sharp increase in the share of walking and, to some degree, cycling. Since 2021, mode shares have begun to return to their previous levels, albeit still with some way to go in 2023.

To provide some insight into where these changes have happened, Chart 2.23 shows the change in mode share from 2002 to 2022 by trip purpose, with the above overall average change shown in the first column for reference.

Chart 2.23: Changes in mode share by trip purpose from 2002 to 2023



Source: NTS0403, England results

This chart shows that:

- Walking has seen the largest increase in mode share for all purposes of trips, which is mostly accounted for by commuting, education and other escort trips. This may reflect an increase in city centre living over the period, which allows more walking trips to work. Increased peak hour congestion may also be a factor for education/escort trips.
- Bucking the trend over this period, however, are shopping, personal business and leisure trips, all of which saw a decrease in walking and an increase in car use. These trips tend to take place outside of network peak hours, and so could be a result of increased car ownership (see Chart 2.11) resulting in greater car use during quieter network periods.
- Business trips account for almost all the increase in rail mode share. Bus mode share has fallen for all trip purposes beapart from business trips.

In summary, therefore, national travel datasets from 2002 to 2023 show:

- A reduction in trip making per person, enabled largely by the increase in online accessibility to workplace and services, but
- An overall increase in traffic levels due to population and car ownership growth, resulting in
- Increased congestion at peak times that has generated a shift from private car to sustainable modes for work-related and education trips,
- But also a converse shift to car use for non-peak period trip purposes, such as shopping, personal business and leisure trips.

Travel – key findings

- Average car use in CW&C is around 12% higher than the national average.
- Car ownership in CW&C is 8% above national levels – reflecting both the relative affluence of parts of the borough, but also the lack of alternatives to the private car.
- Around 9 out of every 10 trips starts or finishes at home, while about 31% of the CW&C population lives in rural areas indicating a significant demand for transport options that serve rural settings.
- Car use is 12% higher in rural areas of CW&C than in urban areas, illustrating the difference in travel options available in these areas.
- Single occupancy car use is the most common mode of travel for commuting trips, and these comprise a significant proportion of trips during the busiest network periods.
- Though cycle use in CW&C is similar to national averages, walking and bus usage are noticeably lower, even in urban areas.
- National level trends from 2002 to 2022 show:
  - A reduction in trip making per person, enabled largely by the increase in online accessibility to workplace and services, but
  - An overall increase in traffic levels due to population and car ownership growth, resulting in
  - Increased congestion at peak times that has generated a shift from private car to sustainable modes for work-related and education trips, but also
  - A converse shift to car use for non-peak period trip purposes, such as shopping, personal business and leisure trips.

2.5 Promoting healthy communities summary

35% OF CW&C'S **TOTAL POPULATION** IS CONTAINED WITHIN SPARSELY POPULATED RURAL AREAS. THE TOTAL POPULATION IS FORECAST TO **INCREASE AT A QUICKER RATE** THAN THE UK BETWEEN 2018 AND 2040

21.3% OF CW&C'S POPULATION IS **AGED 65 AND OVER**, COMPARED TO THE **NATIONAL AVERAGE OF 18.5%**

24,000 RESIDENTS ACROSS 16 SMALL NEIGHBOURHOODS WITHIN THE **TOP 10% MOST DEPRIVED NATIONALLY**

17% OF LSOAs ACROSS THE BOROUGH NO ACCESS TO A CAR OR VAN, **6% BELOW THE NATIONAL AVERAGE**

CW&C's POPULATION IS FORECASTED TO GROW BY **13.1%** TO OVER 385,000 RESIDENTS **BY 2040**

ACROSS CW&C THERE ARE AREAS **OF HIGH POPULATION DENSITY AND LOW TRIPLE ACCESSIBILITY** WITHIN AREAS OF **NORTHWICH, WINSFORD, ELLESMERE PORT, NESTON, FRODSHAM AND HELSBY**

CAR DRIVER MODE SHARES ARE CONSIDERABLY HIGHEST IN CW&C FOR **WORK RELATED TRIPS**

THE PROPORTION OF THE DRIVING-AGE POPULATION **HOLDING A FULL LICENCE** INCREASED FROM JUST BELOW 70**%** IN 2002 TO **74%** BY **2021**

OVER 30% OF ALL WARDS WITHIN THE BOROUGH ARE BELOW THE **ENGLISH AVERAGE** FOR HLE AT BIRTH

25% OF **CW&C'S POPULATION** AGED OVER 16 HAVE **NO QUALIFICATIONS OR HIGHEST LEVEL 1 QUALIFICATIONS**

SUSTAINABLE MODE USE ACCOUNTS FOR AROUND **1/3 OF TRIPS** IN THE WEEKDAY INTER-PEAK PERIOD

WHAT DOES THIS MEAN FOR CW&C LTP4?

The population of CW&C largely resides within and around the four key centres of Chester, Ellesmere Port, Northwich and Winsford. However, around one quarter of the population live in rural parts of the borough which presents a number of key transport challenges to overcome for a sizeable proportion of residents. This includes the need to consider the sparse density of the population which limits the operational feasibility of direct public transport services, and the longer travel distances to key services and amenities reducing opportunities for walking and cycling. Evidence of these challenges can be seen in the poorer coverage of public transport services across rural geographies (see Section 4.4.2), longer travel to work distances for residents within rural areas (see Section 3.5.2.3) and lower levels of walking amongst residents within rural areas (see Section 2.4.3).

In recognition of the challenges in providing alternatives, higher car use within rural parts of the borough is difficult to avoid. Managing the impact of those trips on urban destination networks therefore needs to be carefully considered through appropriate measures.

Demographic data demonstrates that the borough also experiences a higher-than-average, and growing, retired population, predominantly residing within the more rural parts of the borough that are less well served by public transport. Opportunities for active travel are also likely to decline amongst the ageing population, particularly due to longer distances associated with travel to/from rural areas, further increasing car dependency. The borough also suffers from poor social mobility, which is crucial for ensuring everyone has a fair chance to reach their full potential and that opportunities for a good quality of life are open to all. As the population and life expectancy of residents within CW&C and across the UK is expected to continue to grow, it is essential to ensure that communities develop sustainably with access to a range of key services through a range of travel choices.

Analysis illustrates the strong evidential link between adverse socio-economic trends and low levels of accessibility. Although CW&C generally performs better than the national average on a number of socio-economic outcomes, there are pockets of deprivation, unemployment, low car ownership and lower than average Healthy Life Expectancy evident within and around the main urban areas. Triple Access analysis illustrates these areas are also most at risk of transport poverty. This highlights the importance of ensuring these areas are well connected to areas of opportunity associated with jobs, health services, training and educational facilities as identified in Section 3.

Car ownership across CW&C is around 8% higher than the national average, with car use significantly higher (23%) within CW&C than across the North West. In addition, walking and bus use remain below regional levels, which is likely a reflection of the small scale of the urban areas and the rural nature of the wider borough. High car usage is also prevalent and is 10% higher than the regional average. Levels of car ownership are strongly linked to usage, encouraging low car ownership, particularly within urban areas is therefore an important consideration as well as providing attractive sustainable alternatives.

3 Supporting a thriving economy

3.1 Introduction

Cheshire West and Chester has a strong and diverse economy with substantial growth planned and underway. CW&C has several key economic centres which include Chester, Ellesmere Port, Northwich and Winsford. This section explores the current economy across the borough and the role of transport in its key challenges and opportunities.

3.2 Economic activity

CW&C has some clear sector strengths, particularly in manufacturing and finance. This sub-section explores the employment size and structure of the borough's economy through its various sectors, and the spatial distribution of jobs highlighting centres of employment.

3.2.1 Economic activity by employment

Chart 3.1 shows the total number of jobs in CW&C by year, between 2015 and 2023, while Chart 3.2 compares employment growth during this period with the national average.

These show slight employment growth in CW&C up to 2019 before the pandemic, and then a recovery beyond 2019 levels by 2022. However, this falls short of the national average growth over the same period, which grew by nearly 10% compared with under 2% for CW&C.

Chart 3.1: CW&C number of jobs, 2015 to 2023

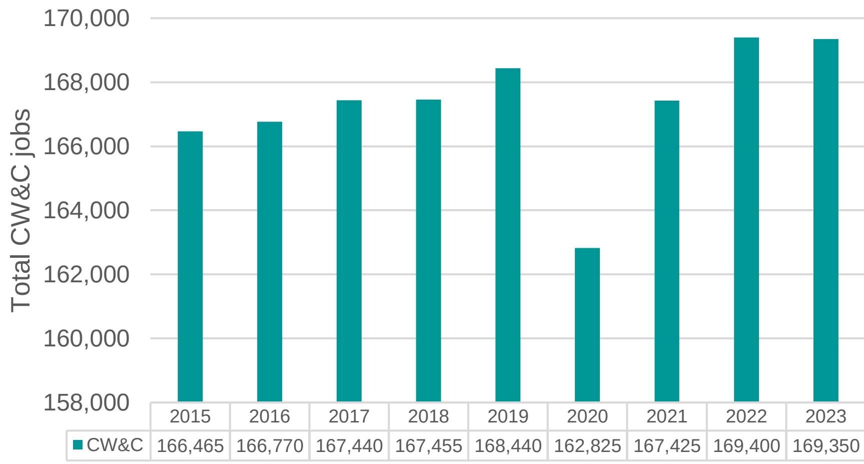
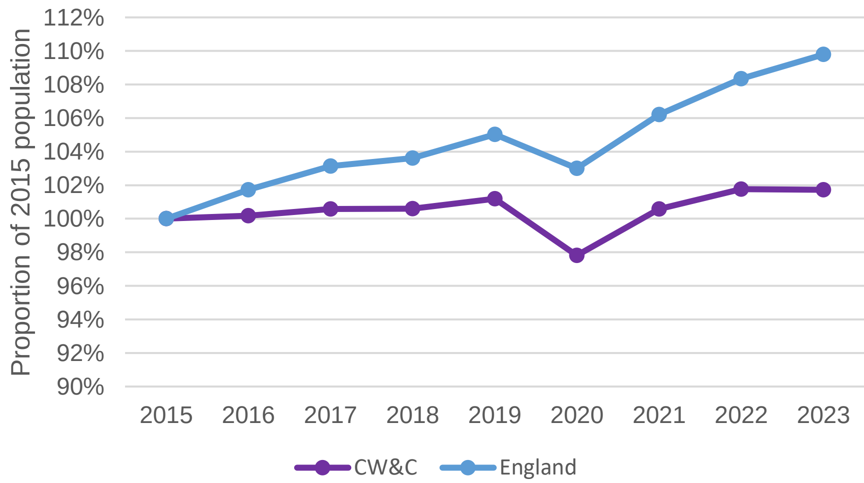


Chart 3.2: CW&C and England employment level change from 2015

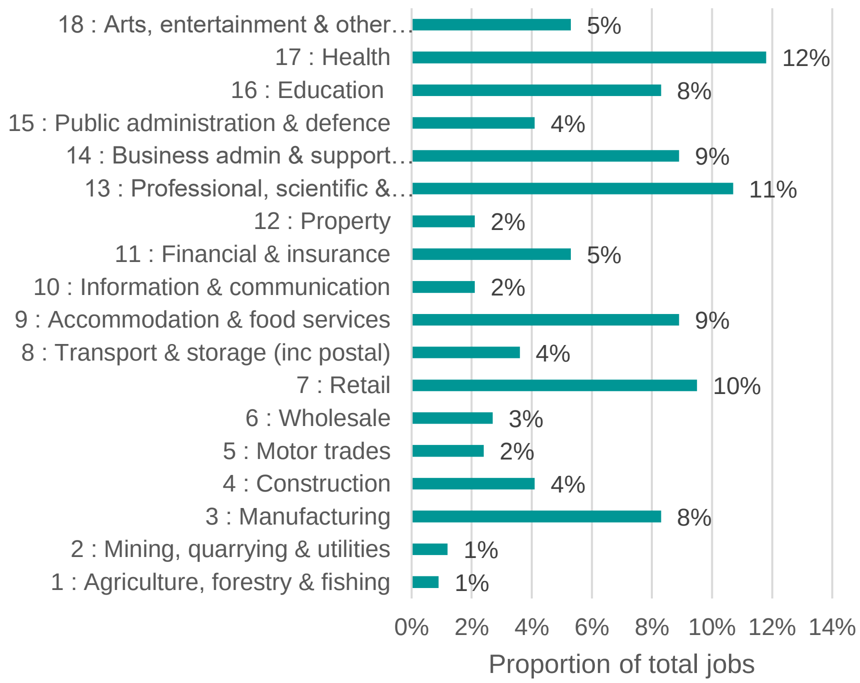


Source for both charts: Business Register & Employee Survey (BRES)

3.2.2 Economic activity by sector

Chart 3.3 shows how employment in CW&C is distributed by economic sector in 2023.

Chart 3.3: CW&C employment by economic sector, 2023



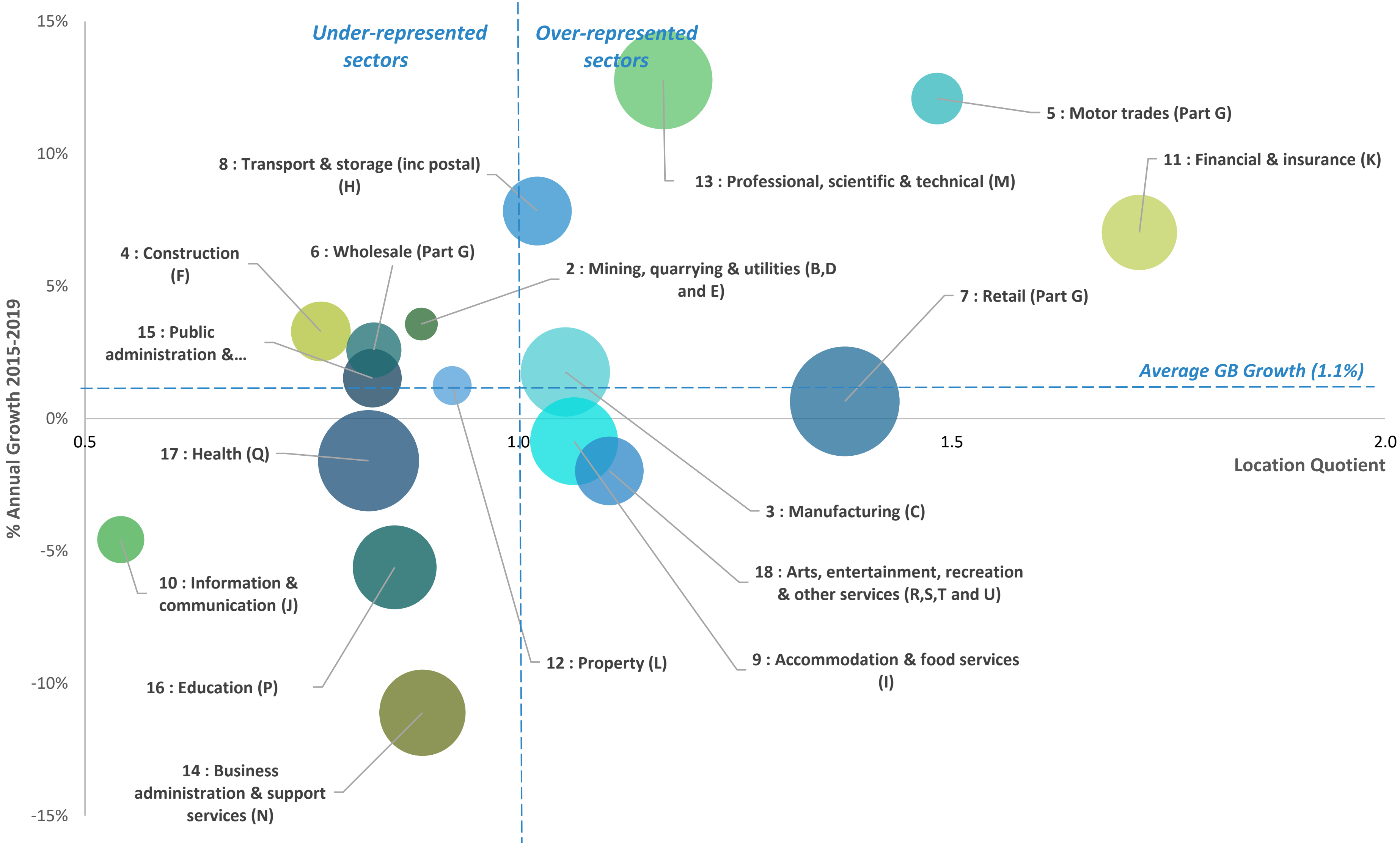
Source: BRES, 2023

This shows that 'Health' (20,000 employees), 'Professional, Scientific, and Technical Activities' (18,000 employees) and 'Retail' (16,000 employees), are the largest sectors. Collectively they contribute around a third of total employees in the authority.

Chart 3.4 shows a Location Quotient (LQ) analysis for CW&C, which provides an indication of the representation and growth of different economic sectors between 2015 and 2019. This shows:

- Growth has been greatest in:
  - Professional, Scientific, and Technical Activities (+13%)
  - Motor trades (+12%)
  - Transport and storage (+8%)
- During the same period, there have been declines in the employees engaged in:
  - Business administration and support services (-11%)
  - Education (-6%)
  - Information and communication (-5%)
- The authority has specialisms in:
  - Financial and insurance (LQ = 1.7), with 7% growth over the period
  - Motor trades (LQ = 1.5), with 12% growth over the period
  - Retail (LQ = 1.4), with 1% growth over the period
  - Professional, Scientific, and Technical Activities (LQ = 1.2), with 13% growth over the period
- Due to the nature of these specialisms, they are likely to be located in specific clusters of economic activity within business parks, retail parks and industrial areas and/or estates

Chart 3.4: CW&C economic sector representation and growth, 2015 to 2019



Source: Business Register & Employee Survey (BRES)

3.2.3 Economic activity by geography

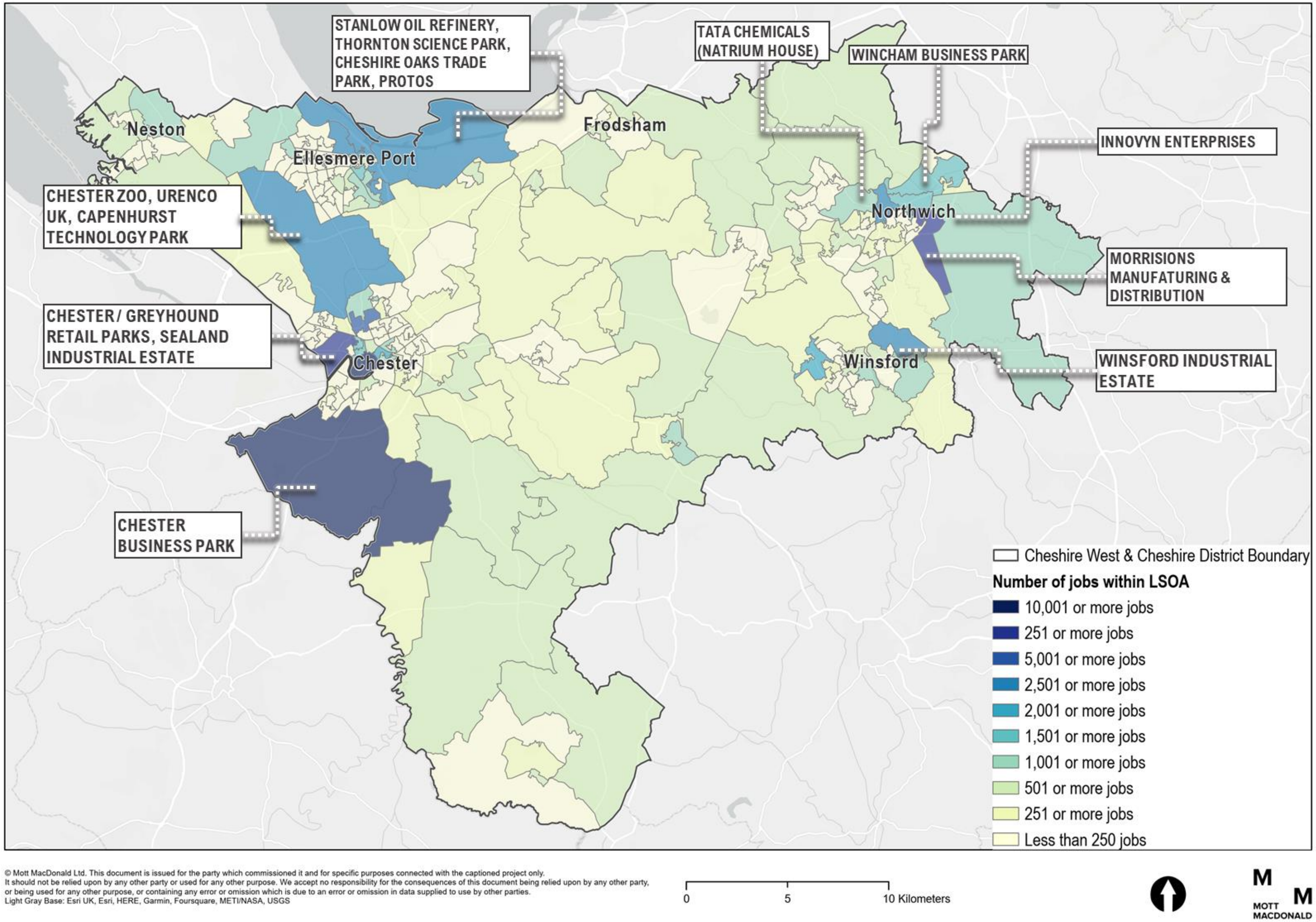
The CW&C economy is based across a mixture of urban, industrial and rural areas. This includes urban centres such as Chester, but also business parks including Chester Business Park, Cheshire Science Corridor sites in Ellesmere Port and Gadbrook Park, and industrial areas like Ellesmere Port, TATA Steel, and Ince, and rural areas covering wholesale and retail, visitor economy, professional services and agri-food.

Map 3.1 (overleaf) shows the distribution of jobs across the borough in terms of the number of jobs per LSOA in 2019. It can be seen the greatest concentrations of jobs are predominantly found in and around Chester – both in its city centre and outer city office and industrial sites (Sealand and Chester Business Park) – and the banks of the River Mersey around Stanlow, Hooton and Elton. To the east of the borough, areas to the periphery of Northwich provide significant employment opportunities. This is primarily due to the presence of large employment sites such as TATA, Innovyn Enterprises and Morrisons (manufacturing and distribution).

Map 3.2 shows the distribution of economic growth across the borough, the most significant in terms of job increases being in the Health sector on the outskirts of Chester, which has seen a net increase of 4,315 jobs (255%). This can largely be attributed to the Countess of Chester Hospital.

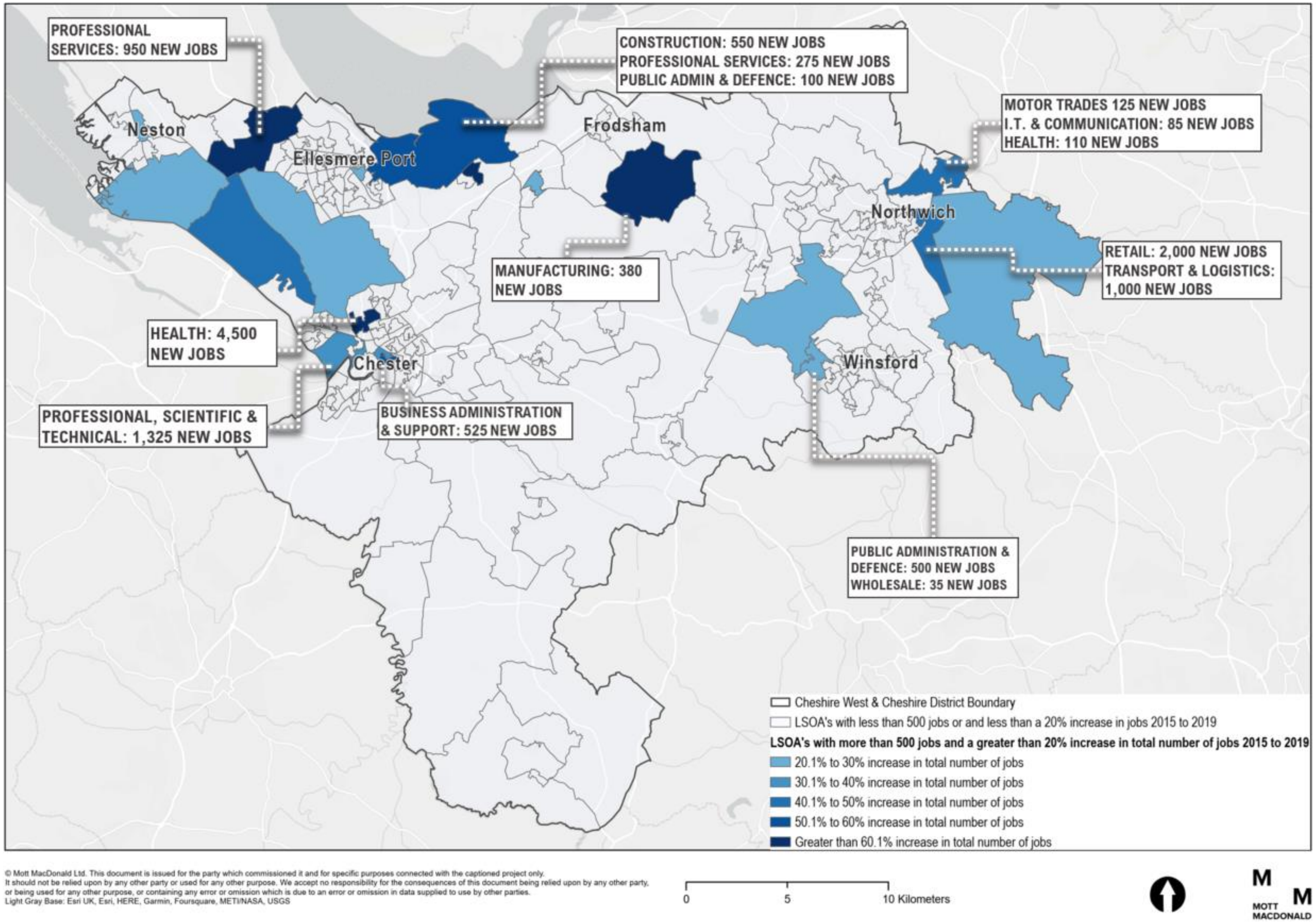
Other key sectors of growth include professional, scientific and technical services and business administration and support services, which have seen net increases of 2,900 and 2,245 new jobs respectively. It can be seen that growth in these sectors was most concentrated around Chester city centre, Sealand Industrial Estate, Capenhurst and Hooton.

Map 3.1: Distribution of jobs per LSOA in 2019



Source: Business Register & Employee Survey (BRES)

Map 3.2: Distribution of job growth from 2015 to 2019



Source: Business Register & Employee Survey (BRES)

Economic Activity – key findings

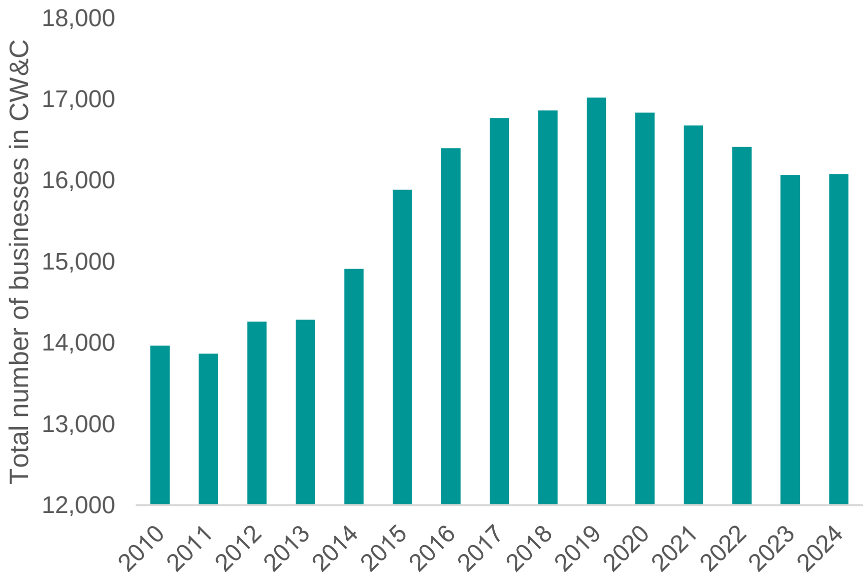
- Employment levels in CW&C between 2015 and 2023 grew by less than 2%, compared to nearly 10% across England.
- A strong and diverse economy is evident across CW&C, with the majority of opportunities and recent growth centred around the City of Chester and the key urban areas of Ellesmere Port, Northwich and Winsford.
- Retail, Health, Professional, Scientific, and Technical Activities are the largest sectors in CW&C by number of employees and growth in employees between 2015 and 2019.
- The greatest concentrations of jobs are predominantly found in and around Chester – both in its city centre and outer city office and industrial sites (Sealand and Chester Business Park) – and the banks of the River Mersey around Stanlow, Hooton and Elton. Other high concentrations of jobs within the borough are found at Winsford Industrial Estate and Northwich Morrisons.

3.3 Performance

3.3.1 Business counts

The total number of businesses within CW&C between 2010 and 2024 is shown in Chart 3.5. Throughout this period, micro-businesses (0-9 employees) consistently make up the largest proportion of businesses at around 83%, followed by small businesses (10-49 employees) at 13-14% for the period between 2010 and 2024.

Chart 3.5: CW&C total number of businesses 2010-2024

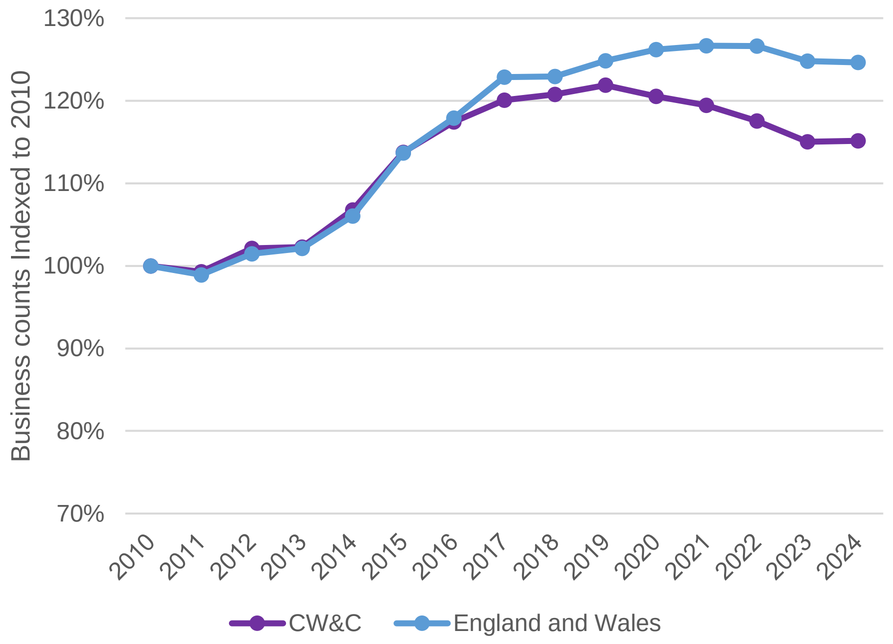


Source: UK Business Counts, NOMIS

As of 2024, there were around 16,000 businesses across CW&C[25]. According to the Inter Departmental Business Register (IDBR), the total number of businesses decreased by 3.5% between 2019 and 2022, likely as a result of the COVID-19 pandemic, and this has further declined in 2024 to 5.5% below 2019 numbers. Chart 3.6 below shows how this performance compared with the England average.

[25] 2021, Inter Departmental Business Register (IDBR), April 2021

Chart 3.6: Change in business counts 2010-2024



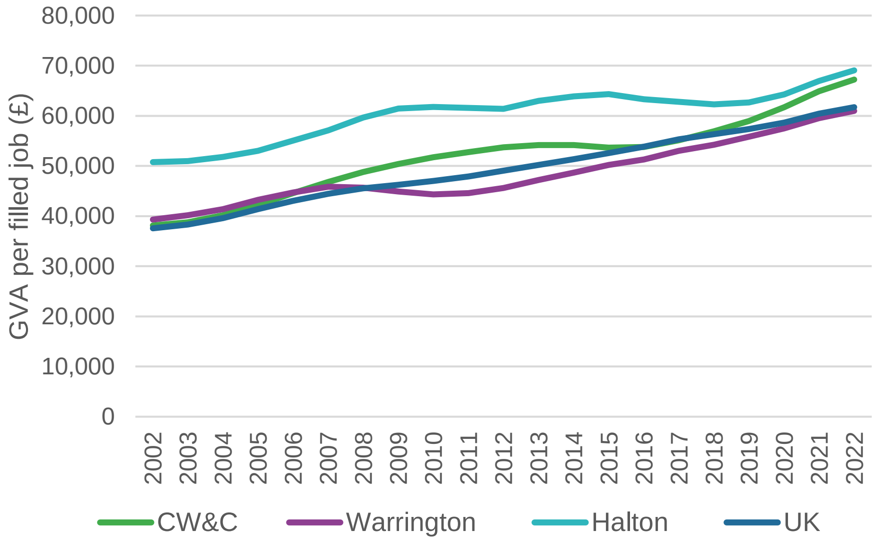
Source: UK Business Counts, NOMIS

This shows that the decline in business numbers in CW&C since 2019 is not mirrored nationally, with counts staying relatively constant.

3.3.2 Productivity

Chart 3.7 illustrates GVA per filled job between 2002 and 2022 for CW&C compared to neighbouring authorities and the UK as a whole. While there have been signs of growth and trends above the national average, there are also signs of challenges with productivity remaining relatively static in more recent years since 2017 both across CW&C and the UK.

Chart 3.7: GVA per filled job (£) 2002-2022



Source: ONS

3.3.3 Visitor economy

Chester City Centre is the commercial and tourism hub of CW&C where visitors are attracted to Chester's heritage assets, including the cathedral, Roman amphitheatre, and historic shopping rows[26]. CW&C historic towns and rural settlements also attract a wide range of visitors. Cheshire Oaks is a significant regional visitor destination for retail and leisure.

[26] CW&C Council (2015). Cheshire West and Chester Local Plan (Part One) Strategic Policies - Details - Keystone

Major visitor attractions include Chester Zoo, Beeston Castle, Cotebrook Shire Horse Centre and Grosvenor Museum. Chester Zoo, located in the Green Belt, is the most popular visitor attraction in CW&C with 1.6 million visitors recorded in 2021[27]. Visitor numbers have increased by 35.4% compared to 2020, but they were still lower compared to pre-pandemic levels. A summary of the location of the key visitor attractions is set out in Map 3.3 overleaf which shows a concentration of attractions around the city centre of Chester. Major sporting events in CW&C (including at Chester Racecourse and Oulton Park) attract a wide range of visitors, participants and spectators[28]. There is also a diversity of natural assets in the rural areas of CW&C, such as the Delamere Forest, the Sandstone Trail, wildlife sites such as Burton Mere Wetlands, coastal areas, and Cheshire 'gardens of distinction' that provide opportunities for visitors and residents to enjoy.

Chart 3.8 below shows annual visitor numbers to CW&C from 2010 to 2020 and Chart 3.9 shows their estimated economic impact.

These charts show a steady increase in annual visitors to CW&C, from around 23 million in 2010 to a peak of over 37 million in 2019. Similarly, this resulted in a growth in the borough's visitor economy from about £1bn in 2010 to about £2.2bn in 2019.

These charts also show the impact of the pandemic on CW&C visitor trips, dropping to below 2010 levels in 2020 and recovering to little over 2010 levels in 2021. Footfall figures presented in the next section also suggest that although footfall has recovered well beyond 2020 levels in 2023 across the key centres remain below that seen in 2018/2019.

Chart 3.8: CW&C total visitor numbers 2010-2020

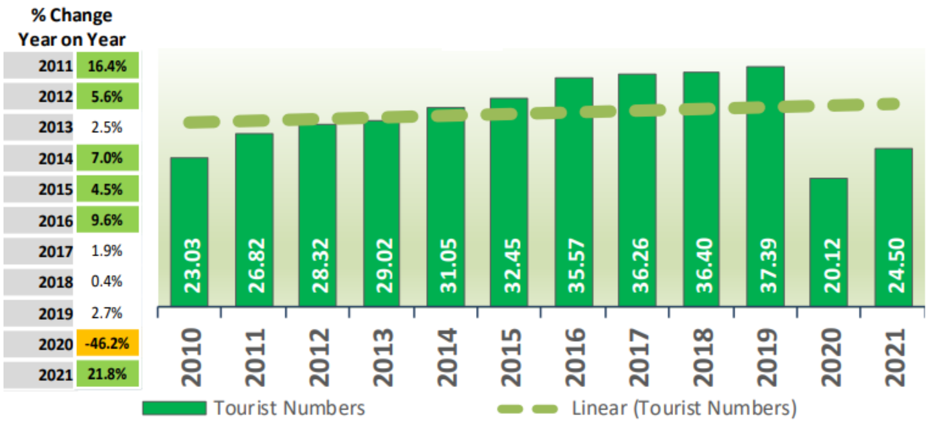
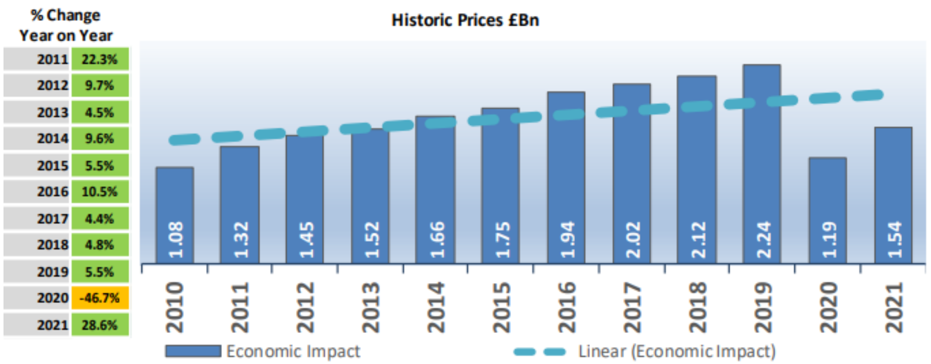


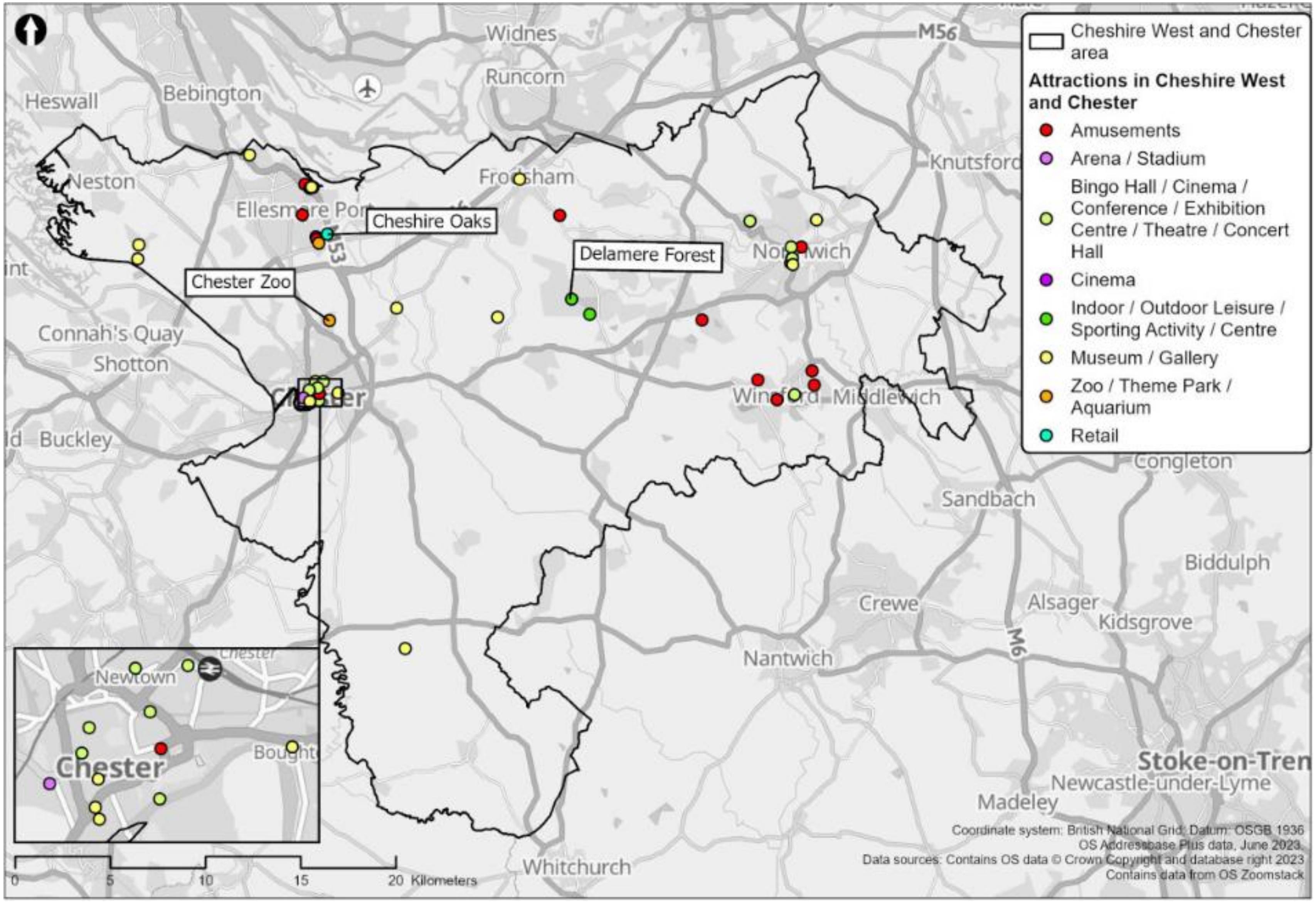
Chart 3.9: Total economic impact £Bn



Source: STEAM report for 2010-2021, Global Tourism Solutions (UK) Ltd

[27] CW&C Council (2022). State of the Borough. Available at: Culture and tourism | Cheshire West and Chester Council

Map 3.3: CW&C key visitor destinations



Source: Mott MacDonald

3.3.4 Town centre vitality

3.3.4.1 Existing situation

Based on data provided by the Council, a summary of vacancy rates across the key town centres within CW&C is provided below in Table 3.1.

Table 3.1: CW&C town centre vacancy rates

Chester	High vacancies within retail units within city centre and Grosvenor Shopping Centre as a result of changing shopping habits and the impact of COVID-19.
Ellesmere Port	Vacancy rate of 26%[29] within Ellesmere Port town centre. Despite the strengths of the wider area, the town centre is still based on a car centric design and suffers from high business vacancy levels. Many of the traditional retail outlets have closed. There is little office, leisure or visitor appeal due to the proximity of Cheshire Oaks designer outlet village and associated leisure offer, and Liverpool city centre.
Northwich	Barons Quay retail and leisure facility continues to suffer from high vacancy rates, with the size of units and their segmentation noted by businesses as a deterrent for occupation[30]. There are aspirations to focus investment on a food and beverage offer within Barons Quay, but the lack of evening public transport services has been noted by businesses as a key issue for both visitors and staff.
Winsford	Vacancy rates in Winsford are currently low – there are currently around 4-5 vacant units. However, this is largely due to a number of vacant units being demolished by CW&C that were structurally unsafe. Although vacancy rates are low, there is a lack of leisure offer to drive footfall and longer trading hours.

Source: CW&C (Economic Growth Programme Managers)

Map 3.4 illustrates monthly average footfall across each of the four key urban centres throughout April 2023, collected via GPS mobile phone data. This shows highest concentrations of footfall as follows:

- For Chester – on the pedestrianised streets of Northgate Street, Foregate Street and Eastgate Street
- For Ellesmere Port – along Wellington Road, Marina Drive and Marina Walk
- For Northwich – on High Street and Leicester Street
- For Winsford – on High Street and Dene Drive

Map 3.4: Monthly average footfall (April 2023)

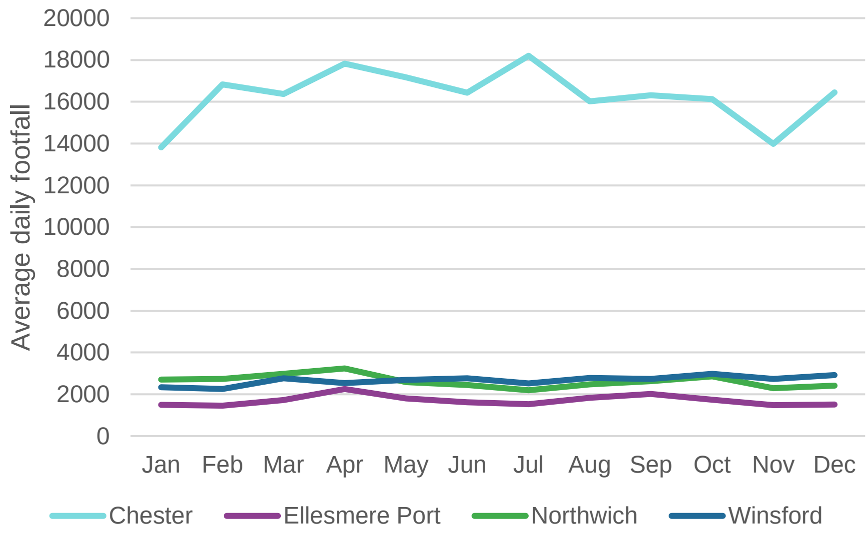
Source: Datscha, 2023

Chart 3.10 shows average daily footfall in 2022 across the key streets in each of the four key centres: Eastgate Street, Chester; Marina Walk/Rivington Road, Ellesmere Port; High Street, Northwich; and Dene Drive, Winsford. This shows the lowest levels of footfall within Ellesmere Port town centre and a number of peaks throughout the year in April, August and October in line with school holidays.

[29] Ellesmere Port Levelling Up Fund Round 2 – Final Response, 2022

[30] Consultation evidence from Economic Growth and Regeneration officers within CW&C

Chart 3.10: Average daily footfall 2022



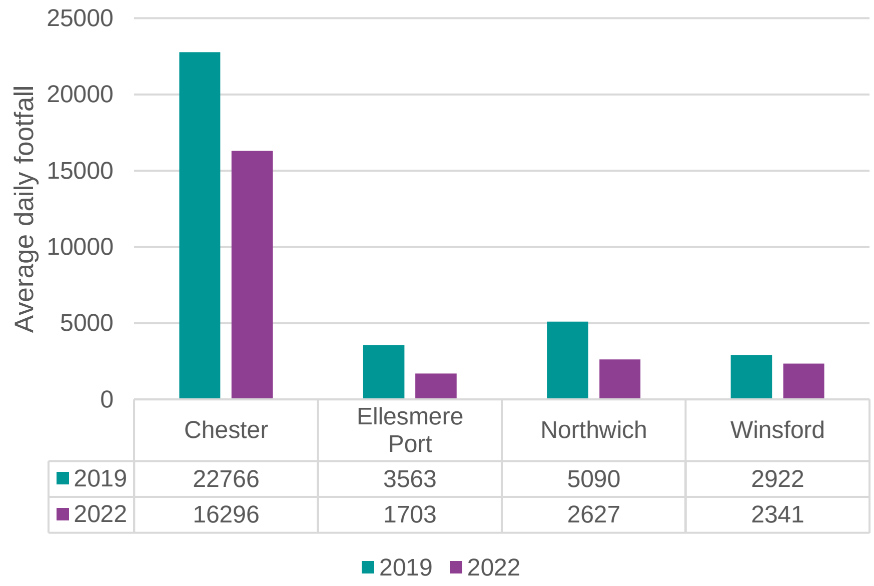
Source: Datscha, 2023

3.3.4.2 COVID-19 Impacts

Following the COVID-19 pandemic, some high streets have benefited from trends such as hybrid working and increased demand for community events, whilst others have been disadvantaged. With fewer workers leaving home during the day, high streets in commuter towns and suburban centres stand to benefit from increased footfall and a new higher-spending weekday demographic, while commuter destination towns potentially see reductions in footfall.

To look more closely at the impact of COVID-19, footfall data for the busiest streets noted above for each town centre has also been assessed in 2019 and 2022. Chart 3.11 shows the change in average daily footfall across key streets in each of the four key centres between 2019 and 2022.

Chart 3.11: Changes in average daily footfall 2019/2022



	Chester	Ellesmere Port	Northwich	Winsford
2019	22766	3563	5090	2922
2022	16296	1703	2627	2341

Source: Datscha, 2023

The chart indicates that Northwich and Ellesmere Port have seen the most significant decrease at around 50%, while Chester and Winsford have seen much less severe decreases at 28% and 20% respectively. Going forward, it is likely that high streets in cities and major town centres such as Chester will have to adapt to continued lower daytime footfall from workers, providing an engaging cultural and night-time offer to help generate a range of visitors to replace lost commuters.

In addition, high streets in suburban centres and small towns can offer a long-term walkable alternative to major urban areas, if they can remain engaging and highly accessible[31].

There is therefore a need to diversify uses within town centres with many across the UK and a number within CW&C looking to move away from a retail focus and towards an increased leisure and housing offer. Combining various high street uses including housing, offices, green space, health centres, and markets has numerous benefits creating vibrancy and vitality to high streets as well as crucial footfall and longer dwell times.

Ensuring local centres within CW&C are highly accessible by sustainable modes will be a key to ensuring their success. An increased housing offer within and around town centres provides a significant opportunity to increase levels of walking and cycling and reduce demand for parking. A greater range of activities and a more diverse offer within town centres may result in changing travel needs for those accessing town centres for work or leisure, including a greater demand for travel during evenings and weekends.

A number of key transport challenges identified in Section 3.4 in relation to these key centres therefore needs to be addressed, reducing severance from key transport hubs and enhancing evening connectivity to encourage positive trends of increased footfall and town centre vitality.

Economic Performance – key findings

- CW&C has seen a 7% decline in the total number of businesses between 2019 and 2024, likely a result of the pandemic.
- The business startup rate within CW&C has remained below the national average since 2017.
- GVA growth within CW&C has remained fairly static since 2017.
- CW&C has a strong visitor economy, but total visitor numbers and the associated economic impact remain below pre-pandemic levels.
- Town centres across the borough experience high vacancy rates (particularly in Ellesmere Port and Northwich) due to changing shopping habits, highlighting the need to diversify the offer across town centres.
- All town centres have seen a significant decline in footfall between 2019 and 2022, particularly within Northwich and Ellesmere Port where footfall has declined by around 50% from 2019 levels.

[31] Creating resilient and revitalised high streets in the 'new normal', Local Government Association, Jan 2022

3.4 Accessibility

For businesses to be accessible, they should be located where they can be reached by multiple modes. To assess the accessibility of locations for businesses in CW&C, Map 3.5 scores LSOAs within CW&C based on the level of working-age population within 30 minutes by public transport during a weekday morning peak.

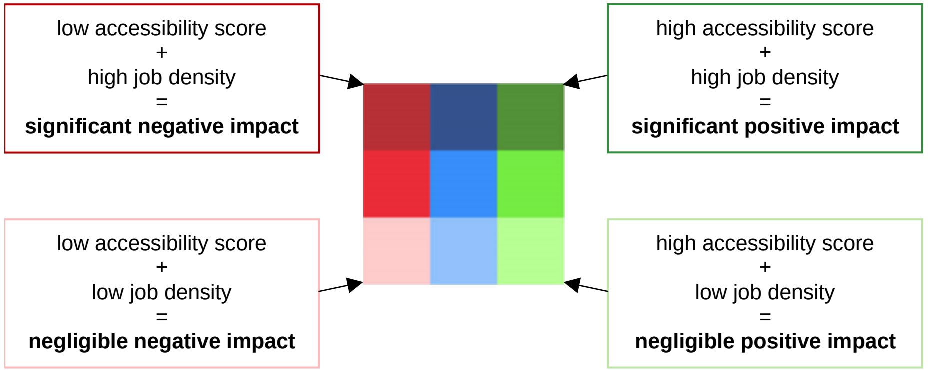
This shows that the public transport accessibility of potential employment locations is much better in the north west of the borough than in the remainder, and particularly in the triangle between Chester, Ellesmere Port and the Stanlow area. The next most accessible area is the Northwich / Winsford axis to the east of the borough, but accessibility levels for businesses are nonetheless low here and mostly reliant on private car use.

Map 3.6 overleaf refines Map 3.5 by cross referencing it against where businesses are actually located in CW&C. The map combines two variables as follows:

- The public transport accessibility to workforce by the three colour scale, with red representing a low accessibility score, blue medium, and green a high accessibility score
- Job density is represented by the shading of each accessibility colour, with lighter shades representing a low job density and darker shades representing a high job density

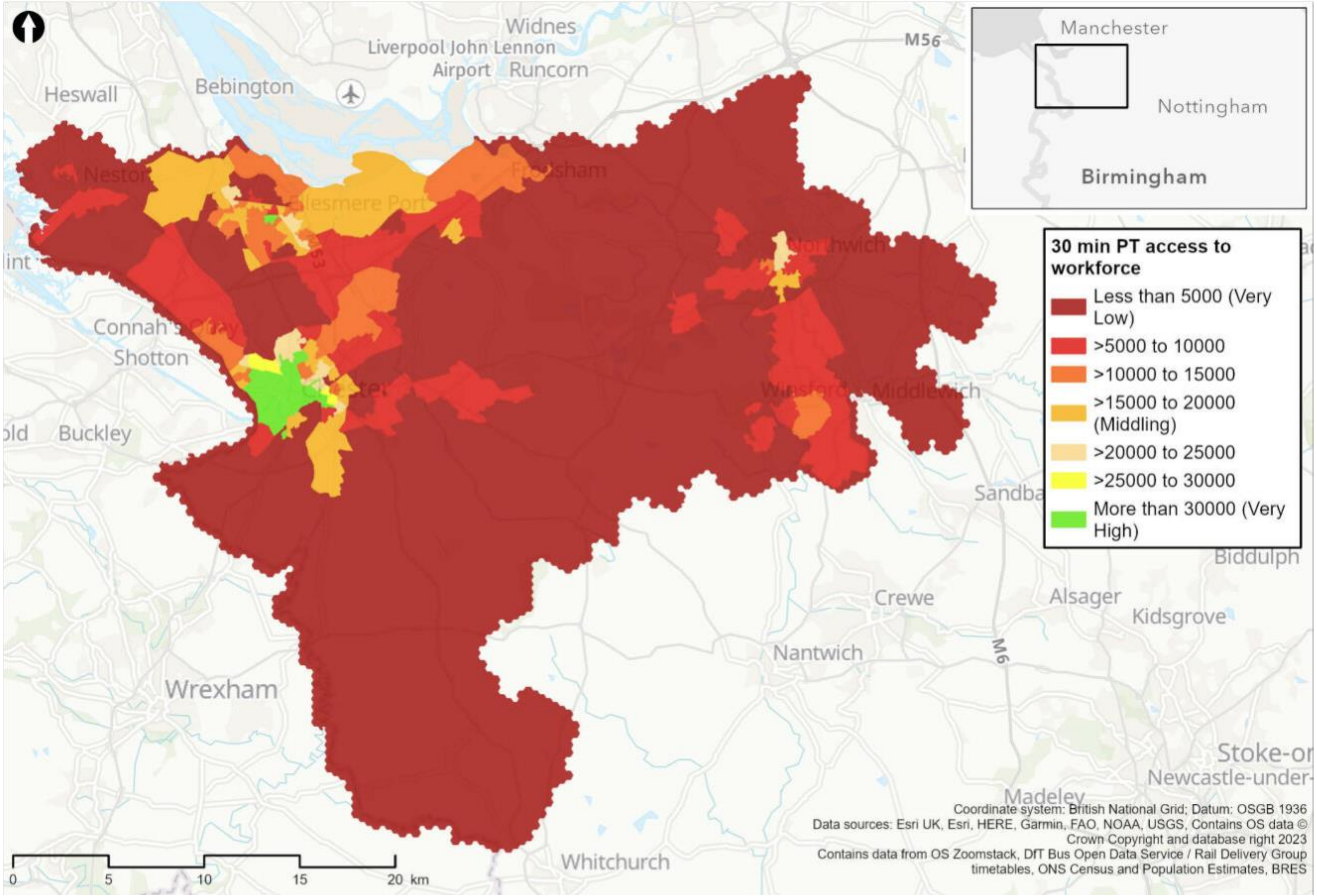
To aid understanding of this map, Figure 3.1 clarifies interpretation of the key and clarifies that darker red colours highlight areas of potential transport poverty.

Figure 3.1: Map key interpretation



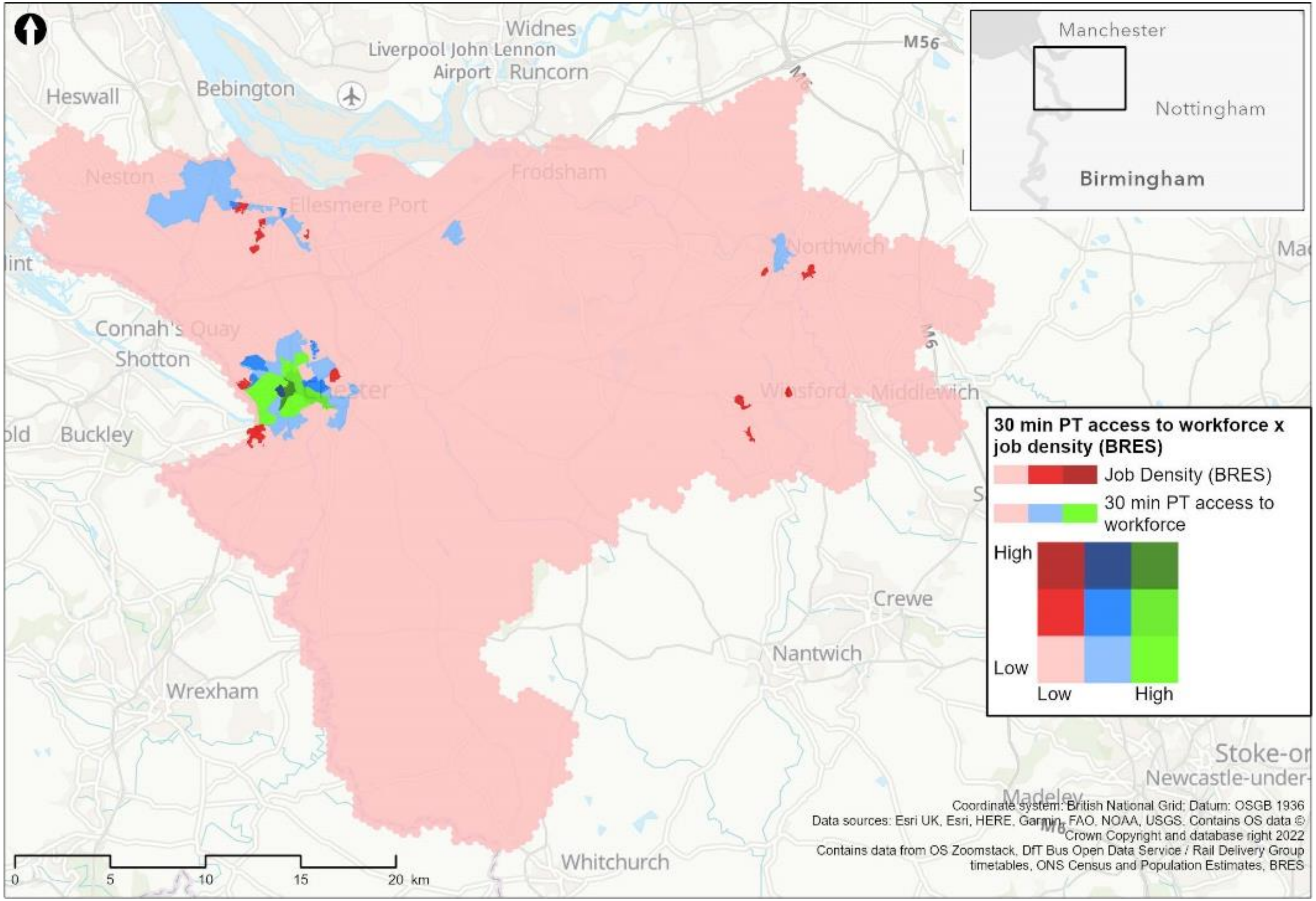
Map 3.6 highlights that, compared to Chester, most of CW&C provides both low densities of employment and low accessibility levels by public transport. This presents a challenge to encourage greater business access by non-car modes of travel.

Map 3.5: Public transport access to workforce



Source: Mott MacDonald

Map 3.6: Public transport access to workforce vs job density



Source: Mott MacDonald

Accessibility – key findings

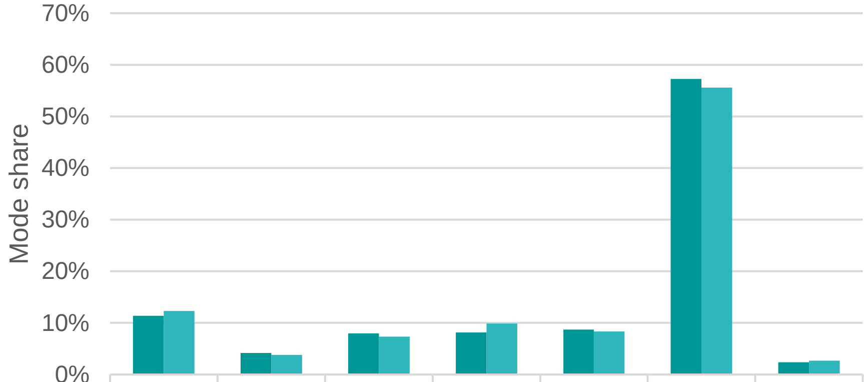
- Accessibility analysis demonstrates that, at present, Chester offers the most sustainable location for job development, with opportunities for growth in the less dense areas that are well connected by public transport.
- There are aspirations for growth in jobs and economic development around Ellesmere Port, Northwich and Winsford where job density is already high and public transport accessibility is currently low.
- Without development of public transport alternatives in these areas, any existing or future employment opportunities in these areas will need to be predominantly car-borne.

3.5 Travel

3.5.1 Data source

There is currently little bespoke data collected on how people working in CW&C travel, but travel to work data is collected for every resident in England and Wales by the national census every 10 years. The last typical dataset for this was collected in 2011 as the 2021 Census was conducted during the COVID pandemic, and so reflects atypical commuting conditions. However, 2011 data is still broadly reliable for providing headline commuter travel data results, as National Travel Survey data shows national commuter mode shares in 2023 after the pandemic to be broadly similar to those in 2011, as shown in Chart 3.12. This is therefore the data source used for this section.

Chart 3.12: England national commuter mode share in 2011 and 2023



	Walk	Cycle	Bus	Rail	Car psgr	Car driver	Other
2011	11%	4%	8%	8%	9%	57%	2%
2023	12%	4%	7%	10%	8%	56%	3%

Source: National Travel Survey, nts0409

3.5.2 Commuter geography

3.5.2.1 Net commuter flows

From the 2011 Census, Table 3.2 details the workplace destination distributions of CW&C residents and the resident origins of CW&C workers.

Table 3.2: CW&C commuter distribution

	CW&C workers	Non-CW&C workers	Total
CW&C residents	61%	39%	100%
Non-CW&C residents	39%		
Total	**100%**		

Source: 2011 Census

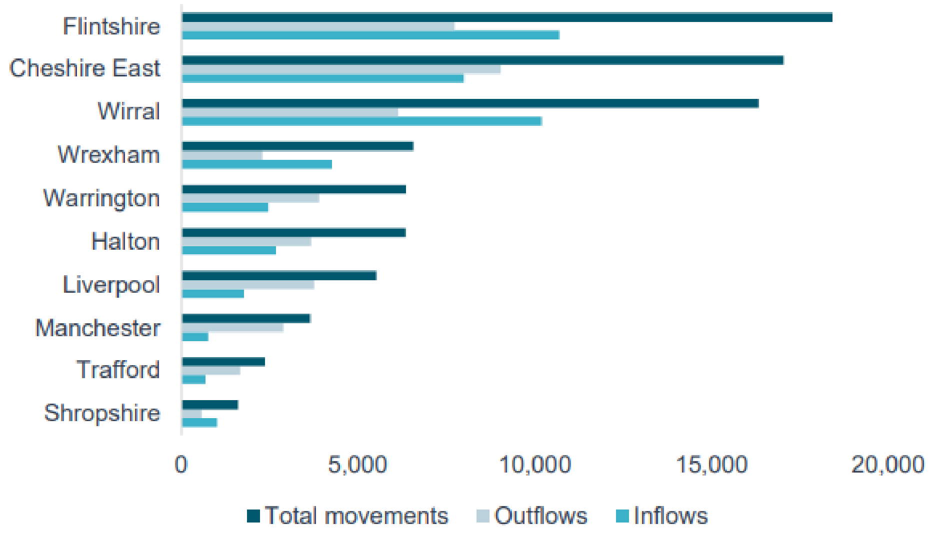
This shows that, in 2011, about 61% of CW&C employed residents worked within CW&C, with the remainder working outside. Similarly, about 61% of CW&C jobs were taken by CW&C residents, as the borough sees almost the same number of in-commuters as it does out-commuters.

3.5.2.2 Commuter spatial distribution

In terms of the geography of wider commuting, this is summarised in Chart 3.13 below for the top ten local authorities with commuting interactions with CW&C.

This chart shows that the top four local authorities with commuter interactions with CW&C are those which directly border the borough. The top of these is Flintshire, with a net inflow to CW&C, while Wirral shows the greatest net inflow in third, and Wrexham also a net inflow in fourth. Only Cheshire East in the top four shows a net outflow of commuting from CW&C, while all other further afield local authorities in the top ten – apart from Shropshire – also show a net outflow from the borough.

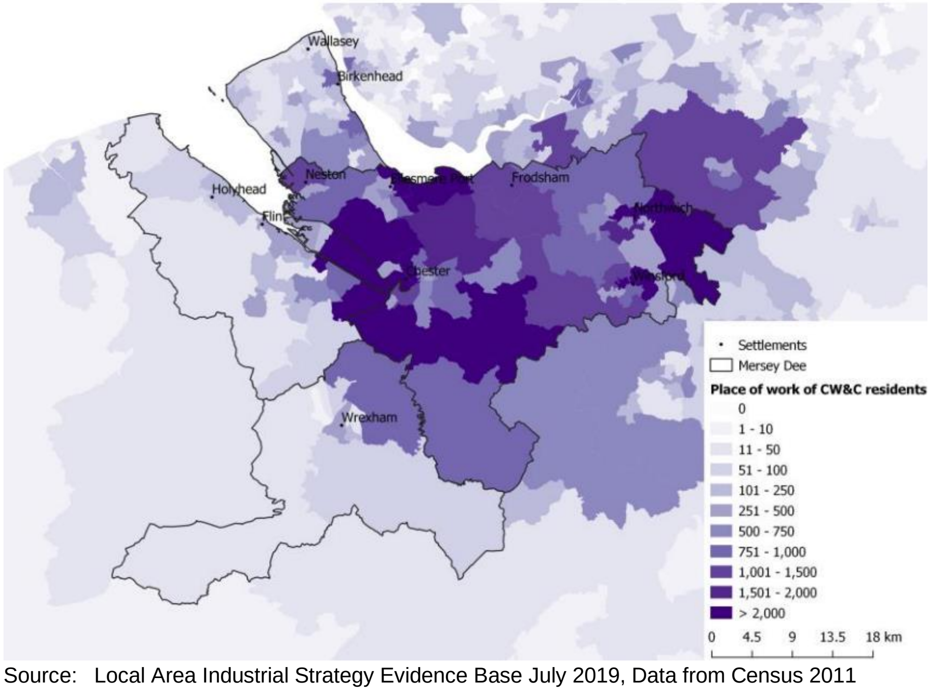
Chart 3.13: Top 10 local authorities by total commuting volumes in and out of CW&C



Source: Local Area Industrial Strategy Evidence Base July 2019, Data from Census 2011

Map 3.7 below maps the usual place of work of CW&C residents.

Map 3.7: Place of work of CW&C residents (2011)

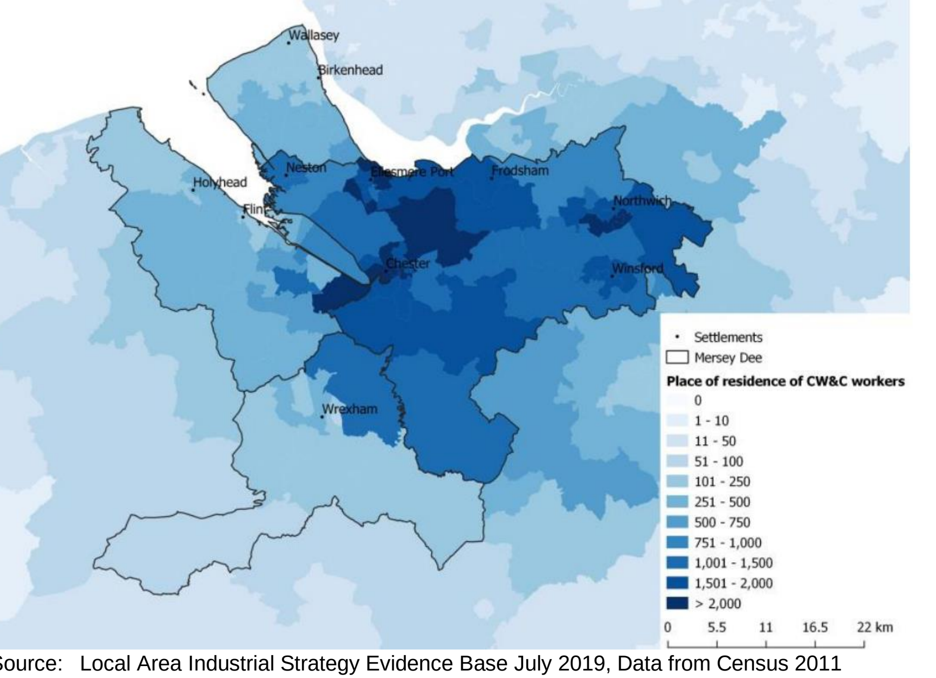


Source: Local Area Industrial Strategy Evidence Base July 2019, Data from Census 2011

This shows that the job areas within CW&C tend to coincide with urban areas, while most jobs outside the borough lie in areas directly adjoining.

Map 3.8 below maps the residential locations of CW&C workers.

Map 3.8: Place of residence of CW&C workers (2011)



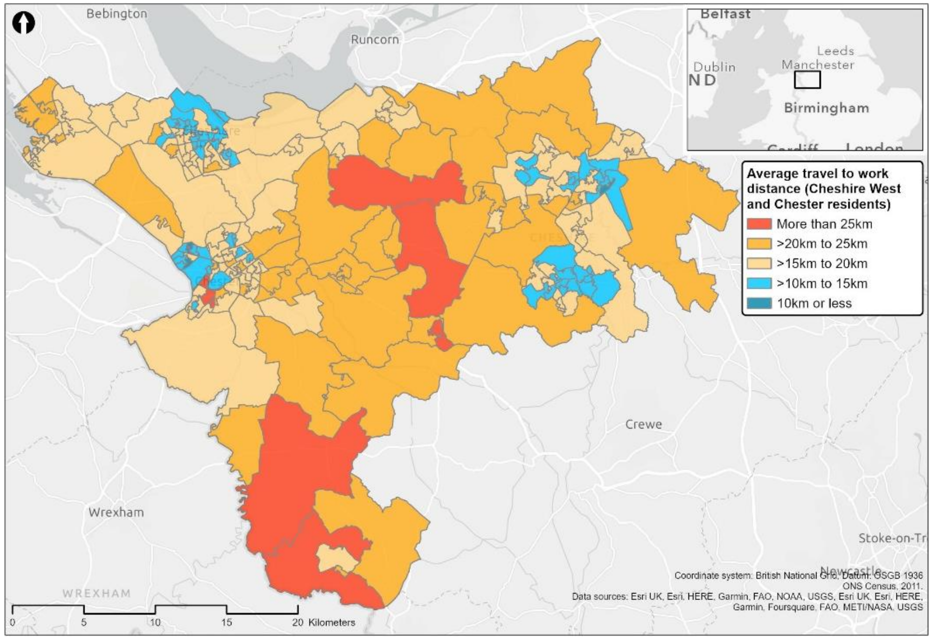
Source: Local Area Industrial Strategy Evidence Base July 2019, Data from Census 2011

This shows the greatest concentrations of in-commuters to CW&C come from nearby areas in Flintshire and Wrexham.

3.5.2.3 Commute distance

Map 3.9 below shows the average journey to work distance for CW&C residents by place of journey origin.

Map 3.9: Average commute distance by CW&C resident origin

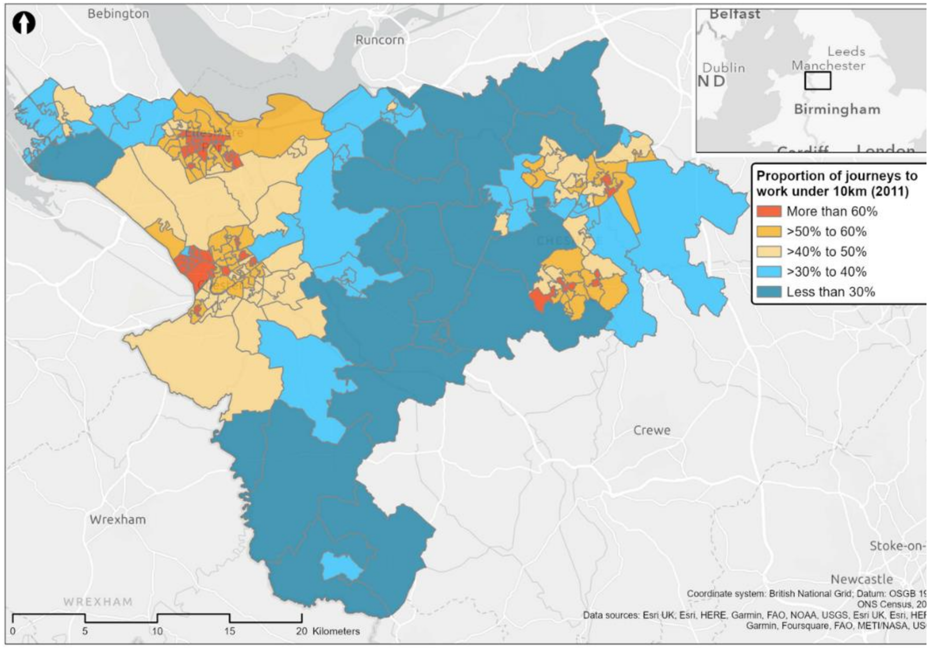


Source: Census, 2011

This map shows that travel distances for CW&C residents increase with distance from the nearest urban centre, with commute distances from the central rural area between the four main centres and from the southern rural area of the borough being greatest. Conversely, commuter distances from areas within and around the four main urban centres are lowest.

Map 3.10 illustrates the proportion of CW&C residents travelling less than 10km to work. This shows significant proportion of resits (over 60%) within central urban areas and the outskirts of key centres in Chester, Ellesmere Port Winsford and Northwich.

Map 3.10: % CW&C residents travelling less than 10km to work



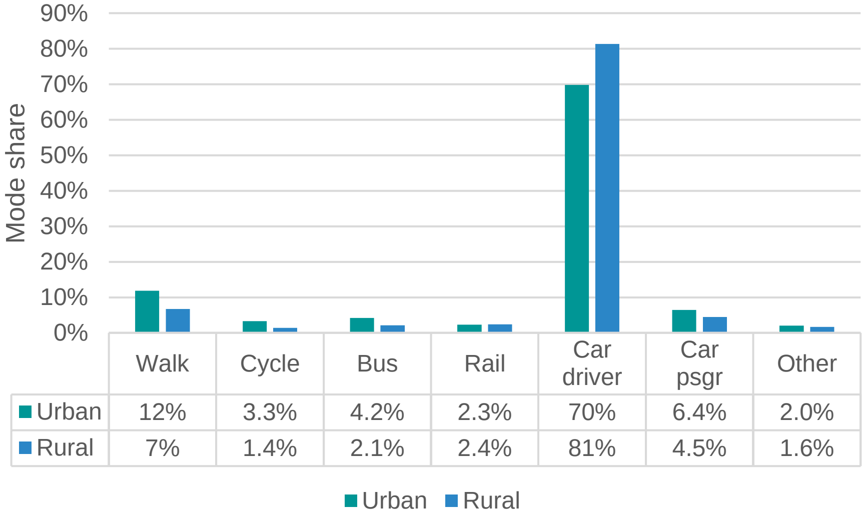
Source: Census, 2011

3.5.3 Commute mode shares

3.5.3.1 Urban/rural areas

Average CW&C mode shares by trip purpose, including commuting, are provided in Section 2.4.4 above. This subsection provides further detail on commuter travel from the 2011 census. Chart 3.14 shows CW&C commuter mode share by urban/rural origin.

Chart 3.14: CW&C commuter mode share by urban/rural origin



	Walk	Cycle	Bus	Rail	Car driver	Car psgr	Other
Urban	12%	3.3%	4.2%	2.3%	70%	6.4%	2.0%
Rural	7%	1.4%	2.1%	2.4%	81%	4.5%	1.6%

Source: Census 2011

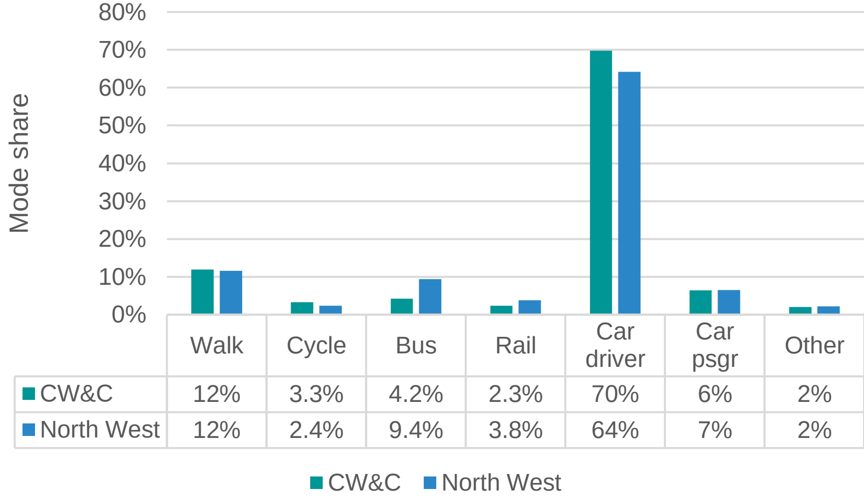
This shows some clear distinctions in commuter travel choices between urban and rural residents in CW&C, and shows that most of the 11% higher car mode share is due to:

- 5% less walking
- 2% less cycling
- 2% less bus use, and
- 2% less car sharing

These differences reflect the lower level of travel choices and longer distances available to rural areas compared to urban areas, with only rail showing negligible difference.

Chart 3.15 compares the CW&C urban commuter mode share with the North West regional urban equivalent.

Chart 3.15: Urban commuter mode share comparison, CW&C vs NW



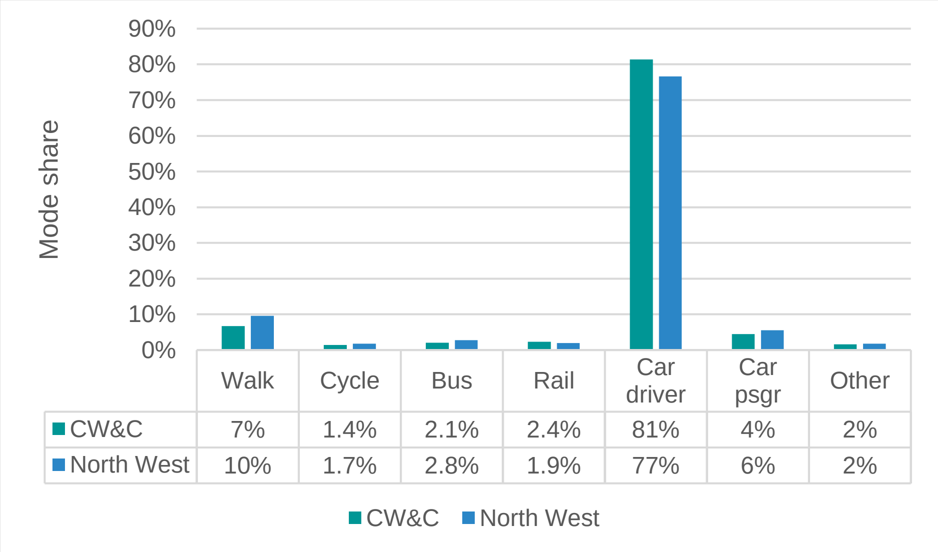
	Walk	Cycle	Bus	Rail	Car driver	Car psgr	Other
CW&C	12%	3.3%	4.2%	2.3%	70%	6%	2%
North West	12%	2.4%	9.4%	3.8%	64%	7%	2%

Source: Census 2011

This shows that commuter mode shares in CW&C urban areas are similar to the regional average for walking and car passenger modes, but noticeably less for bus and rail. The latter two differences account for most of the 6% higher car driver mode share in CW&C compared to the rest of the region, though this difference is moderated by higher cycling levels in CW&C.

Chart 3.16 compares the CW&C rural commuter mode share with the North West regional rural equivalent.

Chart 3.16: Rural commuter mode share comparison, CW&C vs NW



Source: Census 2011

This shows less of a difference between CW&C and rest-of-region rural commute mode shares, reflecting that a lack of travel choices tends to be common to all rural areas. The main difference is a little less use of all sustainable modes apart from rail in CW&C rural areas, resulting in 4% more car driver use.

Based on these results, the following table presents derived average car occupancy levels across each geography type.

Table 3.3: Average commuter car occupancy levels by geography type

Geography	Average car occupancy (persons per veh)	
	CW&C	North West
Urban	1.09	1.10
Rural	1.05	1.07

Source: Census 2011

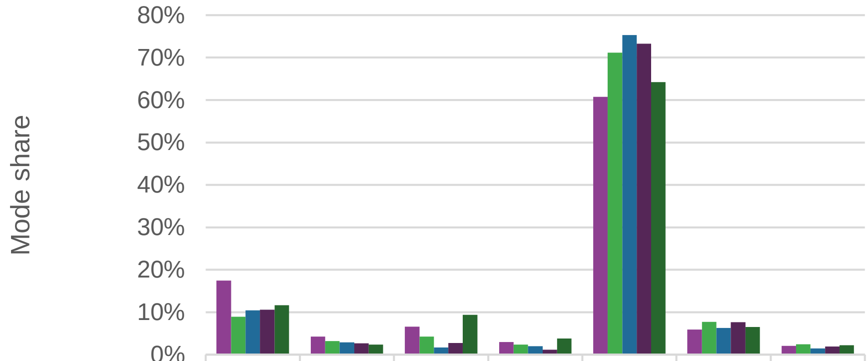
This shows that commute car occupancy levels from urban origins are slightly lower in CW&C than the regional average. Car occupancy levels from rural locations are a little lower than equivalent urban-origin journeys, and are a little lower still for CW&C rural areas than the regional average.

3.5.3.2 Urban centres

Chart 3.17 provides more detail on the urban commuter mode share result for CW&C by breaking it down by origins by main urban centre. The above North West urban average is included for reference.

This shows a clear distinction between Chester and the three other centres, with the car driver mode share being at least 10% less. The greatest contributor to this is a higher walking mode share, which reflects that the city provides more jobs within reasonable walking distances of where people live. It also shows higher bus use levels, which reflects the higher service provision in this area (see Section 4.3.2). Ellesmere Port also shows some distinction in having higher bus use levels than the two smaller towns, which also reflects greater service provision in this town. However, bus and rail use in all CW&C urban centres is below the regional urban average shown.

Chart 3.17: Commuter mode share by urban centre origin



	Walk	Cycle	Bus	Rail	Car driver	Car psgr	Other
Chester	17%	4.3%	6.6%	3.0%	61%	6%	2%
Ellesmere Port	9%	3.2%	4.2%	2.3%	71%	8%	2%
Northwich	10%	2.9%	1.7%	2.0%	75%	6%	1%
Winsford	11%	2.6%	2.7%	1.1%	73%	8%	2%
NW urban	12%	2.4%	9.4%	3.8%	64%	7%	2%

Source: Census 2011

Based on these results, the following table presents derived average car occupancy levels across each geography type.

Table 3.4: Average commuter car occupancy levels by urban centre origin

Centre	Average car occupancy (persons per veh)
Chester	1.10
Ellesmere Port	1.11
Northwich	1.08
Winsford	1.10
North West urban	1.10

Source: Census 2011

This shows very similar levels of average car occupancy for commuting from these four urban centres, with car sharing being highest for Ellesmere Port, and lowest for Northwich.

3.5.4 Working from home

The impact of COVID-19 saw a substantial change in travel to work patterns across CW&C and the UK, as a significant proportion of the population were required to work from home. This is reflected within the latest Census data collated during a period of national lockdown (March 2021).

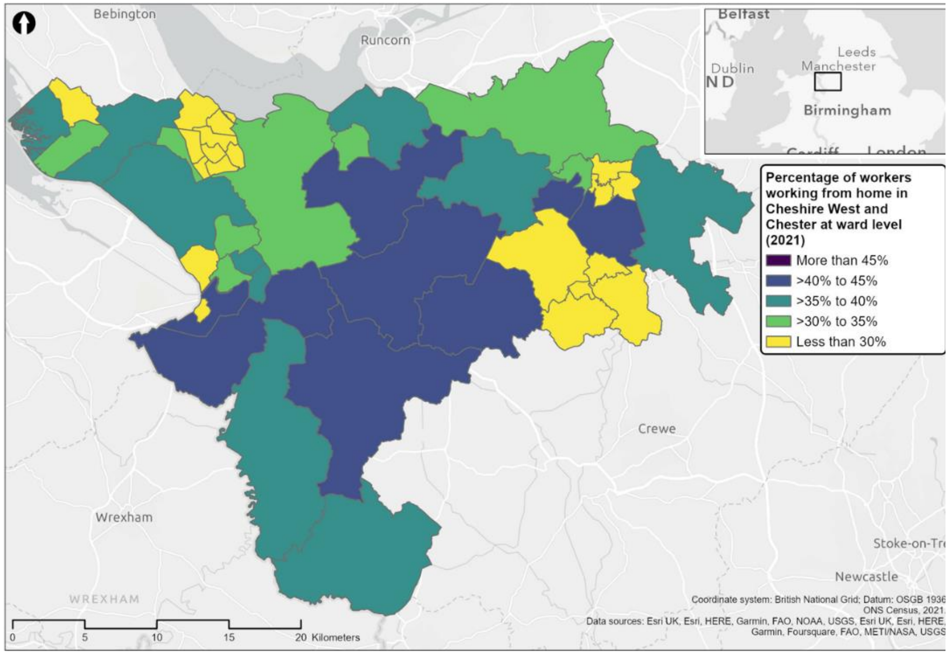
Within CW&C, the proportion of residents working mainly at or from home within 2021 more than doubled that seen in the previous Census (2011).

Figure 3.2: Proportion of CW&C residents working mainly at or from home (2001-2021)

Source: Census 2001, Census 2021

Map 3.11 illustrates the proportion of residents working mainly at or from home within 2021 by ward. This shows a number of both rural and urban areas across the borough where working from home rates are significantly higher than that seen across the borough as a whole. The highest levels of working from home can be seen within rural part of the borough and the outskirts of urban areas.

Map 3.11: % of CW&C residents working from home by ward (2021)

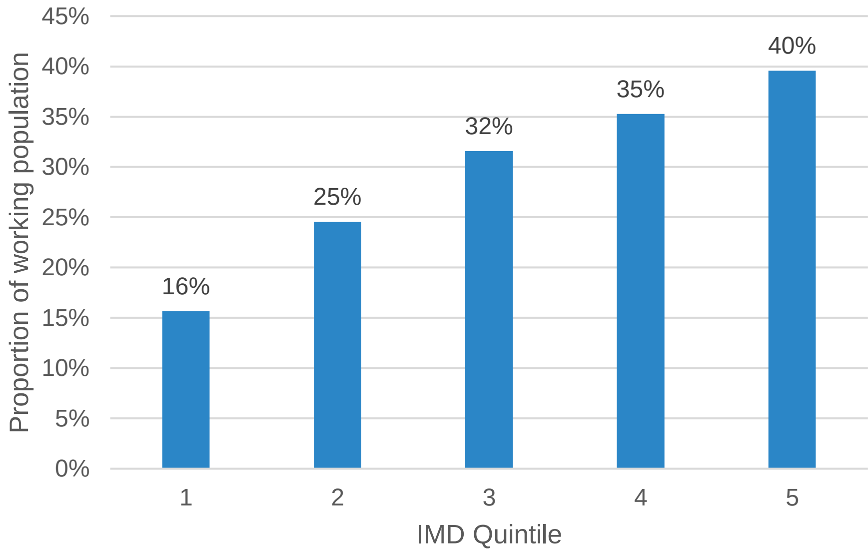


Source: Census 2021

Although this data was collated during the height of the pandemic and there has since been some restoration of travel to work patterns which is demonstrated in increasing commuter travel on public transport (See Section 4.3.3 and 4.5.2), the impact of COVID-19 is likely to have a permanent effect on commuter travel patterns reducing the need for regular travel to work and business travel. DfT transport usage data also illustrates that the demand for public transport has generally increased at a slower rate than for private vehicle trips and have generally remained below pre-Covid levels[32]. Leisure travel has also grown within the rail industry as a share of overall revenue compared to pre-pandemic, and weekend demand in particular is up a fifth (22%)[33]. Working from home provides a good opportunity to reduce the need for residents to travel, particularly for those residents in more rural parts of the borough where public transport connections are less viable.

Chart 3.18 illustrates the average working from home rate in CW&C by Indices of Multiple Deprivation (IMD) quintile within CW&C. This shows the highest levels of working from home within the least deprived LSOA's, meaning the opportunity to work from home is likely associated with higher paid jobs.

Chart 3.18: % of CW&C residents working from home in 2021 by IMD quintile



Source: Census 2021 and IMD 2019

---

[32] Domestic Transport Usage by Mode, DfT, 2023

[33] GBRTT's Train Travel Snapshot (1 January - 31 March 2023)

Travel to work – key findings

- Around 39% of jobs in CW&C are taken by non-CW&C residents, while around 39% of CW&C residents work outside of CW&C.
- Travel to work patterns show key links between CW&C and the neighbouring areas of Deeside, Wrexham, and Liverpool City Region.
- Within CW&C, the highest job densities are found in and around the four main urban areas to the north east and north west of the borough.
- Compared to the national average for urban areas, commuter car driver use is 13% higher, with lower than average bus and rail use for travelling to work, reflecting higher than average levels of car ownership, and lower levels of accessibility by public transport particularly in the north east.
- The proportion of CW&C working from home more than doubled within the period from 2011 to during the pandemic in 2021.
- There are a number rural areas across the borough with low levels of deprivation where working from home rates are significantly higher than that seen across the borough as a whole.

3.6 Economic development

The Local Plan development pipeline sets out the forecast growth in housing, employment and retail over the Local Plan period. The latest monitoring information (as of August 2022) indicates the following developments which are expected to come forward in the next 5 years [34]:

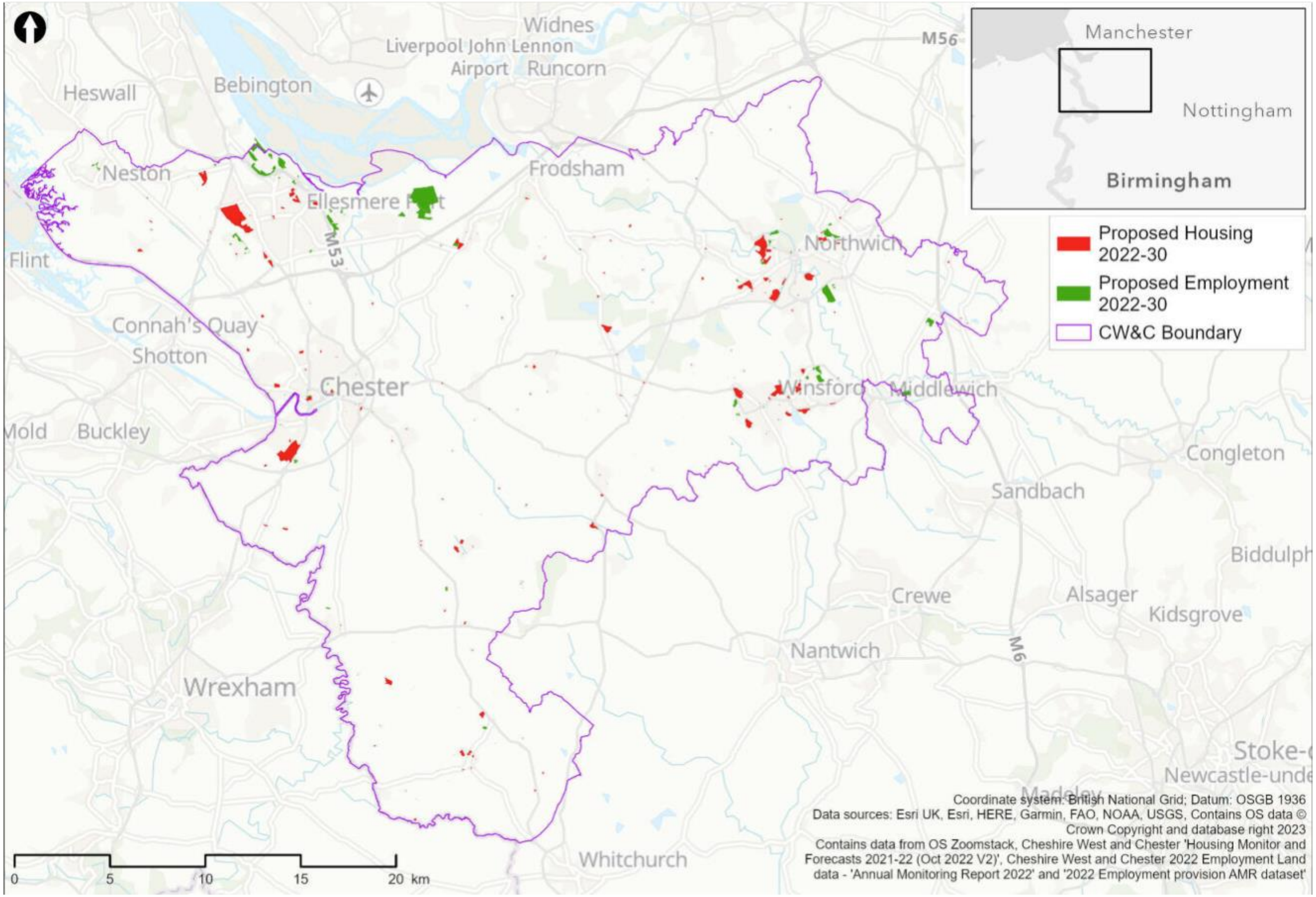
- Around 219ha of additional employment land across the borough up to 2030 (undeveloped planning permissions and undeveloped Local Plan allocations)
- Over 5,400 new residential dwellings (with up to 13,000 expected by 2030), and
- 83,220m^2 new commercial floorspace including cinemas, restaurants, bars, pubs, health and fitness centres, offices, arts and cultural and around 27, 400 m^2 retail floor space.

Map 3.12 illustrates the locations of these proposed developments. This shows that economic development and regeneration is largely focused in and around Ellesmere Port and (to a certain extent) Northwich.

A summary of the key aspirations across the four main centres is outlined on the subsequent pages.

[34] CW&C Local Housing Supply

Map 3.12: Local Plan housing and employment development

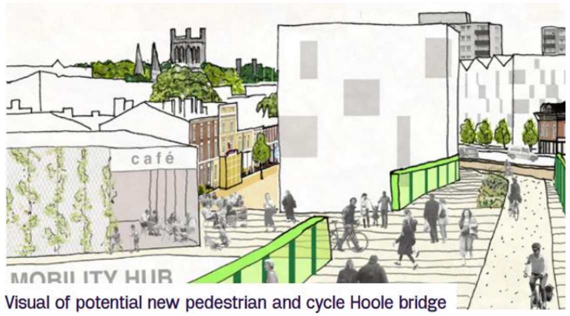


Source: CW&C - housing and employment forecasts to 2030 as at 1st August 2022

3.6.1 Chester

Chester has a diverse business base with well-known operators across many sectors including financial and business professional services; manufacturing/engineering; energy; creative & digital and health and wellbeing services. The city centre is home to many businesses in a range of office accommodation types, offices at strategic locations such as One City Place. Other key business locations include Chester Business Park, Cheshire West Employment Park, Sealand Road Industrial Estate and Capenhurst. Capenhurst is in close proximity to Chester and is home to one of the UK's largest nuclear engineering clusters, and Chester's close proximity to the Ellesmere Port Industrial area offers the city a unique opportunity to become a home for new business innovation in energy and technology. An investment prospectus has been developed for Chester which outlines a number of key aspirations for the city including:

- **Muse and One City Place** – This development represents the second phase of the new City Place scheme and comprises an additional 4.1 hectares of new homes, office space and a hotel.
- **Dee House, Chester city centre** – a unique anchor site in the heart of Chester city centre which sits adjacent to a Roman amphitheatre.
- **Northgate Future Phases** – Building on the success of the recently opened £70 million first phase, the Council is seeking partners to deliver a feasibility and phasing plan to bring forward Northgate Future phases including Goldsmith House, Hamilton House, The Forum, the old market and car park.
- **Linenhall** – potential for residential development within this site of approximately 1.8 hectares
- **Pepper Street, Chester** – A proposed new multi-storey car park rooftop hospitality venue for Chester city centre that shows the alternative sites that Chester has to offer investors.
- **Chester City Gateway** – The Chester City Gateway Strategic Regeneration Framework (SRF) sets out a 10 year vision for the area around Chester Railway Station to support the regeneration. This includes aspirations for £7.5 million investment in the station, station square public realm enhancements, additional bus stops, walking and cycling enhancements to support onward connectivity and a new mobility hub which would deliver 160 cycle spaces; cycle repair centre; hire for bikes, e-scooters and e-bikes; a new pick-up and drop-off facility. There are also aspirations for new homes within the Gateway to meet local housing need and diversify the housing stock to meet the needs of young professionals and attract new families into Chester.



Visual of potential new pedestrian and cycle Hoole bridge

Key challenges [35]

- Poor sense of arrival into Chester at Chester Railway Station
- Hoole Bridge is a particular problem for pedestrians with narrow footways and high levels of traffic
- Poor wayfinding between bus interchange and rail station
- Lack of wayfinding and legibility, creating poor linkages into Chester City Centre, and also between the Gateway and surrounding residential areas
- Vacancies within retail units within Chester City Centre and Grosvenor Shopping Centre
- Convenience of highways access has resulted in car-dominated streets and spaces, which is compounded by the lack of a coherent, well-planned car parking offer with immediate access to the Chester Station
- City Road and Brook Street are the two main routes into the city centre and are dominated by parked cars, highway infrastructure, and street furniture
- Highway infrastructure presents challenges for active modes

[35] Noted within the Chester Gateway development framework

3.6.2 Ellesmere Port

Ellesmere Port Town Centre

As the retail offer within Ellesmere Port town centre struggles to compete with Cheshire Oaks designer outlet on the edge of the town, and nearby Liverpool City Centre, development within the town centre is largely focused on increasing housing stock. Construction of up to 2,000 new homes is nearing completion within the Ledsham Garden Village development on the edge of town.

Transforming Ellesmere Port Town Centre funding has been secured for the Transforming Ellesmere Port Town Centre project which aims to deliver further housing in the town centre and diversify uses to deliver significant new footfall including new active travel infrastructure and a flexible events space within Market Hall[37]. These projects will act as a catalyst for future change – delivering new footfall and spending power, which will in turn stimulate more private sector investment, increasing the number of people travelling to and from the town centre of Ellesmere Port.

Key challenges[36]:

- Ellesmere Port town centre has been hollowed out by poor 1960s car centric design
- Declining footfall within the town centre
- Poor walking and cycling links from the town centre to surrounding residential areas
- Lack of visibility of Market Hall for pedestrians as a result of the car dominated environment
- Vacancy rates 26% (annual) compared to main market at 32%, free market 73%
- No through route on Merseyrail network limiting rail access

Cheshire Oaks Leisure and Retail Outlet

Cheshire Oaks is a large, village-style site with a wide range of retail and leisure facilities to the south of the town centre that forms a substantial form of employment and key visitor attraction, providing:

- 3,500 employees across 160 stores within the Designer Outlet. 75% of employees live in CW&C, with 85% of that number living in Ellesmere Port.
- Attracting 8.4m visitors per year pre-Covid, in 2023 on track to get back to 7.7m[38].

- On any peak day, the Outlet Park can receive 2,000 cars an hour
- High car mode share for both staff and visitors leading to congestion at peak times requirement for additional parking and traffic management plan
- Served by low frequency public transport – services reduced since COVID-19 pandemic
- Limited public transport services after 9pm to serve night-time economy

[36] As noted within Transforming Ellesmere Port LUF application and the EPIA Development framework 2021

[37] CW&C Transforming Ellesmere Port Town Centre

[38] All above data does NOT include visitors to Sainsburys, M & S, Coliseum, Blue Planet, and other food outlets in area

Origin (Ellesmere Port Industrial Area)

Origin, formerly known as Ellesmere Port Industrial Area (EPIA), currently provides 24,100 jobs through a range of 1,300 businesses and is one of the most important industrial and employment clusters in the UK. With its unique mix of heavy industry, advanced manufacturing, petrochemicals, research and development, it is capable of delivering low carbon technologies on an industrial scale.

It has the potential to fast track the UK's Green Industrial Revolution and help to achieve the UK's ambitious carbon reduction targets. It is currently home to the Vauxhall Manufacturing Plant, successful Cheshire Science Corridor Enterprise Zone, Innospec, Stanlow Oil Refinery (Essar), the University of Chester's Thornton Science Park, Encirc Glass manufacturing and bottling plant, and Peel's innovative proposals for Protos, a resource recovery and green energy park. Centred around Ellesmere Port, the Stanlow Oil Refinery and the industrial areas north of the M56, this industrial corridor accounts for up to 2.5 per cent of the UK's total energy consumption. These large scale employers represent a unique mix of heavy industrial, advanced manufacturing, petrochemical, research, development and implementation partners capable of delivering low carbon technologies on an industrial scale. Alongside these large scale employers are a number of small businesses that play a critical role in providing an array of jobs for the local community.

A Development and Infrastructure Investment Framework has recently been developed which sets an ambitious vision for the future of the area and a realistic framework and action plan for intervention within the Ellesmere Port Industrial Area.

Ellesmere Port also has Assisted Area status which allows both small businesses and large enterprises in less economically advantaged locations to benefit from additional financial support under EU Regional Aid Guidelines. This support is offered to encouraged businesses in these communities to grow, innovate and thrive.

- Only one east to west route through the EPIA, the A5117 – a busy corridor which takes significant traffic and connects to M53 Junction 10 and M56 Junction 14
- Various traffic pinch points (including rail bridges), safety of the road environment, capacity constraints and lack of resilience on local access roads in the eastern area round Protos
- Public transport access to the EPIA is limited. The rail service is underused, a minimal ('parliamentary') service which essentially provides the minimum required to avoid costly decommissioning
- The M53, the Shropshire Union Canal and the railway create barriers to connectivity for pedestrian and cyclists

3.6.3 Northwich

Northwich Town Centre has seen significant investment over the last 10 years as part of the Northwich Vision. This includes public realm improvements on Witton Street and the Bullring; the £15 million Memorial Court leisure complex, the £80m Barons Quay shopping and leisure destination; the £20m Hayhurst Quay; and Northwich Library undergoing a major £2m refurbishment that will preserve the building for years to come. A Development Framework for Northwich Town Centre has been established which sets out principles to create a cohesive spatial framework that enhances the assets and supports further regeneration. Key elements include aspirations for:

- An improved bus terminal – to enhance the point of arrival
- Redevelopment of Weaver Square – introducing residential uses
- Pedestrian improvements including crossing points along Chester way and enhanced priority at key arrival points such as the Bullring
- Improve pedestrian connections from Barons Quay to Carey Park
- Railway station improvements to improve the arrival experience for pedestrians and cyclists

Gadbrook Business Park

Gadbrook Park is a 100 acre business park situated in mid-Cheshire adjacent to the A556, offering prestige office space for Northwich and Chester, and is home to global businesses such as Barclays Bank and The Hut Group. Despite the success of Gadbrook Park and its significant opportunities for local employment, vacancy rates are increasing. Gadbrook Park is well connected to the strategic highway network, but public transport links and walking and cycling connections are poor, meaning the site is generally car dependent, leading to congested access at peak times and parking capacity constraints and challenges in workforce recruitment.

Winnington

Winnington has seen significant growth in housing over the last 10 years on the outskirts of Northwich with a further 1,500 homes proposed for development. A brand new 121,000 sq ft business park with commercial start-up, trade & industrial units has also recently been established at Winnington Business Park, further increasing the attractiveness of the area to new residents and potential investors.

Key challenges[39]:

- Poor signage and wayfinding through the town centre, particularly from rail station
- Poor crossings and heavy car traffic in key areas such as Chester Way isolates pedestrians
- Surface car parking is extensive in the area, creating urban voids and inactive frontages
- The dominance of cars along Venables Road sever the town from the northern part of Witton Street
- The linear bus hub on Chester Way is unattractive and unwelcoming
- Barons Quay retail and leisure development suffers from high vacancy rates
- Lack of evening public transport services to support night-time economy – creates issues for both employees and footfall
- High car mode share for access into the town centre (71%[40])
- Challenges with access to Gadbrook Park and poor public transport connectivity reduce the attractiveness for businesses and opportunities to reduce car mode share.
- Further housing development within Winnington will increase existing pressures on the network impacting journeys to/from the town centre and reducing reliability of public transport services

[39] Northwich Development Framework 2023

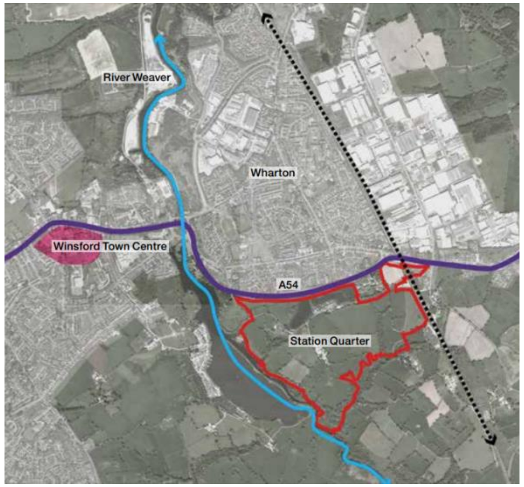
[40] Northwich Development Framework, GPS Mode share data

3.6.4 Winsford

Winsford Town Centre

Winsford town centre provides a range of retail and community facilities. In recent years, and like many other towns across the country, Winsford has faced new challenges on a number of fronts. The town is having to adapt to the increasing regional mobility of shoppers, the growth of online shopping, and the increasing concentration of comparison retail and leisure facilities in a fewer number of larger locations.

CW&C have committed funding to several ambitious projects and developments as part of its vision for the town. This includes the regeneration of Winsford town centre to unlock economic opportunities for existing and new businesses. The redevelopment scheme involves the demolition of some existing buildings and the construction of new and improved spaces for B&M and Costa Coffee, along with a new 168-space car park, improvement to walking and cycling access, and dedicated cycle storage.



To combat the challenges for town centres noted above, development in Winsford is looking to focus on reducing retail space and diversifying the offer, particularly focusing on the food and beverage market and opportunities for housing within the Town Centre.

Winsford Station Quarter

The Station Quarter is in effect an urban extension, with Cheshire West & Chester Council looking to support the delivery of around 1,000 homes on former agricultural land to the south-east of the town, an area that benefits from proximity to the railway station.

Winsford Industrial Estate

Nearly 4,000 people are currently employed on the estate in a variety of professions, ranging from food manufacturing, chemical supplies, packaging and engineering, and the estate has a first-rate mixture of premises and property available to organisations, ranging from professional start up business incubator units to large manufacturing, warehousing and logistics facilities.

Key challenges[41]

- Winsford town centre is dominated by the unattractive, uninviting and inward-looking 1970s Winsford Cross Shopping Centre that lacks predictable travel times, gateway arrival and quality car parking
- There are no linkages through the centre and no sense of arrival. A54 acts as a barrier to the Town Centre from the north
- Access, parking and public realm and service yards are confusing, with challenging car parking or highlighted routes into the town centre
- Lack of any public transport connected to the town centre and other nearby centres such as Northwich, increasing the dependency on the car and therefore, congestion on the A54
- High car mode share despite proximity to rail station
- Rail line as a major severance between local communities and key employment opportunities

[41] Winsford Development Framework 2016

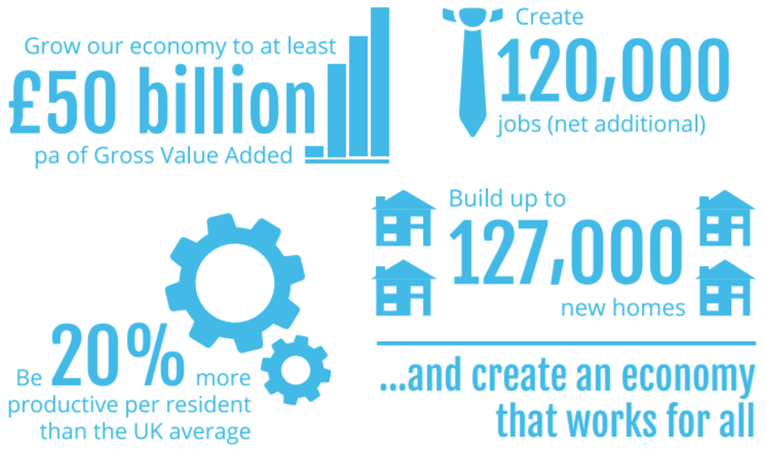
Economic Development – key findings

- Over 5,000 new homes and 219ha of employment land is expected to come forward within the next 5 years.
- A wealth of economic development and regeneration is planned across all areas of CW&C over the next few years, with a particular focus on its key centres.
- A number of key transport challenges have been identified which need to be considered in order to continue to support a thriving economy and facilitate plans for growth and regeneration. These include:
  - Provision of sustainable transport opportunities for all of the borough residents, including those within rural and difficult to reach areas, and those without access to a car to travel
  - Improved connectivity to key areas of attraction to reflect the boroughs changing age profile, i.e. improved sustainable access to health and wellbeing opportunities
  - Providing suitable transport solutions to support a re-focusing of city and town centre activity towards residential, leisure, food and drink and night-time economic uses.

3.7 Future growth

At the regional level, economic growth across CW&C is driven by the Cheshire and Warrington (C&W) Local Enterprise Partnership (LEP) Strategic Economic Plan (SEP). The SEP is a strategy to support growth and economic development over the next 20+ years, doubling the size of the economy and setting out the key economic, environmental and social strengths on which growth will be founded. Figure 3.3 sets out the key aims the SEP seeks to achieve by 2040.

Figure 3.3: C&W SEP aspirations



Source: Cheshire and Warrington, Strategic Economic Plan (SEP)

The plan identifies a number of key areas for growth, focussed on a small number of defined, spatial propositions. The key growth areas relevant to CW&C include:

- Cheshire Science Corridor / Enterprise Zone: Cheshire has some of the most significant science-based assets in the north of England, some of which within CW&C are of global importance in key growth sectors including:
  - *Capenhurst Technology Park* – a cluster of leading companies at the site of the former Electricity Council Research and Development Centre, adjacent to URENCO's uranium enrichment and nuclear waste treatment plant
  - *Thornton Science Park* – formerly Shell's European Research HQ and now home to the University of Chester's Faculty of Science and Engineering and the Energy Security and Innovation Observing System for the Subsurface (ESIOS) funded by the British Geological Society and the National Environmental Research Council

  - *Protos* – where Peel Environmental is creating a nationally strategic energy hub including the Frodsham Wind Farm, energy from waste facility, biomass facility and environmental technologies including resource recovery
- Mersey Dee Economic Axis: Generating some £22 billion of GVA per year, this area comprises North East Wales, West Cheshire, and the Wirral. Sitting astride the major estuaries of both the Mersey and the Dee is a major conurbation comprising the historic and dynamic City of Chester, Ellesmere Port (with its Assisted Area Status), Stanlow and Thornton and Deeside (one of the UK's largest and most successful industrial and business locations)

Good transport and connectivity are essential to support better productivity and greater access to skilled labour. The LEP recognises that exploiting the economic benefits of connectivity, especially between core economic centres, and creating greater multimodal connectivity across Cheshire and Warrington – linked to the delivery of major projects such as HS2 and Northern Powerhouse Rail – is key.

Future Trends – key findings

- The Cheshire and Warrington economy is set to grow to £50 billion GVA per year by 2040.
- A number of key business parks and industrial sites within Chester and Ellesmere Port will be a key focus for economic growth and development for the C&W LEP.
- CW&C is situated within the Mersey Dee Economic Axis and therefore has strong links to North East Wales and the Wirral and will play a key role in regional economic growth.

3.8 Supporting a thriving economy – summary

A STEADY INCREASE IN ANNUAL VISITORS TO CW&C, FROM AROUND **23 MILLION** IN **2010** TO A PEAK OF OVER **37 MILLION** IN **2019**, GRADUALLY RECOVERING POST PANDEMIC TO **24.5 MILLION** IN **2021**

FOOTFALL TRENDS ACROSS KEY TOWN CENTRES REMAIN **BELOW PRE COVID** LEVELS

VACANCY RATES AS HIGH AS 26% IN TOWN CENTRES SUCH AS **ELLESMERE PORT**

AROUND **61%** OF CW&C EMPLOYED RESIDENTS WORKED WITHIN CW&C

HOME TO **CHESHIRE SCIENCE CORRIDOR** SITES INCLUDING ELLESMERE PORT, THORNTON AND PROTOS

219HA OF ADDITIONAL EMPLOYMENT, OVER **3, 800 NEW DWELLINGS**; AND **85, 023**M_2 NEW RETAIL FLOORSPACE PLANNED ACROSS THE BOROUGH UP TO 2030

ASPIRATIONS TO GROW THE ECONOMY ACROSS CHESHIRE AND WARRINGTON TO AT LEAST **£50 BILLION PA** OF GVA BY 2040, CREATING **120, 000 ADDITIONAL JOBS**

BETWEEN **2015** AND **2019**, THE TOTAL EMPLOYEE GROWTH IN CW&C WAS **+1.2%**, COMPARED TO **+4.6%** ACROSS GB

EMPLOYEE GROWTH GREATEST IN **PROFESSIONAL, SCIENTIFIC, AND TECHNICAL ACTIVITIES** BETWEEN 2015 AND 2019

THE NUMBER OF **BUSINESSES** WITHIN CW&C BETWEEN 2016 AND 2024 HAS **DECLINED** BY **5.5%**

AMBITIOUS PLANS OR ECONOMIC DEVELOPMENT AND **REGENERATION** WITHIN KEY **URBAN CENTRES** OF NORTHWICH, ELLESMERE PORT, CHESTER AND WINSFORD, WHICH FACE **KEY TRANSPORT CHALLENGES**

WHAT DOES THIS MEAN FOR CW&C LTP4?

CW&C is an area of strong economic opportunity and potential for growth, and is home to key sites within the Cheshire Science Corridor and Mersey Dee Economic Axis. Although overall growth in GVA across the borough has been observed over the last 10 years, this growth rate has been slowing somewhat. The visitor economy remains a strong sector within CW&C that has seen year-on-year growth in recent years, but current visitor numbers and associated economic impact remain below pre pandemic levels.

Good transport and connectivity (including digital connectivity) between residential areas and key attractions is essential to support better productivity and growth within both the tourism and retail sectors, as well as the borough’s skilled employment and education offer. Accessibility for visitors, shoppers, commuters and residents is essential to the growth of key centres and success in attracting new outside investment opportunities, which is needed to secure economic prosperity. Sufficient digital infrastrtcure is important to support the large proportion of the population within more rural parts of the borough working from home. This will support the reduced need for travel and in turn help address some of the key transport challenges faced within rural areas.

Some of the densest job areas and areas of growth across the borough are on the fringes of the core urban centres, with town centres and the city centre of Chester showing high vacancy rates and a decline in footfall. At present the borough displays a significant east-west divide with stronger public transport connections observed in Chester and Ellesmere Port, and significantly weaker links prevalent into and across Northwich, Winsford, and the more rural areas (see Section 4.4.2 and 4.6.1). This raises challenges of single occupancy car use for commuting to outer urban areas, and attracting businesses and demand back to urban centres. Sustainable access to these areas is increasingly important for residents within communities highlighted in Section 2.3 that are most at risk of transport poverty and social exclusion, and that currently suffer from higher than average levels of deprivation, unemployment and low car ownership, such as communities around Ellesmere Port, Winsford, Chester and Northwich.

There are also a significant number of CW&C residents working outside of the borough (over one third), and over one third of jobs in CW&C are taken by non-CW&C residents creating high flows of commuting in and out of the borough. This emphasises the importance of cross border links via public transport to support sustainable commuter patterns. Car commuter mode share is high for all residents across CW&C, including in urban areas where car commuter mode share is higher than the national average, and bus and rail use are significantly below the national average. Urban centres are therefore likely to be a key focus for transport strategies.

4 Delivering efficient networks

4.1 Introduction

An effective transport system for CW&C should efficiently serve the travel needs of communities and the economy through a choice of networks. In this section, the current offer and performance of the borough's transport system is explored with a view to identifying the key issues and opportunities to be addressed through the LTP to deliver efficient transport networks.

4.2 Active travel

4.2.1 Benefits of active travel

Active travel refers to making a journey in a physically active way. This includes journeys by cycling, the action of moving at speed on a wide range of pedal-powered wheeled transport, or by walking and wheeling, the action of moving as a pedestrian, whether or not someone is walking or wheeling unaided or using any kind of wheeled mobility aid. Regular physical activity benefits both physical and mental health. Keeping physically active can reduce risk of cardiovascular disease by as much as 35% and the risk of early death by as much as 30% according to latest research. The current chief medical officer guidance is for adults to take part in 150 minutes of moderate activity per week and one way to achieve this is to do 30 minutes exercise 5 times per week – the perfect length of time for short local journeys undertaken on foot.

Cycling specifically can raise your metabolic rate, helping to keep weight off, and moderate pedal pushing burns up to 500 calories per hour, more than either walking or swimming.[42]

Physical activity can also help to prevent and manage over 20 chronic conditions and diseases, including some cancers, heart disease, type 2 diabetes and depression. Physical inactivity is responsible for one in six UK deaths (equal to smoking) and is estimated to cost the UK £7.4 billion annually (including £0.9 billion to the NHS alone).

In addition to health benefits, increasing levels of active travel is one of the most cost-effective ways of reducing transport emissions, as outlined in the DfT's transport decarbonisation plan. It is estimated that active travel can deliver between 1 MtCO2e and 6 MtCO2e savings from 2020 to 2050.

A shift towards walking and cycling also has economic benefits, increasing the efficiency of the road network, increasing footfall and supporting jobs in manufacturing and retail. Increasing active travel will reduce road congestion, particularly at peak times, leading to increased productivity and improved movement of goods and services. Sustrans estimates that congestion costs £10 billion per year in 2009 in urban areas, and that this cost could rise to £22 billion by 2025. The Transport Decarbonisation Plan also states that cycle manufacture, distribution, retail and sales contribute £0.8 billion per year to the economy and support around 22,000 jobs[43].

4.2.2 Walking

4.2.2.1 Walking network

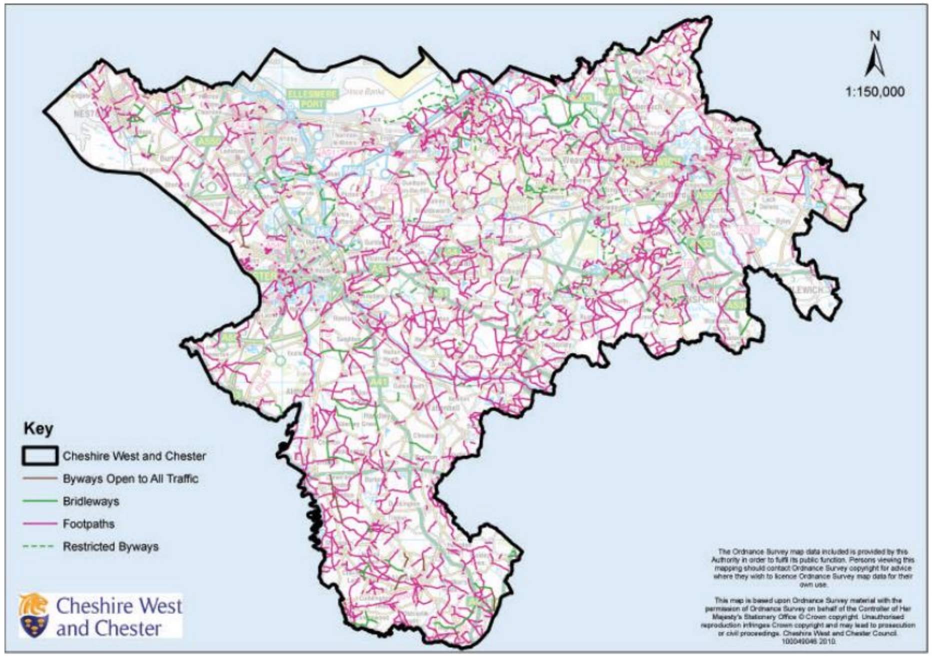
Public rights of way (PRoW) can include footpaths, bridleways, restricted byways, and byways open to all traffic (BOATs). As well as providing leisure and recreation functions, PRoW can provide improved community physical

[42] Health benefits of cycling and walking - Sustrans.org.uk

[43] Active travel: local authority toolkit, DfT 2022

and mental wellbeing through free physical activity. They also provide children, commuters and visitors with a means of getting to and from school, places of work and accessing green areas and shops and services without the need for a car.[44] There are more than 1,267 kilometres of rights of way in the borough[45] (see Map 4.1).

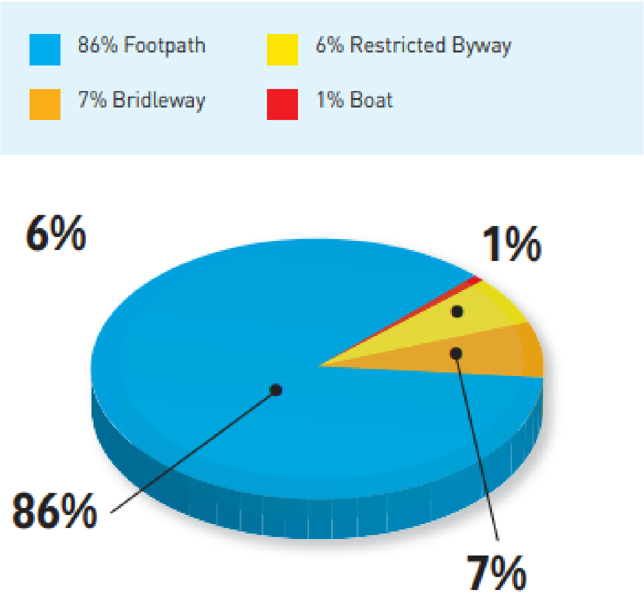
Map 4.1: CW&C public rights of way network



Source: CW&C (2011) Rights of Way Improvement Plan

Figure 4.1 shows what proportion of the total PRoW network is made up by each type of path. Walkers are the only type of user who can use the entire network (100%). Although there is localised fragmentation, there is generally good coverage for walking in the borough. Horse riders and cyclists can use bridleways, BOATs and restricted byways which make up 14% of the network.

Figure 4.1: PRoW breakdown by type



Source: CW&C (2011) Rights of Way Improvement Plan

These routes are highly fragmentated and connectivity often involves using the highway network, raising road safety issues.

[44] CW&C Rights of Way Improvement Plan. Available at: rowip-may-2012 (cheshirewestandchester.gov.uk)

[45] CW&C - https://www.cheshirewestandchester.gov.uk/residents/transport-and-roads/public-rights-of-way

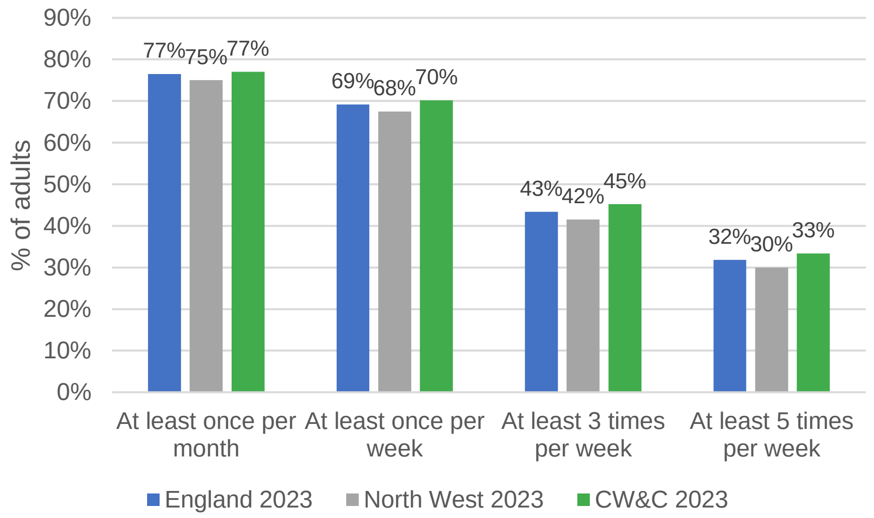
The Rights of Way Improvement Plan assessed how much of the network is accessible for people with mobility or visual impairment. It concluded that 15% of the walking network was accessible to these users at that time.

4.2.2.2 Walking levels

DfT prepare walking statistics based on results from the Active Lives Survey[46][47] (previously the Active People Survey), which is an annual household survey administered by Sport England. The survey samples at least 500 people for each local authority over four weeks in October every year. Chart 4.1 illustrates how frequently adults in CW&C walk for at least 10 minutes in comparison to regional and national levels in 2023.

This shows that the proportion of adults walking within CW&C was very similar in 2023 to both the regional and national level. The proportion of walking at least once per month in CW&C is around 2% higher than the North West as a whole but about the same as England, and this pattern is similar for the proportion who walk at least once per week and at more frequent rates. It is noted that Table 2.2 within Section 2.2.6 above shows that CW&C also has above national average levels of adult obesity (68.3% compared to 64.0%) but also above average proportions of adult levels of physical activity (72.4% compared to 67.1%). Public health data also suggests that the percentage of adults walking for travel at least three days per week in 2023 is lower than the regional and national average, at 11.9% of adults compared to 13.4% and 15.1% across the North West and England respectively[48].

Chart 4.1: Proportion of adults who walk for at least 10 minutes by frequency (2023)



Source: DfT Walking and Cycling Statistics

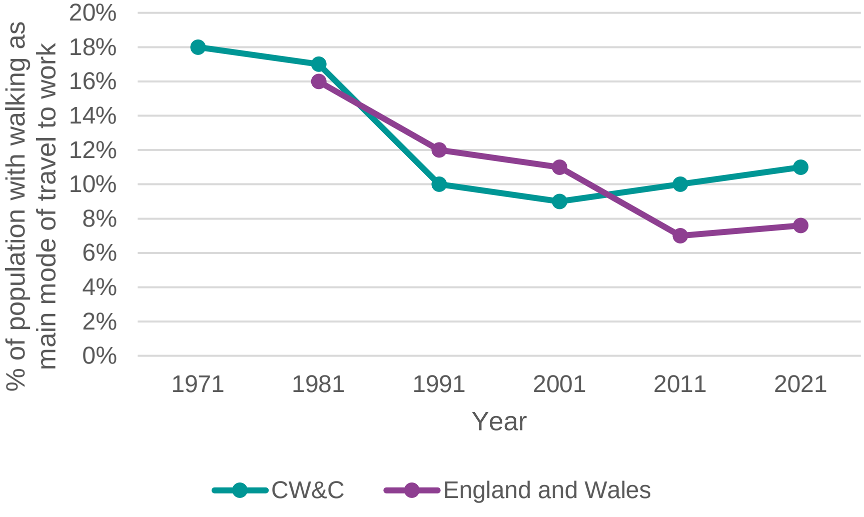
An additional source of data for levels of walking is the Census travel to work data, which details travel choices for commute trips. Chart 4.2 shows for CW&C how the mode share of walking trips to work has reduced from about 18% in 1971 to about 10% in 1991, before rising slightly again to 11% in 2021. The national trend shows walking having steadily fallen from 16% in 1981 to just under 8% in the latest 2021 statistics. These proportions do not include work from home figures, as the 2021 data is skewed by the COVID 19 pandemic where work from home was advised, and public transport was not at full capacity.

[46] DfT Gear Change

[47] Active Lives | Home (sportengland.org)

[48] Public Health England, 2021/2022

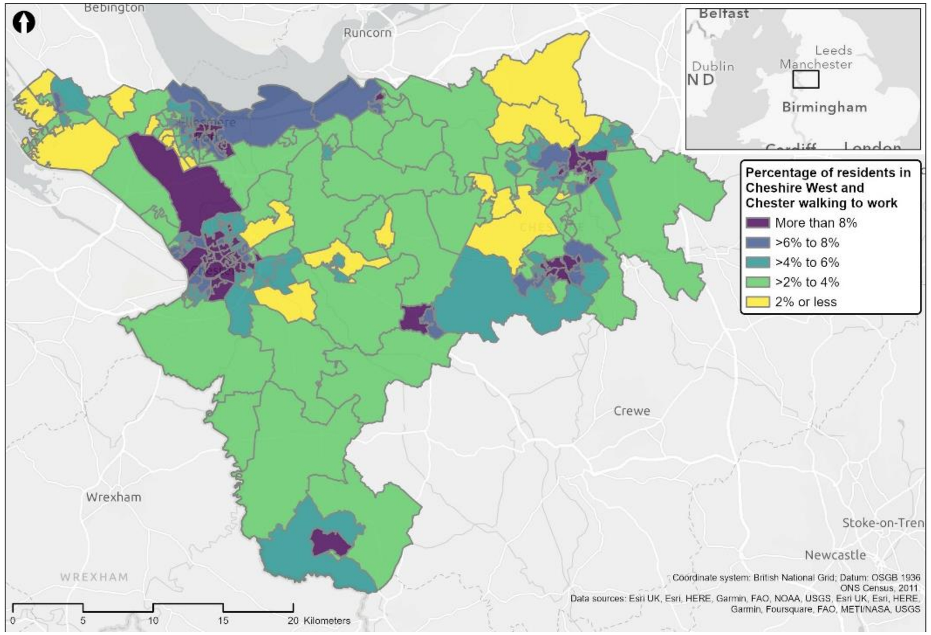
Chart 4.2: Trends in walking to work in CW&C and England and Wales from 1971 until 2021 (excluding 'work from home')



Source: Census 1971-2021

Map 4.2 shows, from the 2011 Census, how commuter walking mode shares vary across CW&C.

Map 4.2: Distribution of commuter walk mode shares in CW&C



Source: Census 2011

This highlights how walking mode shares are inevitably highest in urban areas, and particularly Chester where job and population densities are highest. Conversely, across most of the borough, which is predominantly rural, walking mode shares are low.

A Local Cycling and Walking Infrastructure Plan (LCWIP) for CW&C was published in 2020[49]. 73% of respondents surveyed in production of this report indicated that the planned walking measures would encourage them to make

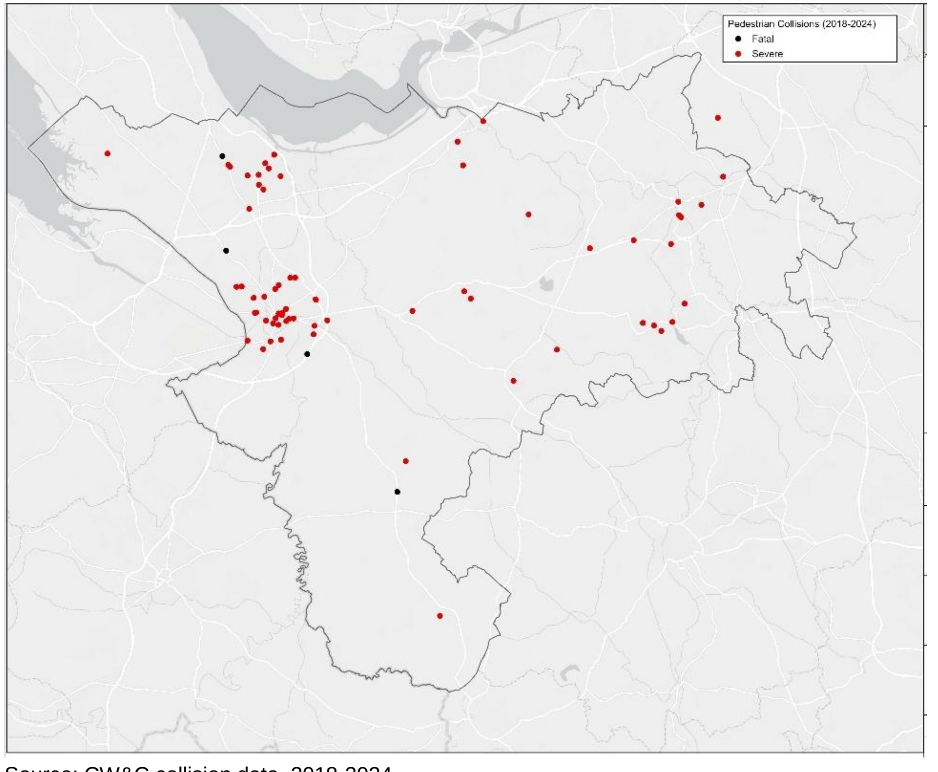
[49] local-cycling-and-walking-infrastructure-plan-2020-2030 (cheshirewestandchester.gov.uk)

more journeys by foot. The proposed schemes therefore offer a significant opportunity to increase levels of walking across the borough.

4.2.2.3 Walking safety

Collision data which resulted in the injury of a pedestrian between May 2018 and April 2024 is reported in Map 4.3 and Table 4.1 below. Five fatal collisions were recorded: one in Ellesmere Port, three in Chester, and one in a rural location to the southeast of the local authority area.

Map 4.3: Road collisions including one or more pedestrian (2018-24)



Source: CW&C collision data, 2018-2024

Table 4.1: Road collisions including one or more pedestrian (2018-24)

Category	Casualties	
	Serious	Fatal
A road	29	5
B road	5	0
C road / unclassified	42	0
Total	**81**	**5**

Source: CW&C collision data, 2018-2024

The data shows that most serious pedestrian accidents occur on C-class or unclassified roads, while the map shows the densest clusters within the main urban areas of Chester and Ellesmere Port.

Crime is also a key factor in reducing perceptions of personal safety and security and can therefore discourage walking and cycling as modes of transport. This is particularly the case around the key urban centres as shown in Section 2.2.5.

4.2.3 Cycling

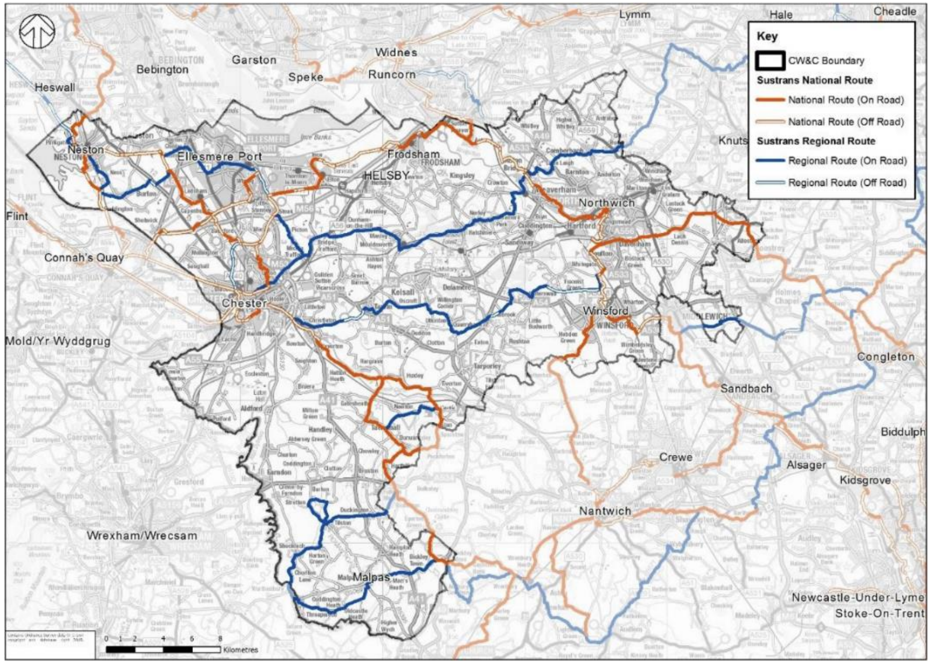
4.2.3.1 Cycling network

The existing strategic and national network for the study area is shown in Map 4.4 from the LCWIP.

This shows a network of Sustrans regional and national routes through the borough, providing continuous, or near-continuous, connections between the main urban centres.

Detailed maps of local areas such as Chester can be found here: http://itravelsmart.co.uk/cycle/.

Map 4.4: CW&C existing cycling route network

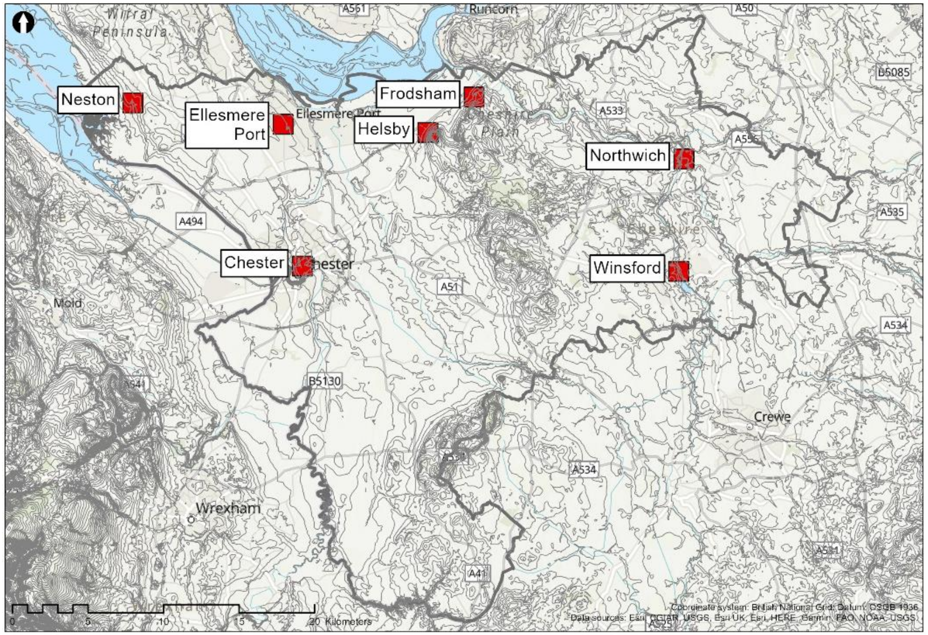


Source: Cheshire West and Chester LCWIP

4.2.3.2 Topography

Topography can be one of the biggest barriers to cycling uptake, and within some areas of CW&C there are topography constraints, representing an obvious challenge for people wanting to cycle. The topography of CW&C is shown in Map 4.5 below.

Map 4.5: CW&C topography



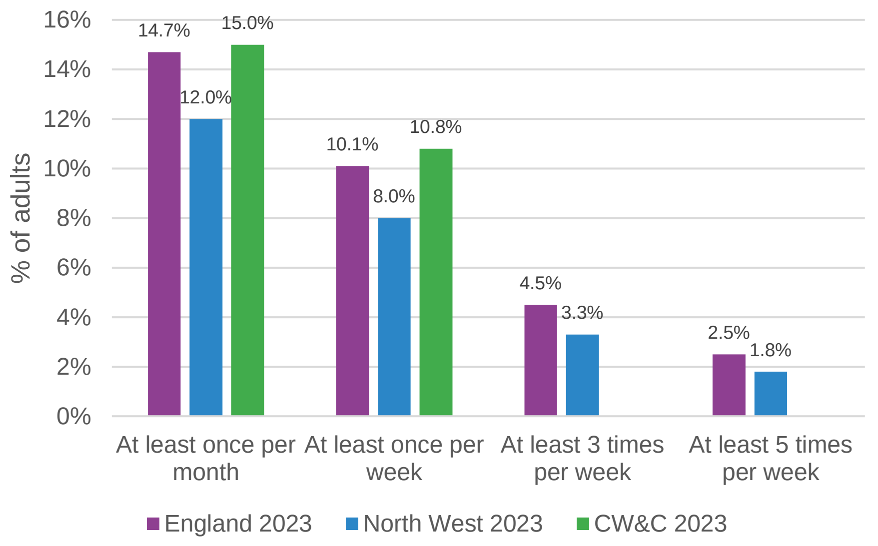
Source: Ordnance Survey

This shows that west CW&C is relatively flat, while the hillier sections are located to the east and south of the area. In these more challenging topographical areas, cycling infrastructure needs to be considered more carefully particularly accounting for the extra space required for ‘wobble room’. The wider market trend and increasing popularity of e-bikes which more easily overcome steep gradients could result in increased use of infrastructure in these hillier areas.

4.2.3.3 Cycling levels

Chart 4.3 illustrates how frequently adults cycle in CW&C compared to the North West and England. The proportion of adults cycling within CW&C is higher than the regional and national average for at least once per month and once per week, but for the higher frequencies the sample sizes are too low and the result is not available.

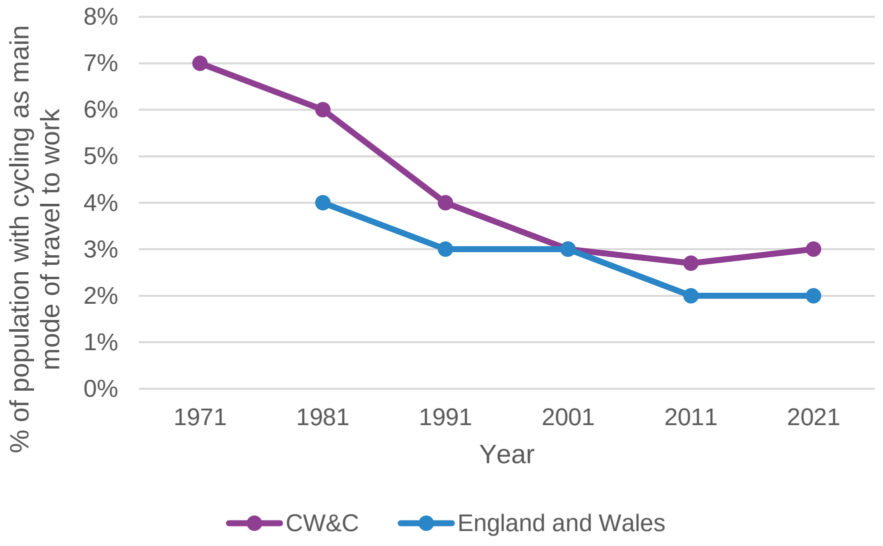
Chart 4.3: Proportion of adults who cycle by frequency (2023)



Source: DfT Walking and Cycling Statistics

An additional source of data for levels of cycling is the Census travel to work 2011 data, which details travel choices for commute trips. Chart 4.4 shows for CW&C how the mode share of cycling trips to work has reduced from about 7% in 1971 to about 3% in 2001, where it remains around that percentage to 2021. The national trend in cycling as a commuting mode also shows a decrease from 4% in 1981 to around 2% in the 2021 census. These proportions do not include work from home figures as the 2021 data is skewed by the COVID 19 pandemic where work from home was advised, and public transport was not at full capacity.

Chart 4.4: Trends in cycling to work from 1971-2021 (excluding 'work from home')



Source: Census

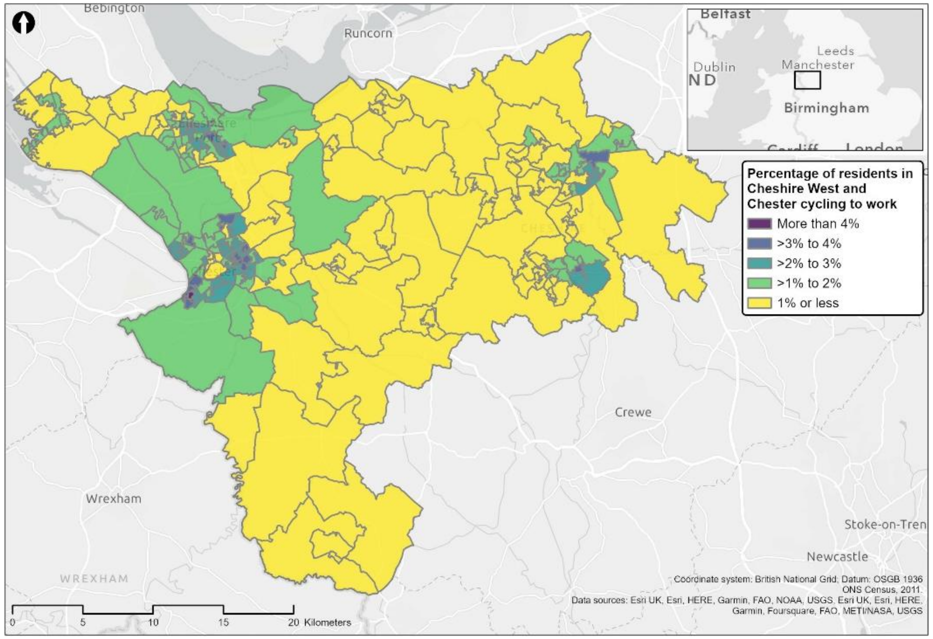
Public health data, however, suggests that the percentage of adults cycling for travel at least three days per week in 2020/2021 is lower than the regional and national average, at 1.6% of adults compared to 1.8% and 2.3% across the North West and England respectively[50].

Map 4.6 shows, from the 2011 Census, how commuter cycling mode shares vary across CW&C.

[50] Public Health England, 2021/2022

This shows how cycling levels are generally low across the borough, but highest in and around the four main urban areas.

Map 4.6: Distribution of commuter cycling mode shares in CW&C



Source: Census, 2011

As noted above, an LCWIP has been developed for CW&C with proposals to extend and enhance a number of cycling routes across the borough. Within the LCWIP consultation survey, 76% of respondents indicated that the planned cycling measures would encourage them to make more journeys by bicycle. The proposed schemes therefore offer a significant opportunity to increase levels of cycling across the borough.

4.2.3.4 Cyclist safety

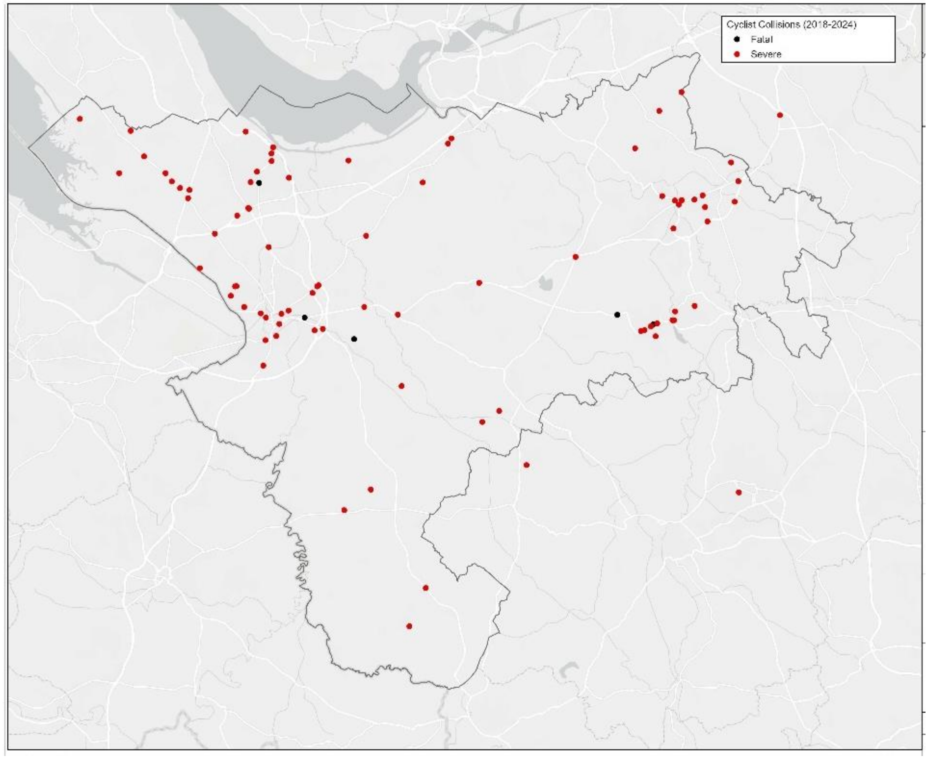
Collision data which recorded the injury of a cyclist between May 2018 and April 2024 is reported in Table 4.2 and Map 4.7 below. In total, four fatal collisions were recorded, with two in Chester, one in Ellesmere Port, and two in Winsford to the east of the local authority area. Collisions take place in both urban and rural locations and on both A roads and C roads. This reflects the increased potential for conflicts in urban areas and the increased potential for higher speeds and poor visibility on rural roads.

Table 4.2: Road collisions involving one or more cyclists (2018-24)

Category	Casualties	
	Serious	Fatal
A road	43	3
B road	14	0
C road / unclassified	42	2
Total	**99**	**5**

Source: CW&C collision data, 2018-2024

Map 4.7: Road collisions involving one or more cyclists (2018-24)



Source: CW&C accident data, 2018-2024

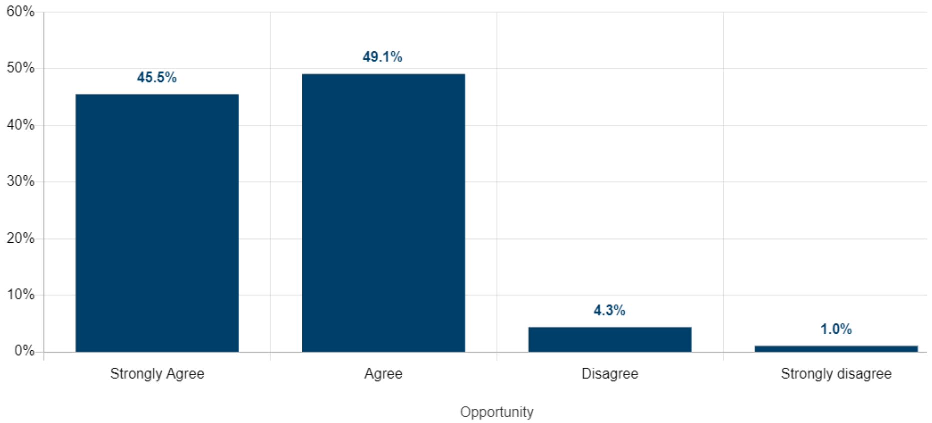
4.2.4 Performance

4.2.4.1 Opportunity data

Sports England hold a range of data on young people's perceptions of and participation in physical activity, which may indicate the propensity to walk and/or cycle amongst the younger population.

Chart 4.5 illustrates the proportion of surveyed children aged 7-11 across the North West who feel they have the opportunity to be physically active. This shows the vast majority of respondents strongly agree or agree they have the opportunity to be physically active indicating there is a good opportunity to encourage walking and cycling levels amongst the younger population.

Chart 4.5: % of 7-11 year olds that feel they have the opportunity to be physically active (2021/2022)



Source: Sports England, Active Lives Children and Young People Survey[51]

[51] https://activelives.sportengland.org/Home/AttitudeData

These figures may also increase with further safe and accessible active travel infrastructure across the borough.

4.2.4.2 Attitudinal data

The National Travel Attitudes Study (NTAS) is an online and telephone survey which gathers responses from individuals aged 16 and over in England, drawn from people who have previously responded to the National Travel Survey (NTS). In August 2020 and February 2021, the NTAS collected response from over 2,000 individuals on attitude towards walking and cycling. The results of this survey are summarised as follows[52]:

- 66% of respondents agreed it is too dangerous to cycle on road
- Nearly two-thirds (64%) of the sample support the creation of dedicated cycle lanes in their local area, even if this means less road space for cars
- 58% of respondents reported feeling confident when riding a bicycle. Men (74%) felt more often confident than women (43%)
- 55% of respondents stated off-road and segregated cycle paths would encourage them to cycle more
- 53% of respondents stated safer roads would encourage them to cycle more
- 74% of respondents indicated well-maintained pavements (even, clean, uncluttered, well-lit) would encourage them to walk more
- 43% of respondents indicated more direct walking routes would encourage them to walk more

4.2.4.3 Propensity data

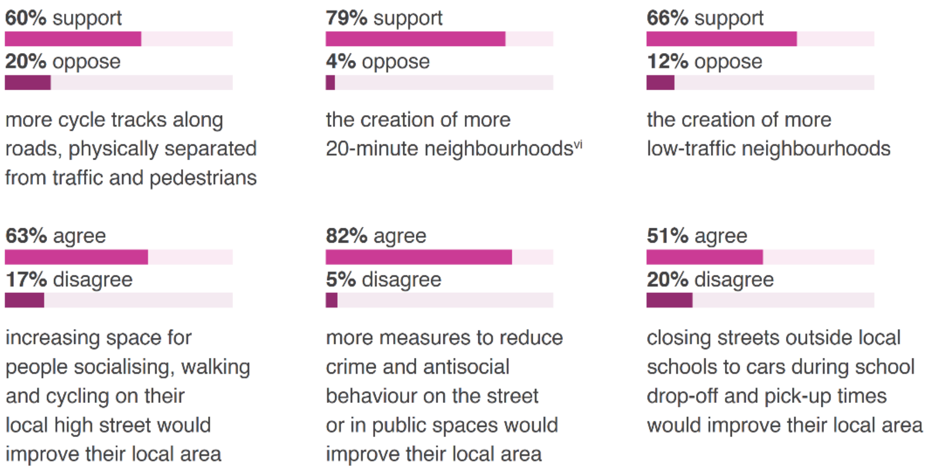
In 2021, Sustrans produced the Walking and Cycling Index, a survey of walking, wheeling, and cycling in 18 urban areas across the UK and Ireland[53].

The survey, which consulted 23,232 residents within these urban areas (none of which were located within CW&C), found that:

- 56% would like to see more government spending on walking
- 53% would like to see more government spending on cycling

Residents across the 18 urban areas were also consulted on measures which would help to support more liveable neighbourhoods, the results of which are summarised in Figure 4.2.

Figure 4.2: Measures to support more liveable neighbourhoods



Source: Sustrans, 2021

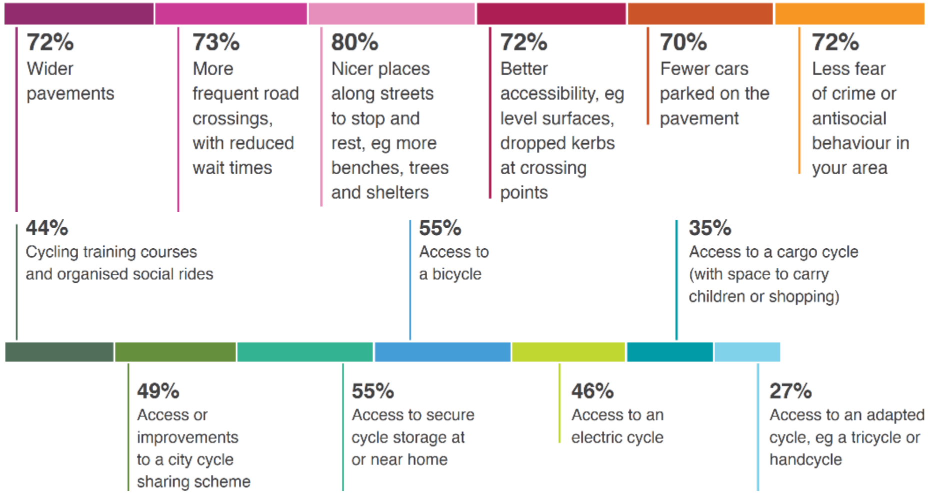
The report also highlights the ways in which streets and neighbourhoods can be made to feel safe, welcoming, and comfortable for everyone to walk in, and

[52] National Travel Attitudes Study (NTAS), Wave 5 2021 and Wave 3 2020

[53] Sustrans, Walking and Cycling Index 2021

the proportion of residents who agree that these measures would help them cycle, walk or wheel more, as shown in Figure 4.3.

Figure 4.3: Percentage of residents that think these changes would help them walk/wheel or cycle more



Source: Sustrans, 2021

In addition, the survey found the following percentage of residents would be helped to cycle more by better facilities:

- 69% by more traffic-free cycle routes away from roads, e.g. through parks or along waterways
- 65% by more cycle tracks along roads that are physically separated from traffic and pedestrians
- 65% by more signposted local cycle routes along quieter streets
- 64% by better links with public transport, e.g. secure cycle parking at train stations

In relation to e-bikes, the National Travel Attitudes Study (NTAS) in February 2021 found that:

- 15% of respondents would be likely to purchase an e-bike in the next 3 years
- The prospect of paying for the e-bike with the help of a grant or incentive that provides a small discount, or an interest free credit arrangement that allows the spread of payments over a number of months or years, both increased the perceived likelihood of purchasing an e-bike over the next 3 years to 22%
- 52% agreed or agreed strongly that e-bikes are too expensive

Active Travel – key findings

- Keeping physically active can reduce risk of cardiovascular disease by as much as 35% and the risk of early death by as much as 30%.
- Compared to the wider North West region average, CW&C performs marginally better in terms of overall numbers of walking trips.
- Walking levels for travel-to-work are at 11% up slightly from 10% in 2011, but this is dwarfed by private car use at 74% in the 2021 data.
- The current active travel mode share is similar to what is seen at the national level, but significant mode shift is required to achieve Net Zero targets.
- CW&C also has above national average levels of adult obesity (68.3% compared to 64.0%) and above average proportions of adult levels of physical activity (72.4% compared to 67.1%), emphasising the need to encourage further use of active modes.
- Clusters of collisions including pedestrians and cyclists are evident within the main urban areas of Chester and Ellesmere Port and along unclassified roads.
- The majority of CW&C is relatively flat, providing good opportunities to increase cycling levels.

- Cycling levels in CW&C are generally higher than for both the North West and England.
- National survey data suggest that cost is a big factor in influencing the purchase of e-bikes, with only 15% of respondents indicating they would be likely to purchase within the next 3 years.
- However the latest 2021 Census travel to work data shows levels of cycling as a main commuting mode in CW&C are still only around 3% and dwarfed in comparison to the private car at 74%.
- LCWIP routes provide an opportunity to enhance the cycling network across the borough, improving connectivity with other modes and promoting cycling as a viable alternative mode, helps to create a cleaner environment and healthier population.

4.3 Bus

4.3.1 Introduction

The bus network in Cheshire West and Chester is structured similarly to most local authorities outside of London, particularly those outside of the major City Regions. The majority of the network (between 70% and 80% by services run, depending on the time of day / week[54]) is operated commercially by private operators, with the Council only contributing via the Concessionary fares scheme (effectively subsidising the operators to carry elderly and disabled passengers for free). However, in the case of routes which are considered socially necessary but not commercially viable, including routes that operate commercially during the daytime but may not be able to do so at evenings and weekends, the Council is able to directly subsidise the operators to provide these services, either via a fully contracted service model, or via de-minimus payments to operators to facilitate extensions to otherwise commercial routes.

Whilst this model ensures that operators remain incentivised to operate commercial services as long as they remain viable, this model of operating is highly vulnerable to changes in circumstances that affect demand. Since the COVID pandemic, for instance, demand has only returned to between 70% and 80% of pre-pandemic demand and many routes have become marginal and, in some cases, un-commercial as a result. This has meant reductions in frequencies and operating hours on some routes and, in some cases, withdrawal altogether. As an example, Arriva closed their depot in Winsford in March 2023 and withdrew all of their services in Winsford and Northwich. Although much of this network has been picked up by other operators, service levels are not at the same level as prior to this decision, and this shows the relative fragility of the operating model as a result, particularly when combined with reduced funding from Central Government to support local authorities' budgets for non-commercial services.

Cheshire West and Chester is in an unusual position in that it is surrounded by authorities that have exercised powers to take buses into more local control. Greater Manchester Combined Authority completed its conversion to a bus franchising model in January 2025 (in which timetables, fares and integration is set by the authority and operators bid for the right to operate the routes), and Liverpool City Region Combined Authority have recently indicated their intention to move to a similar model. In addition, services in Wales fall under the control of the Welsh Government, who are rolling out an integrated public transport network with common branding and ticketing as part of their '1bws' one network vision. This is expected to include a fully franchised network within Wales.

As a result, many bus services that interface with and form part of CW&C's network are operated under a variety of different models, ticketing and fare regimes and this has led to some confusion and complexity when accessing services within the borough. It also provides some difficulty for the authority in following a clear path to protecting and building its own services given the

[54] Cheshire West and Chester Bus Service Improvement Plan Annual Update 1 (Nov 22)

differing choices of the interfacing areas surrounding the borough. CWAC's response to the national Bus Back Better Strategy in 2022 has seen the establishment of an Enhanced Partnership locally which brings some new opportunities for enhancing provision in partnership with operators.

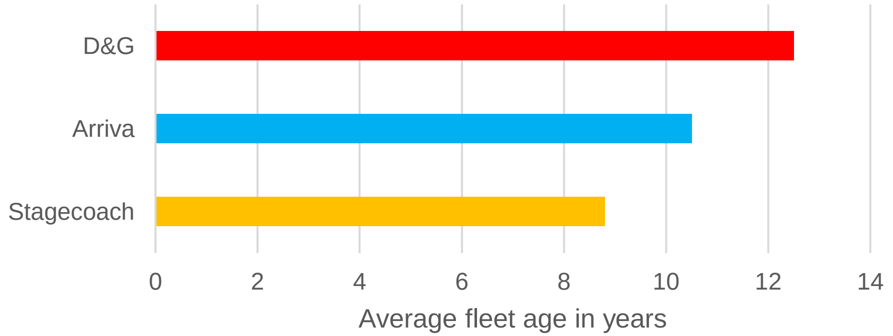
4.3.2 Network

4.3.2.1 Operators and vehicles

Arriva and Stagecoach are the primary bus operators in CW&C. Over a third of all routes are operated by Stagecoach at 36%, followed by Arriva at 27% and D&G at 13%. The remaining routes are provided by smaller operators that provide a mixture of commercial, supported and school services.

The average ages of bus vehicles for the three largest operators operating within CW&C was provided as part of recent Bus Service Improvement Plan (BSIP) reporting. As of 2021, the average fleet ages were as shown in the following chart:

Chart 4.6: Average fleet age in years (as of 2021)



Source: Cheshire West and Chester BSIP (2021)

Stagecoach Merseyside and South Lancashire primarily operate a fleet of 11/15-year-old Enviro 200 vehicles on local services within Chester, a fleet of 10-year-old Enviro 300 vehicles on longer distance services, and a fleet of 7-year-old Enviro 200 MMC vehicles on Park and Ride services. However, since 2021, Stagecoach have invested in their vehicles with QR code readers being installed, and all Euro II and III emissions standard buses have been removed from the fleet. Most of their fleet now therefore meets Euro V and VI standards as a result.[55]

Arriva primarily operate a fleet of 15-year-old Wright Pulsar vehicles on services between Chester and Wales, 11-year-old Wright Pulsar vehicles on services in Chester, and 8/9-year-old Enviro 400 vehicles on services 10/10A/11 along the Welsh coast, while D&G Bus primarily operate a fleet of 9/10-year-old Enviro 200 vehicles in CW&C.

Evidence from the operators suggests that vehicle fleet age in CW&C is older than the average across the UK, particularly in the case of smaller operators where fleet investment is more difficult to fund. This does not necessarily result in poorer vehicle quality, but older vehicles will have lower overall engine efficiency and emission standards.[56] The current ages of vehicles used on services within the borough suggests significant investment in new vehicles will be required within the next 5-8 years, with a focus on replacing diesel vehicles with alternative-fuel zero-emission vehicles.

4.3.2.2 Routes and services

CW&C is served by a network of around 50 bus routes, with many travelling into nearby authorities, including within North Wales. The bus network is concentrated on Chester and Ellesmere Port in the west of the borough, with fewer routes servicing the east towards Northwich and Winsford.

Map 4.8 below shows the current bus network routes in CW&C by operator. This shows that Stagecoach and Arriva buses primarily focus on Chester and

[55] CW&C BSIP Year 1 update 2022

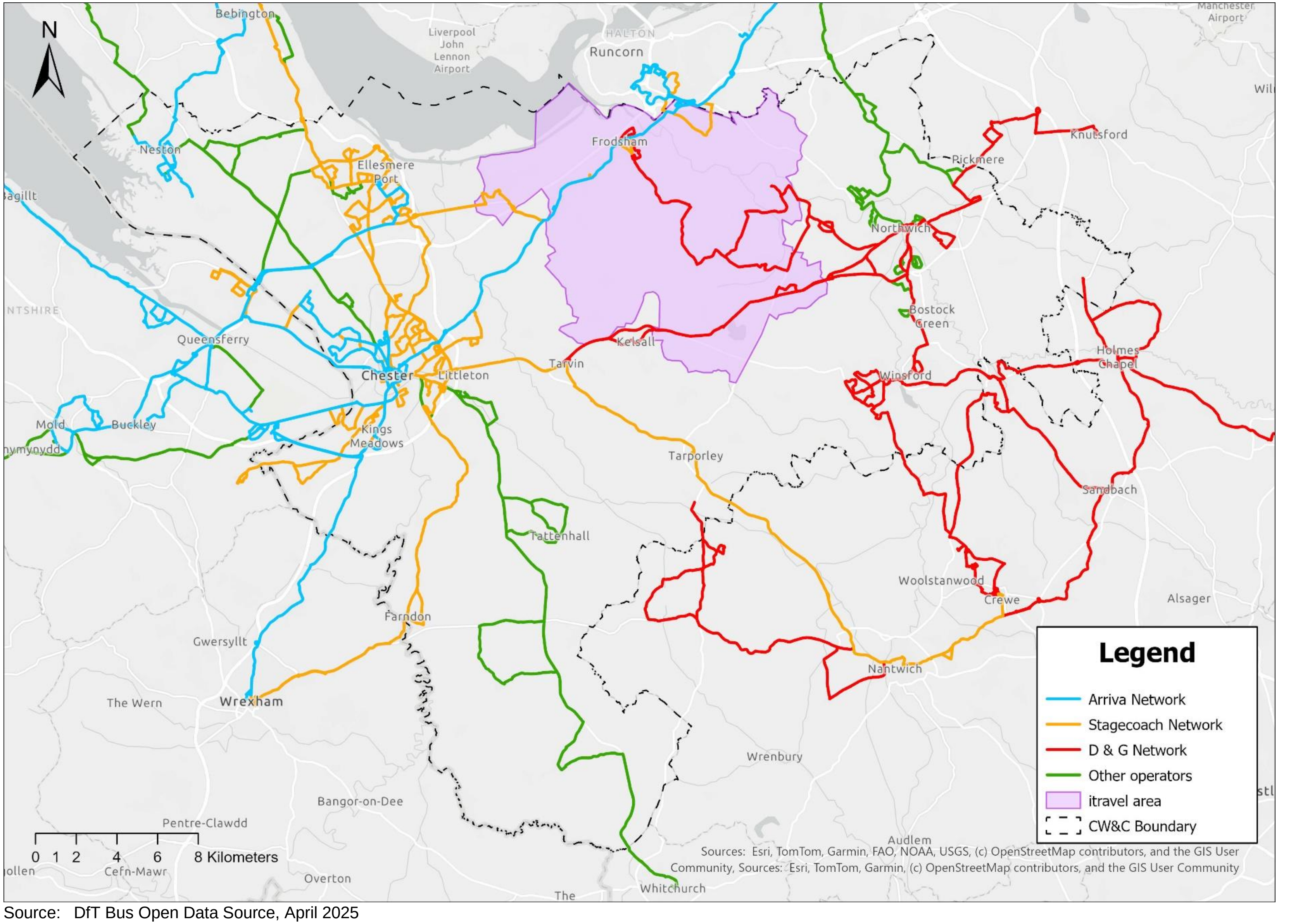
[56] CW&C BSIP Year 1 update 2022

provide cross-boundary services to North Wales, Wirral, Halton, Warrington and Cheshire East. D&G Bus mainly serve the eastern side of the borough, and also provide a number of cross-boundary services into Cheshire East.

Since July 2023, supported by funding from the Department for Transport's Rural Mobility Fund, Chsehire West and Chester has been operating a demand responsive transport service, known as itravel, in the north-east of the borough. The three year trial service serves Frodsham, Helsby, Cuddington, Acton Bridge and Delamere, as shown in Map 4.8 below. It is a pre-bookable public transport service, which has no fixed route or timetable, and is run by Stagecoach. It operates 7am until 7pm Monday to Friday, and residents can request a bus for a specific journey within the operating area. Its purpose is to provide a service to a largely rural area where commercial public transport services are limited to the A56 corridor.

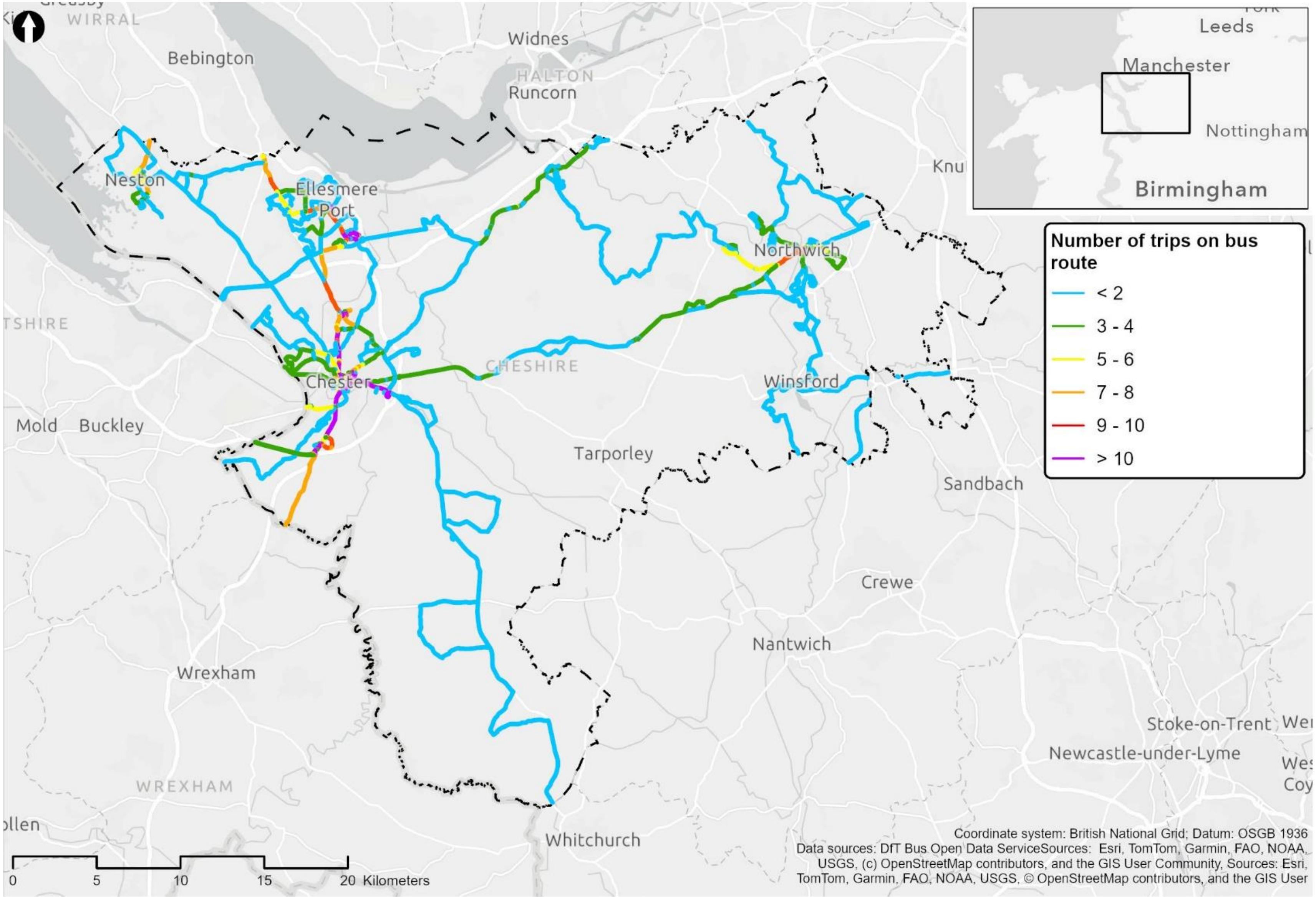
Map 4.9 and Map 4.10Map 4.10: below show the frequency of bus services that run in the weekday AM peak hour along routes and at stops respectively. These show that bus frequency is highest in Chester followed by Ellesmere Port, but mostly hourly everywhere else. They also show sparse rural coverage, and limited weekday morning connection between east and west sides of the borough, and between Northwich and areas to the north. Furthermore, consultation with various groups including local businesses has indicated that a common complaint with existing bus services is that they do not start early enough or finish late enough to be useful for all employment, education or leisure purposes. As demonstrated in Section 2.2.2, there is also a higher proportion of elderly residents within these rural communities for which a frequent and comprehensive bus network connecting with key services and facilities becomes increasingly important.

Map 4.8: CW&C bus network by operator



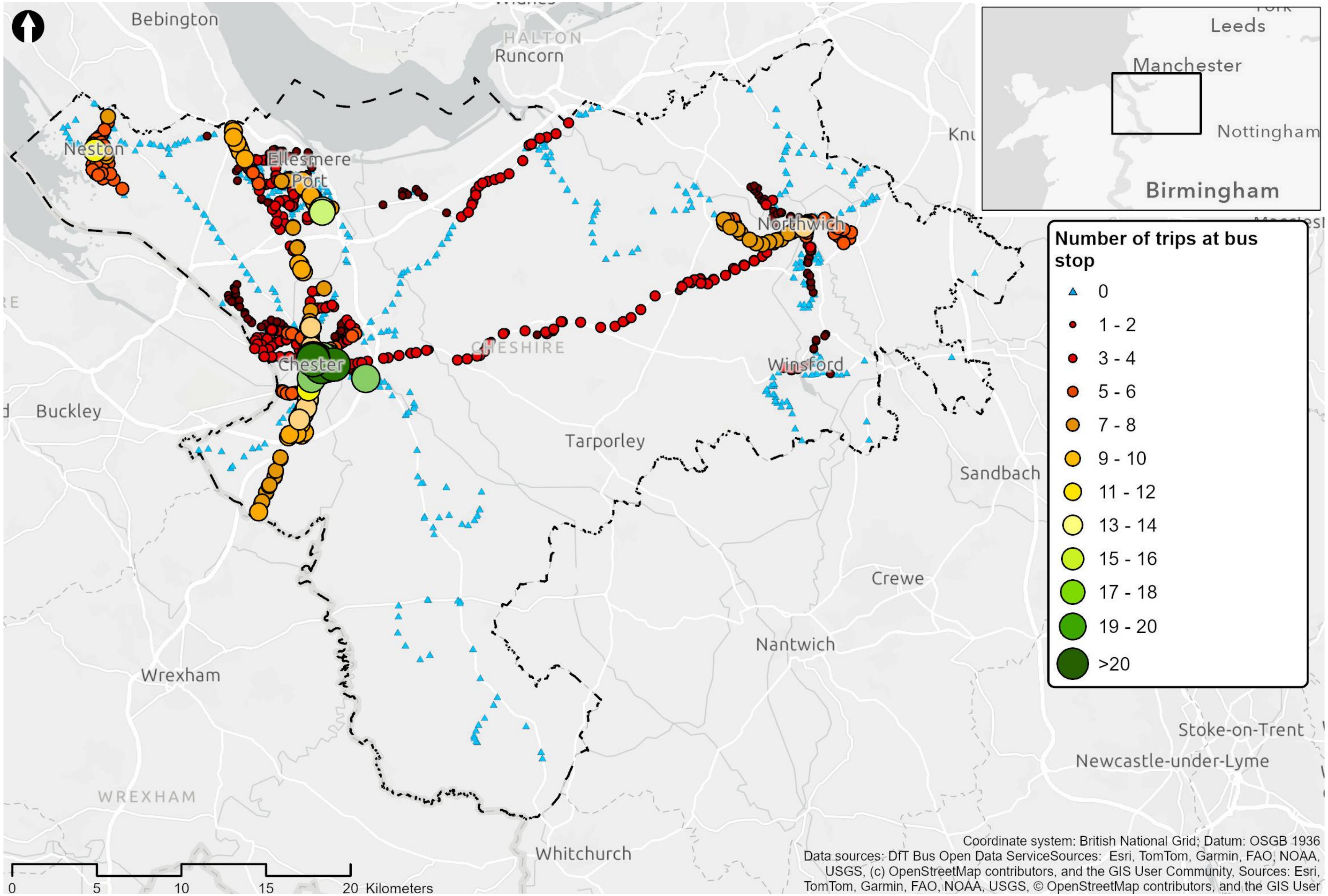
Source: DfT Bus Open Data Source, April 2025

Map 4.9: Weekday AM peak hour bus frequency by route



Source: DfT Bus Open Data Source, April 2025

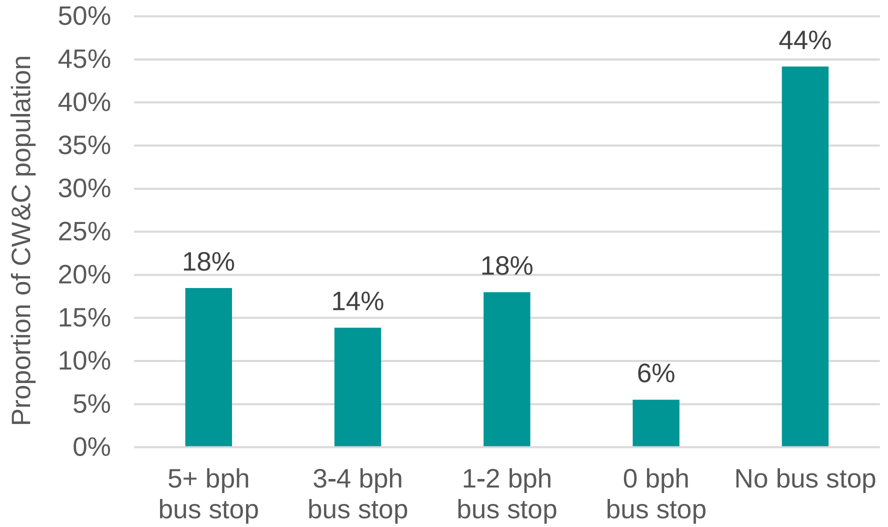
Map 4.10: Weekday AM peak hour bus frequency by stop



Source: DfT Bus Open Data Source, April 2025

Based on the bus stop location and frequencies shown in Map 4.10: above, Chart 4.7 below shows the proportion of the CW&C population that lives within a 400m radius of each type of bus stop. 400m equates to a 5-minute walk and is considered to be the maximum desirable walking distance to nearest bus stops.[57] It includes bus stops served by scheduled buses, but not those served only by the itravel service.

Chart 4.7: Number of residents within 400m of a bus stop, by weekday AM peak-hour stop frequency



Source: Mid-year population 2022, DfT Bus Open Data Source

This shows that half (50%) of the population live within 400m of a bus stop with at least 1 bus per hour in the AM peak hour, with nearly a third (32%) having access to at least 3 services per hour, and just under a fifth (18%) to 5 or more services per hour. However, the chart also shows that half of the population (50%) either have no access to a bus stop within 400m or only have access to a bus stop not served by buses in the AM peak hour. These latter population areas are mostly found in the rural parts of the borough and highlight the challenge in serving these communities by public transport.

4.3.2.3 Interchanges, bus stops and bus priority

CW&C have two large purpose-built bus interchanges: one in Chester and one in Ellesmere Port. The Chester Bus Interchange opened in 2017, costing £13.5m and accommodates up to 156 buses per hour at its 13 stands. Approximately 800 buses use the facility each day, with its effective horseshoe-shaped design shown in Photo 4.1 creating an improved interface and integration for transport users.

Photo 4.1: Chester bus interchange

Source: Mott MacDonald

[57] Planning for Walking, section 6.4

There are high quality facilities at the interchange, including real-time information, retail facilities, accessible toilets and baby changing facilities. The interchange is also recognised for its high accessibility for people with mobility, visual and cognitive impairments. The Council is responsible for the day-to-day operation of the interchange.[58]

The Ellesmere Port Interchange, located along Civic Way, was constructed as the first part of the £16m masterplan investment in the town. The interchange includes high quality shelters with bus-only access from Whitby Road preventing conflict with other vehicles.

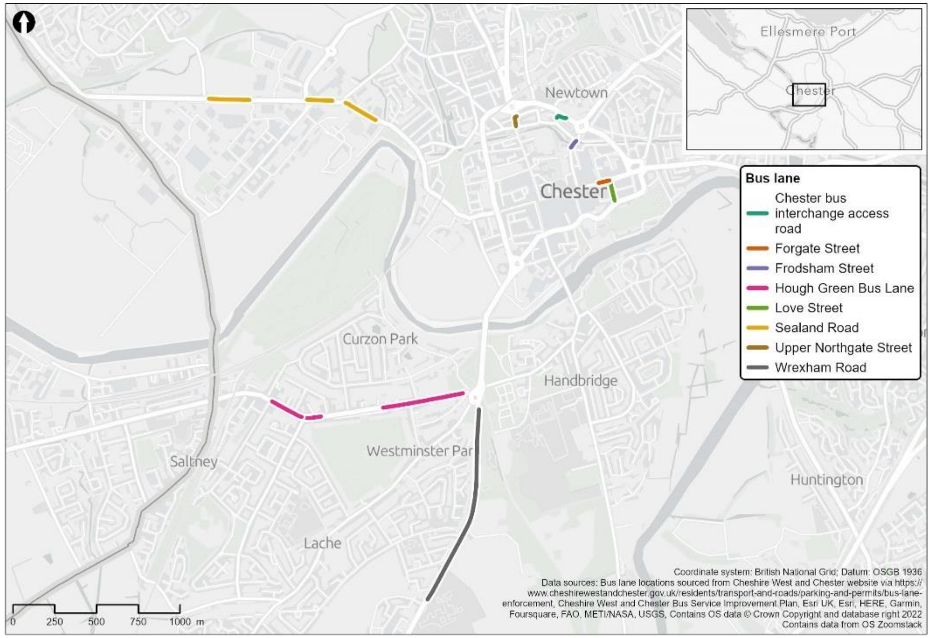
Additionally, Northwich has a bus hub along Watling Street in the town centre, including seven bus stops, and Winsford also has a central set of bus hubs on Dene Street, but neither of these could accurately be described as bus stations.

In total, CW&C have 2,663 bus stops across the borough, with 847 (32%) being unmarked on the highway, 563 (21%) with a shelter, and 1,357 (51%) with timetable information displayed.[59]

There have been various upgrades made to some bus stops since October 2021, with up to £32,000 being spent on improvements. These include reglazing, rebranding, new lighting and new Real Time Information (RTI) screens in various stops, such as the Park & Ride stops and Sutton Way Hotel bus stop.

There are currently around 2km of bus lanes in the CW&C area, all of which are within Chester. The bus lanes are in operation 24 hours a day, including bank holidays and there is clear signage and road markings stating where they start and finish. The Chester bus lane locations are shown in Map 4.11: Map 4.11.

Map 4.11: Chester bus lane network



Source: Mott MacDonald

Frodsham Street is an area of bus only-access restriction near Hoole Way roundabout. General traffic is allowed on Frodsham Street, but the road design is designed to prioritise pedestrian and cycle movements, creating a shared space where traffic is the 'guest'.

The bus lanes serve both regular bus services and the Park & Ride networks, along with taxis, private hire vehicles and motorcycles, creating faster journey times and uncongested road spaces for these vehicles. There were two

[58] CW&C BSIP Year 1 update 2022

[59] CW&C BSIP – information correct as of October 2021

additional bus-lanes on Boughton Road and Liverpool Road that were shared with active travel lanes, both of which were suspended during the pandemic.[60]

Automatic Number Plate Recognition (ANPR) bus lane enforcement is in operation in all locations except Love Street and Frodsham Street. There are enforcement signs at the entrances of the lanes, and any unauthorised entry can result in a fine of £70, reduced to £35 if paid within 21 days.

4.3.2.4 Ticketing and fares

There is little coordination on ticketing between bus operators in CW&C, with most operators only accepting their own tickets. The exception to this is the Blacon Pointer Voluntary Quality Bus Partnership (VQBP) between Arriva and Stagecoach. This VQBP is a best practice example within the borough, where both operators accept each other's day and weekly tickets, agreeing to co-ordinate timetables.

Arriva, Stagecoach, D&G Buses, and Warrington's Own Buses all offer daily, weekly, and monthly tickets, as well as singles and returns. Apart from the Blacon Pointer tickets, these are only usable on the respective operator's own services with no interchangeability or inter-availability. Stagecoach and Arriva offer termly and annual student passes, while Stagecoach have recently introduced a new range of multi-day carnet tickets to suit more flexible working patterns.[61]

Stagecoach offers a £18 adult ticket called the Megarider, including unlimited weekly travel in Chester to the City Centre, Saltney and Saughall. Arriva also offer a weekly ticket in Chester for £17.00 covering places such as Handbridge, Broughton and Queensferry. Arriva offer a family day ticket for £9.60, and Warrington's Own offers a family day ticket for £13.50.

Table 4.3 provides a comparison of adult day-ticket fares and weekly tickets, noting that these operators do offer a range of other ticket types, including monthly and annual student and children tickets.

Table 4.3: Summary bus fares by service operators

Operator	Blacon Pointer Day Ticket	Adult Day+	Weekly ticket	Network return
Stagecoach	£3.20	£5.20	£18.00	-
Arriva	£3.00	£5.10	£17.00	-
Warrington's Own	-	£5.90	£23.00*	-
D&G	-	-	£24.00*	£6.90*

Source: Operator websites + Most appropriate local zone selected * for the full network

Following the Government's scheme to cap fares for single bus journeys, most services in CW&C currently offer £3 for a single bus ticket for the majority of journeys. This cap will last until 31 December 2025 and applies to all bus routes, except for Aintree Coachlines services 40, 41, and 272, and M&H services on their T8 route.

Apart from the Blacon Pointer service, the only other multi-operator ticketing product available within CW&C is the National Rail Plusbus add-on. With an adult day ticket costing £2.50 and a 7-day ticket costing £10.00, this service allows unlimited travel through a specific area. The operators included are Arriva and Stagecoach, except for the Park & Ride services. Plusbus is available for both Chester and Ellesmere Port, though the areas of validity in both cases are quite tightly contained within the extents of the settlements themselves.

[60] Active Travel Lanes Paused – Chester Cycling Campaign (chestercyclecity.org)

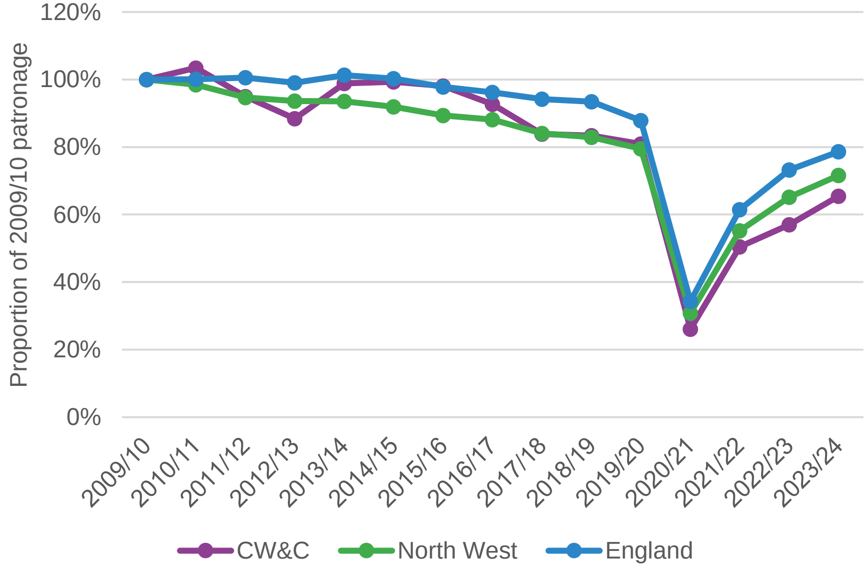
[61] CW&C BSIP Year 1 update 2022

4.3.3 Usage

4.3.3.1 Patronage levels

Chart 4.8 presents DfT data showing annual bus patronage for CW&C, the North West and England from 2010 to 2024 as a proportion of 2010 levels.

Chart 4.8: Annual bus patronage between 2009/10 and 2023/24

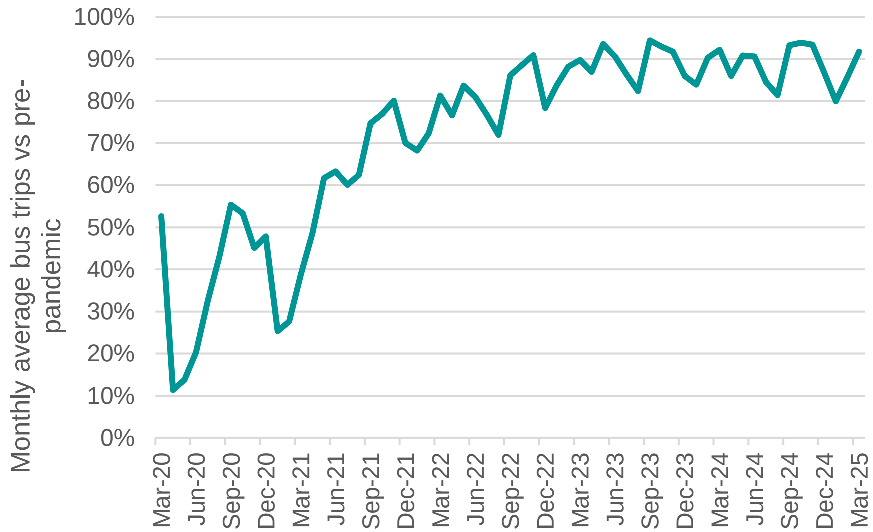


Source: DfT Bus Table 0109

This shows a general decline in patronage from 2010 to 2024 across all geographies, with North West and CW&C demand declining faster than the national average. The pandemic impacted CW&C demand more than the regional and national average, with demand dropping 68% for the former compared to 61% for the latter. Initial post-pandemic recovery was also slower for CW&C and bus patronage recovery remains below the North West and England.

However, more recent national data suggests that bus patronage has now recovered to about 90% of pre-pandemic levels. This is shown in Chart 4.9 below. A similar trend can be expected to apply generally to CW&C, although evidence supplied from bus operators has suggested that this recovery has been more gradual than other areas.

Chart 4.9: National bus demand compared to pre-pandemic levels

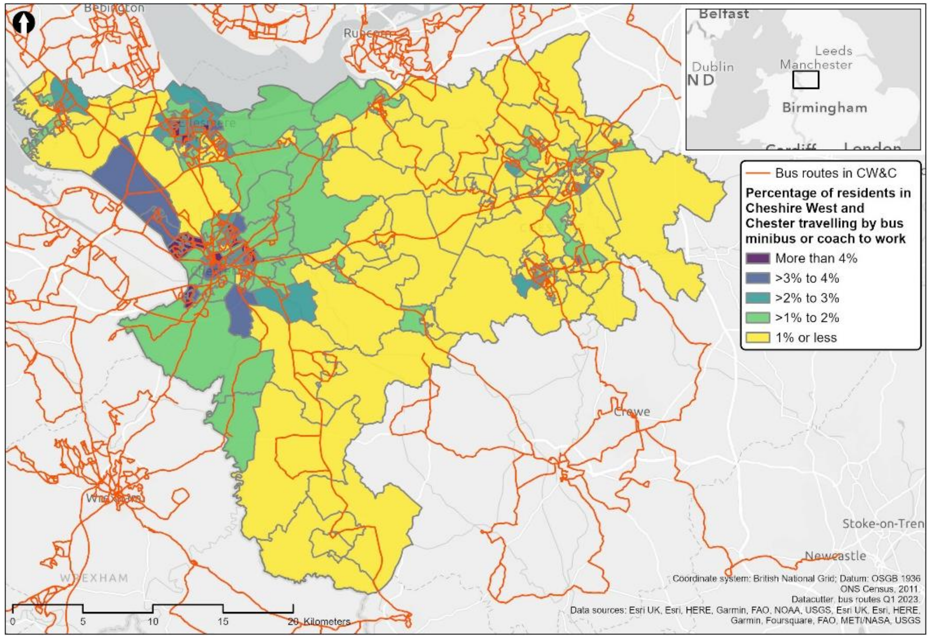


Source: DfT, https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic

4.3.3.2 Spatial distribution

Map 4.12 shows, from the 2011 Census, how commuter bus mode shares vary across CW&C, together with a depiction of the current bus network.

Map 4.12: Distribution of commuter bus mode shares in CW&C



Source: Census, 2011

This shows how most bus usage is focussed around Chester and, to a lesser extent, Ellesmere Port and Neston. The eastern urban areas also show some bus commuting activity, but rural area bus use is negligible.

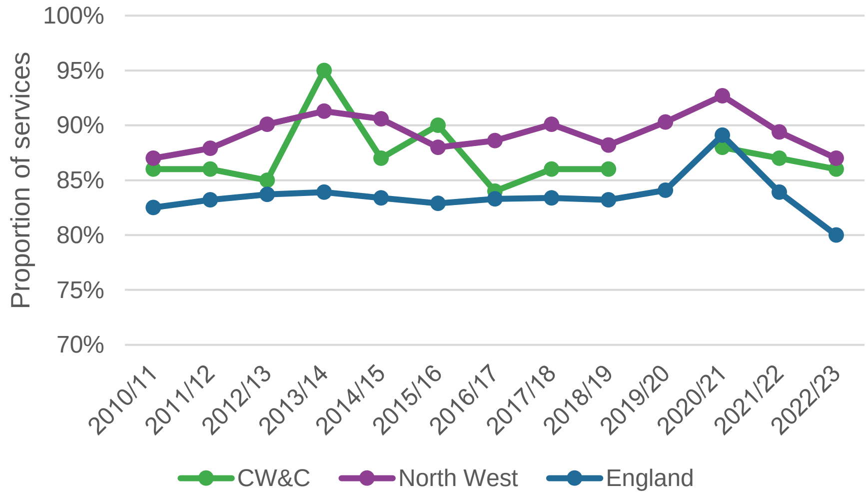
4.3.4 Performance

4.3.4.1 Service punctuality

Chart 4.10 shows the annual proportion of non-frequent bus services running on-time in CW&C, the North West and England between 2009/10 and 2022/23, where:

- 'Non-frequent' means 5 or fewer services per hour, which includes all CW&C bus services apart from the 1/1A between Chester and Blacon (12 per hour), and
- 'On-time' means between 60 seconds early and 6 minutes late

Chart 4.10: Annual bus punctuality between 2009/10 and 2022/23



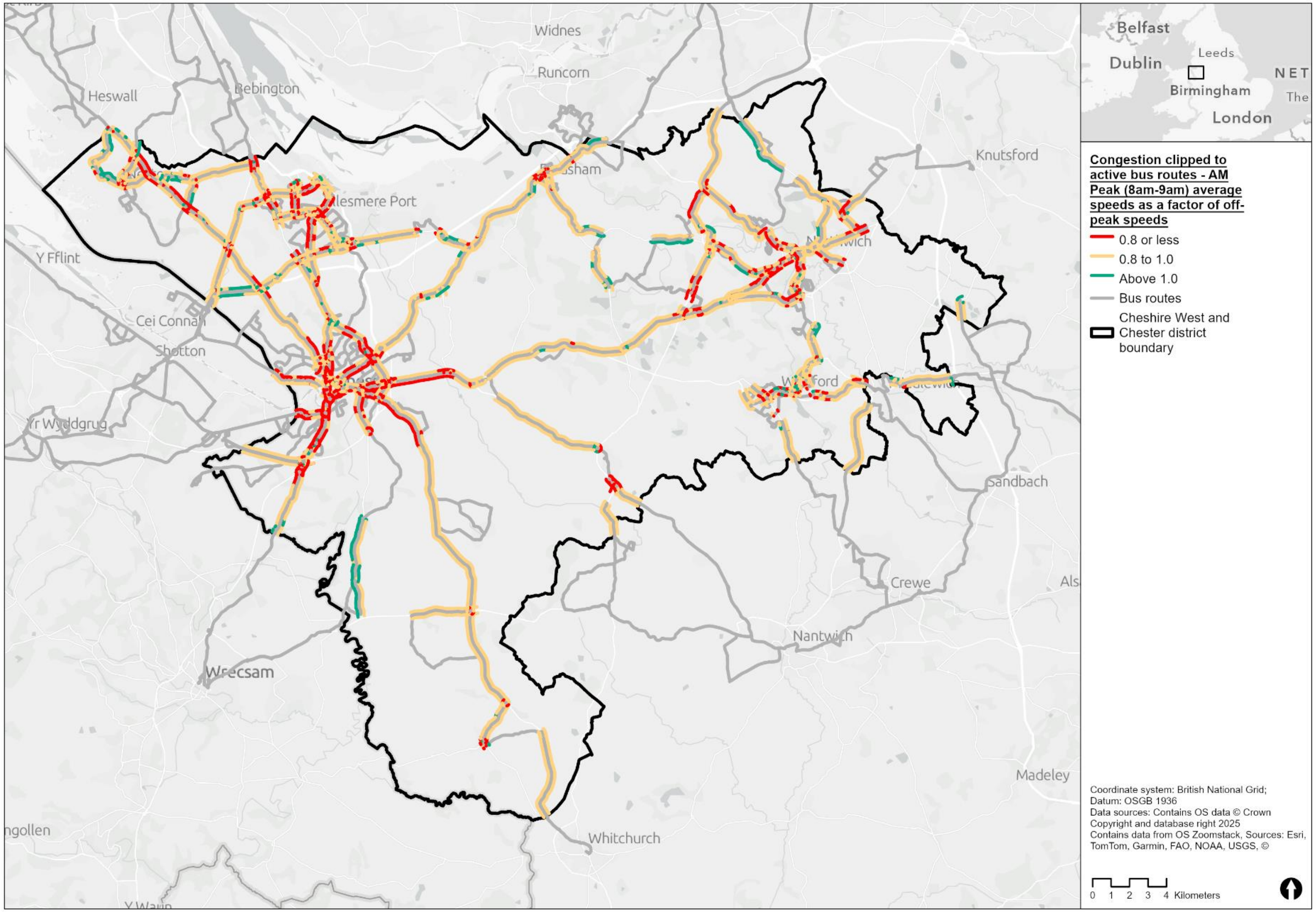
Source: Bus0902 Non-frequent bus services running on-time, DfT

This shows that bus punctuality in CW&C is generally a little better than the national average, but mostly a little worse than the regional average. In 2022/23, about 86% of CW&C services run on-time.

4.3.4.2 Network delays

Map 4.13 shows typical weekday AM peak hour journey time delays on the CW&C bus network. This shows levels of delay across most of the bus network, with particular concentrations within urban areas. Bus priority measures in these areas are limited.

Map 4.13: Weekday AM peak delays on CW&C bus network



Source: INRIX, Jan-Dec 2024 data, excluding weekends and holidays

4.3.4.3 Security and safety

Arriva and Stagecoach all have on-board CCTV, with drivers receiving training on counterterrorism and supporting passengers with their needs. Previously, the Council's Safety Travel Team would go into schools and educate children on safety and behaviour when travelling by bus, but due to lack of funding this has now stopped.

4.3.4.4 Satisfaction

In August 2021, CW&C ran an online public engagement survey on local bus and non-bus users' views on the network.[62] 1,664 people completed the survey, being asked questions from usage levels to accessibility. In CW&C, the option of taking the bus has become less desirable with levels of usage declining over the years, and 6 out of 10 respondents found it difficult or very difficult to get to their desired location by bus. Some of the main factors that discouraged people from using buses for their journey included that it was quicker to drive (51%), the buses do not operate at required times (45%), and the stops and routes are inconvenient (43%).

There is clearly a significant task involved in encouraging the return of all pre-pandemic bus users. Some of the main factors that would encourage more bus usage by locals included better frequency, evening buses, better information at bus stops, and better choice of destinations.

In addition, the NTAS collects data across various waves on public perceptions towards travel and transport across the UK. A summary of key responses relating to bus travel is summarised below[63]:

- 58% of respondents stated a standardised fare between £1 to £2 would encourage them to use buses in the future.
- 18% of respondents were dissatisfied with the availability of real time information at bus stops, whilst 33% stated their bus stop did not have this.
- 68% of respondents stated they would use an app to look at bus routes, fares, or live bus times.

Satisfaction around bus services for specific user groups also varies quite considerably. In a recent survey undertaken by Age Friendly West Cheshire, 35% of respondents considered bus services to be poor or very poor in meeting their needs.

Bus – key findings

- The provision of bus services in CW&C is varied across the borough, with rural areas and smaller towns served by few or no services, creating low levels of connectivity, negatively affecting employment, education, and leisure opportunities.
- The current commercially-based operating model has led to a fragile and vulnerable network in Cheshire West and Chester. The borough is also surrounded by several neighbouring areas who have or are intending to pursue a bus franchising model during the LTP4 period.
- The BSIP provides a transformational vision for the bus network in CW&C but without adequate funding to deliver this, bus will continue to struggle to become an attractive alternative to the private car.
- Bus usage in CW&C has been decreasing over the years (35% between 2009/10 and 2023/24), more severely than in England as a whole (21% between 2009/10 and 2023/24).
- However, more recent national data suggests that bus patronage has now recovered to about 90% of pre-pandemic levels.
- On average, about 86% of CW&C bus services run on-time, slightly lower than the regional average.
- 51% of bus users within CW&C stated one of the main factors in discouraging bus use was the longer journey times compared to private car.

[62] CW&C BSIP baseline evidence report 2021

[63] National Travel Attitudes Study: Wave 3 - GOV.UK (www.gov.uk)

4.4 Park & Ride

CW&C Council operate a bus-based Park & Ride system in the city of Chester. There are three Park & Ride sites currently in operation as part of this contract, while another site at Sealand Road has been closed and mothballed since the Covid-19 pandemic (during which time it operated as a testing site). The future use of this site is under review.

The three Park & Ride sites in use are shown in Map 4.14 and include:

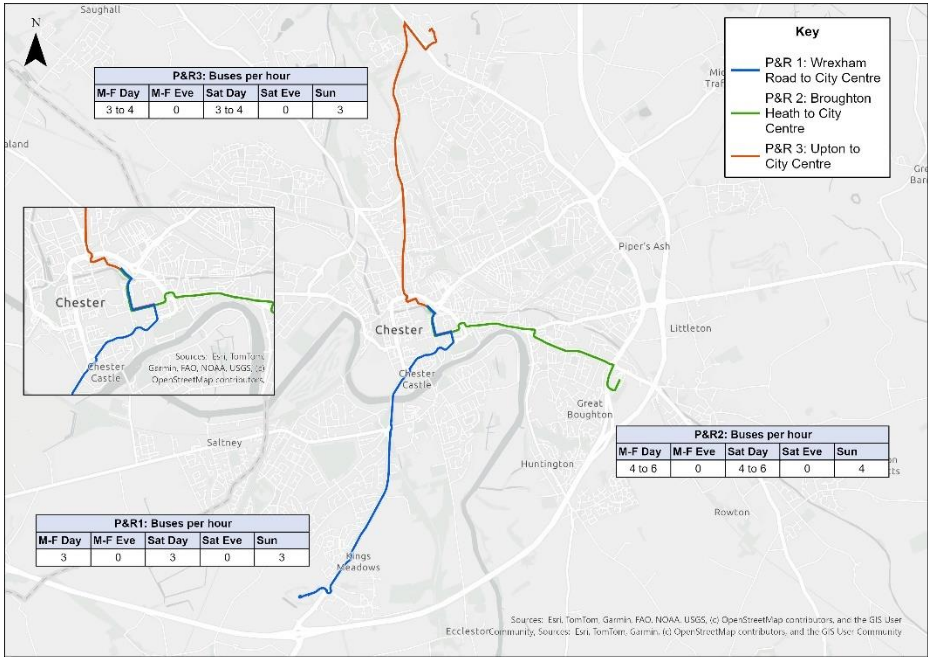
- Wrexham Road Park and Ride: served by the PR1 route towards the Racecourse, law courts, Chester Business Park and the River Dee. The total number of parking spaces is 1,200 with 26 disabled parking spaces.
- Boughton Heath Park and Ride: served by the PR2 route towards the Central Business Quarter, Boughton Road shops and Boughton Heath Retail area. The total number of parking spaces is 750 with 11 disabled parking spaces.
- Upton (zoo) Park and Ride: served by the PR3 route towards the Countess Hospital, the University, Bache and Upton shops and Chester Zoo. There are 460 parking spaces and 10 disabled parking spaces.

All the three Park & Ride services have regular dedicated buses running between every 10 and 20 minutes on Monday to Fridays between 7am to 7pm and 8am to 7pm on Saturdays. On Sundays and Bank Holidays, services operate between 9.30am to 5.30pm every 15 minutes.

CW&C are also exploring options for potential new Park & Ride sites with wider travel hub facilities; for example, on Hoole Road adjacent to the M53.

Previously, the Park & Ride operated as two cross-city routes, but this has now been amended to the three routes which all terminate in the city centre, partly due to the closure of Sealand Road.

Map 4.14: Park and Ride routes and frequency

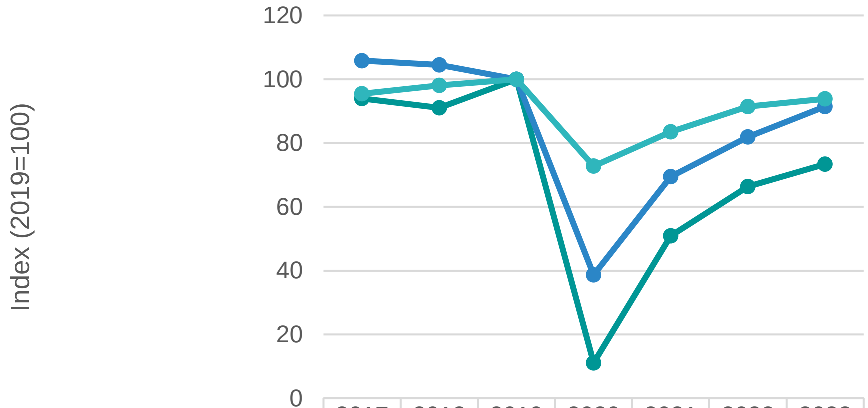


Source: CW&C 2025

A day ticket for Park & Ride costs £2.50 for unlimited journeys across the three bus services, with children under 18 traveling for £1. Ticket bundles and concessionary bus passes cannot be used on Park & Ride services. Tickets can be purchased from the driver or on the Stagecoach app. Offers include a multi 6 ticket – 6 tickets for the price of 5, and a £1.50 ticket on the PR3 route to / from the Countess of Chester Hospital.

The vehicles used in the service are of a high quality, with Wi-Fi, USB charging, mock leather seats and Euro VI engines. The service is well used in the summer and Christmas periods, indicating its popularity and convenience for tourists visiting the city. However, the operation has been subsidised for a number of years and this has been exacerbated since the Covid-19 pandemic, further threatening the viability of the service for the future. Indexed demand levels for the service from 2017 to 2023 are shown in Chart 4.11 and compared against equivalent demand data for North West bus trips and CW&C car mileage over the same period.

Chart 4.11: Indexed demand levels 2017 – 2023



	2017	2018	2019	2020	2021	2022	2023
P&R trips	94	91	100	11	51	66	73
Bus trips (North West)	106	104	100	39	69	82	91
Car mileage (CW&C)	95	98	100	73	84	91	94

Source: CW&C

This shows how Park & Ride demand was more impacted by the pandemic than was general bus and car mileage, while demand recovery by 2023 was also lagging behind other modes, though it is noted that this is partly due to the closure of the Sealand Road site during and since the pandemic.

Park & Ride – key findings

- There are three Park & Ride sites currently in operation in and around Chester provided by Stagecoach.
- The service provides an opportunity to intercept private car trips at an earlier point in their journey to reduce unnecessary car trips and to improve air quality and congestion levels within the city centre.
- The service is operated by high quality vehicles and offers relatively cheap travel.
- However, demand levels were heavily impacted by the pandemic and are yet to return to pre-pandemic levels. This has been exacerbated by the pandemic closure of the Sealand Road site, the future of which is under review.

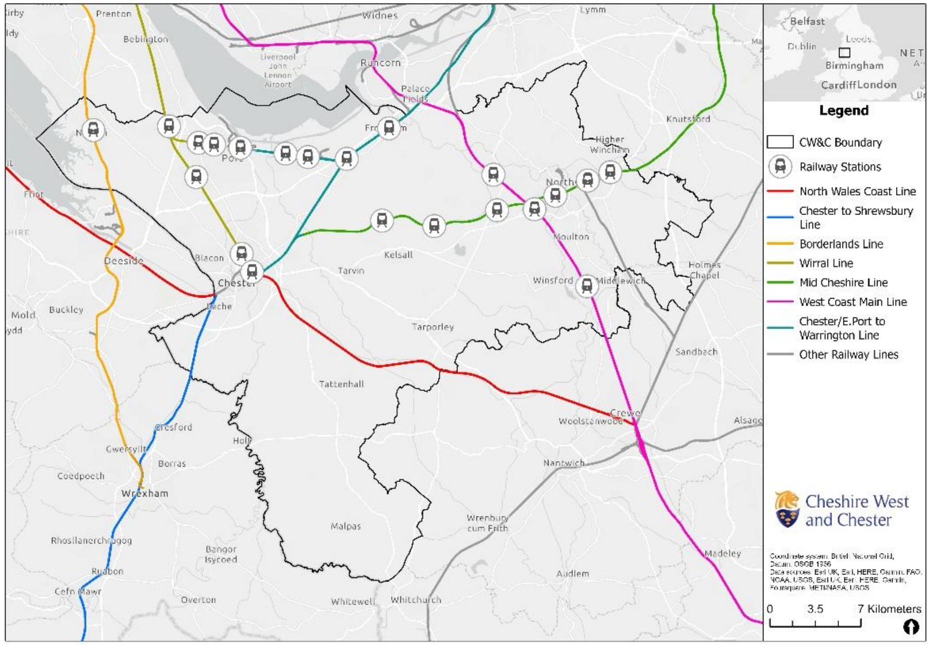
4.5 Rail

4.5.1 Network

4.5.1.1 Routes and services

CW&C is served by several rail lines, including the West Coast Mainline, Mid-Cheshire Line, Chester-Warrington line, Chester-Shrewsbury line, North Wales Coastline, Borderlands line and the Chester and Ellesmere Port branches of the Merseyrail network. These railway lines serve a total of 21 railway stations across the borough which are shown in Map 4.15.

Map 4.15: CW&C stations and rail lines



Source: Mott MacDonald

The primary railway station and key interchange within the borough is Chester railway station. On average, there are up to 14 trains per hour operating from Chester across four operators – Avanti West Coast, Transport for Wales (who also operate the station), Northern Rail and Merseyrail. The list of regular services from Chester railway station are listed below in Table 4.4.

Table 4.4: Rail services from Chester

Operator	Destination	Core frequency
Avanti West Coast	London Euston / Birmingham New Street via Crewe	Hourly
Avanti West Coast	Holyhead via North Wales Coast Line	6 tpd in each direction (1tpd to Wrexham General)
Transport for Wales	Crewe	Hourly
Transport for Wales	Manchester Airport via Warrington	Hourly
Transport for Wales	Cardiff Central / Birmingham International via Wrexham and Shrewsbury	Hourly
Transport for Wales	Liverpool Lime Street via Runcorn	Hourly
Transport for Wales	Holyhead via North Wales Coast Line	Hourly
Transport for Wales	Llandudno via North Wales Coast Line	Hourly
Northern	Leeds via Warrington and Manchester Victoria	Hourly
Northern	Manchester Piccadilly via Northwich/Mid Cheshire Line	Hourly
Merseyrail	Liverpool via Birkenhead	4 tph

Source: Realtimetrains.co.uk

Additional services operating within the rest of the borough include:

- West Midlands Trains – Liverpool to Birmingham via Winsford every hour
- Transport for Wales – Wrexham to Bidston via Neston every hour

- Merseyrail – Ellesmere Port to Liverpool via Birkenhead twice per hour (with additional trains at peak times)
- Northern – Ellesmere Port to Helsby (with some services extending to Liverpool via Warrington Bank Quay) twice per day

4.5.1.2 Vehicle fleet

Although the majority of the fleet of trains serving CW&C are now several years (and in some cases decades) old, all operators serving the borough have either recently completed or are currently implementing a programme of rolling stock replacement. This will see improved passenger experience with increased capacity, improved comfort, and greater reliability. The new rolling stock, in particular the Merseyrail Class 777's (Photo 4.2) which have the capacity for battery operation, could enable service enhancements including increased frequencies and new direct connections (Section 4.5.4).

Photo 4.2: Merseyrail Class 777

Source: Merseytravel

Photo 4.3: Northern Class 150

Source: Northern

Following the introduction of new rolling stock, the only remaining units left to be replaced will be those on the Mid-Cheshire Line and Ellesmere Port to Helsby service, which will continue to use trains constructed during 1984-87 (Photo 4.3). While a recent refurbishment programme has improved the quality of this rolling stock, the trains are 40 years old and there are no firm plans for these to be replaced in the near future.

4.5.1.3 Ticketing and fares

For key rail flows, a variety of ticketing options are available. Table 4.5 shows anytime day single and anytime day/off peak return fares available across several rail journeys originating in Cheshire West and Chester. For the majority of these journeys, cheaper advance tickets may be available to purchase online prior to the journey being undertaken. For Merseyrail passengers between Chester/Ellesmere Port and Liverpool, a day-saver ticket is £5.95 covering unlimited journeys off peak.

Table 4.5: Fares for key rail flows across CW&C

Origin	Destination	Anytime Single	Off-peak Single	Anytime Return	Off-peak Return
Chester	London Terminals	£162.50	£79.80	£325.00	£114.00
Chester	Crewe	£15.90	N/A	£16.60	N/A
Chester	Holyhead	£32.20	£26.40	N/A	£44.90
Chester	Cardiff Stations	£87.20	N/A	N/A	£102.30
Chester	Birmingham Stations	£41.60	£42.90	£76.90	£47.10
Chester	Manchester Stations	£22.40	N/A	£24.20	N/A
Ellesmere Port	Liverpool Stations	£7.45	£5.95	£7.65	£5.95
Winsford	Crewe	£5.00	N/A	£9.40	£6.20
Neston	Wrexham Central	£5.30	N/A	£6.60	N/A
Neston	Liverpool Stations	£8.20	N/A	£9.00	£8.70

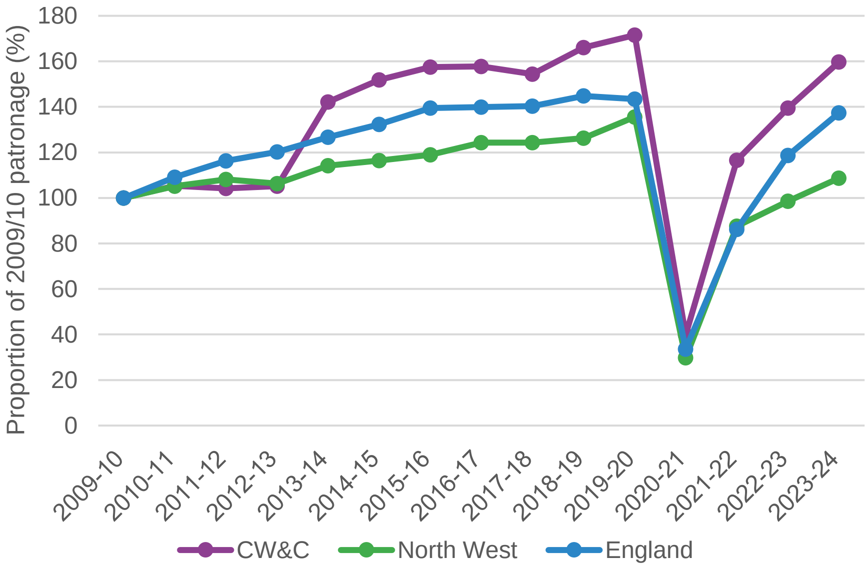
Source: Brfares.com

4.5.2 Usage

4.5.2.1 Patronage levels

Chart 4.12 presents ORR data showing annual rail patronage for CW&C, the North West and England from 2009/10 to 2023/24 as a proportion of the 2009/10 levels.

Chart 4.12: : Annual rail patronage between 2009/10 and 2023/24

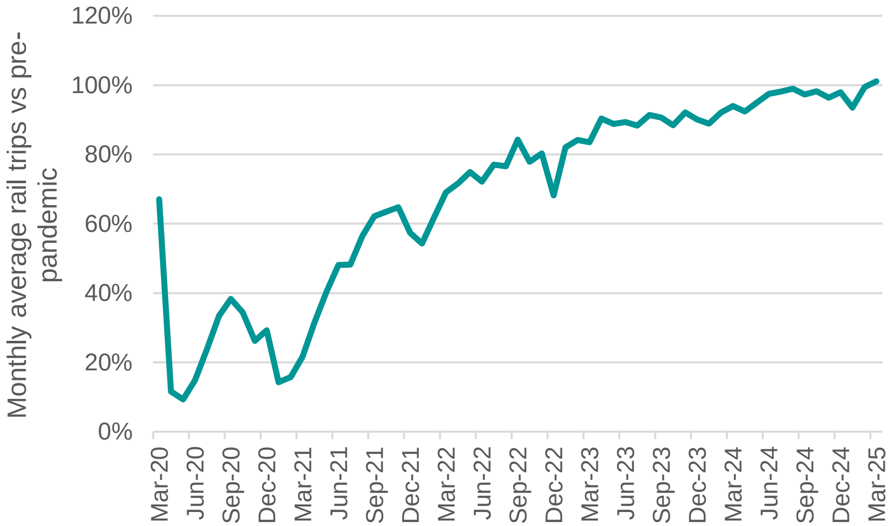


Source: ORR Table 1415

This shows a general increase in patronage between 2009/10 and 2019/20 across all geographies, with CW&C seeing significant growth between 2012/13 and 2013/14 above that of the North West and the rest of England. During COVID-19, passenger numbers remained 10% higher than the North West and England compared to 2009/10 levels, with recovery in 2023/24 exceeding that of regional and national rail travel, and only falling slightly short of pre-pandemic levels.

Other recent national data suggests that rail patronage has now recovered to about 95% of pre-pandemic levels. This is shown in below Chart 4.13, and aligns with the data in Chart 4.12.

Chart 4.13: National rail demand compared to pre-pandemic levels

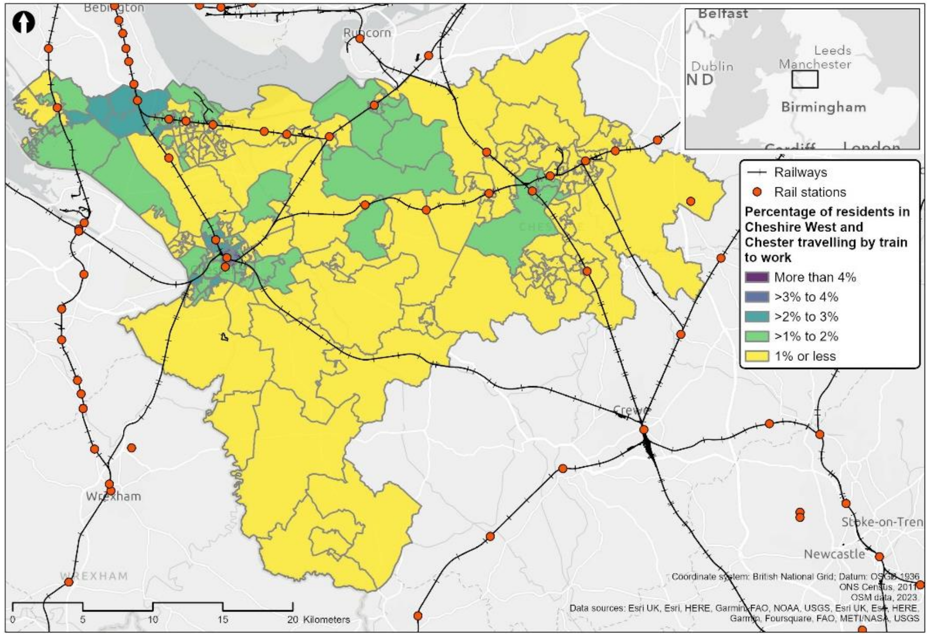


Source: DfT, https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic

4.5.2.2 Spatial distribution

Map 4.16 shows, from the 2011 Census, how commuter rail mode shares vary across CW&C, together with a depiction of the current rail network.

Map 4.16: Distribution of commuter rail mode shares in CW&C



Source: Census, 2011

This shows how highest rail usage is focussed around Chester and Hooton. There is also some activity around Frodsham, Neston and Northwich, but little elsewhere.

The Office for Rail and Road (ORR) station entry and exit estimates for the periods April 2019 to March 2020 (pre-COVID) and April 2023 to March 2024 (post-COVID) are shown below in Table 4.6. The most well-used station in both years was Chester reaching almost 4.7 million passenger entries and exits in 2023-2. The least used stations in both cases were Ince & Elton and Stanlow & Thornton, which are currently served by just 4 trains per day (2 in each direction).

Table 4.6: CW&C station usage estimates

Station	Usage		Change	Change %
	2019-20	2023-24		
Chester	5,093,756	4,727,440	-366,316	-7%
Hooton	860,318	756,650	-103,668	-12%
Ellesmere Port	472,100	465,956	-6,144	-1%
Bache	466,508	403,316	-63,192	-14%
Hartford (Cheshire)	283,096	198,568	-84,528	-30%
Frodsham	259,628	210,940	-48,688	-19%
Greenbank	231,198	211,404	-19,794	-9%
Winsford	206,492	200,914	-5,578	-3%
Northwich	205,856	169,316	-36,540	-18%
Capenhurst	168,866	185,428	16,562	10%
Overpool	152,186	227,138	74,952	49%
Little Sutton	122,576	170,902	48,326	39%
Helsby	116,468	98,362	-18,106	-16%
Cuddington	87,252	78,622	-8,630	-10%
Lostock Gralam	54,008	54,324	316	1%
Delamere	43,554	54,316	10,762	25%
Neston	42,554	28,412	-14,142	-33%
Mouldsworth	29,790	26,708	-3,082	-10%
Acton Bridge (Cheshire)	27,976	44,682	16,706	60%
Ince & Elton (Cheshire)	740	86	-654	-88%
Stanlow & Thornton	82	44	-38	-46%

Source: ORR Table 1415

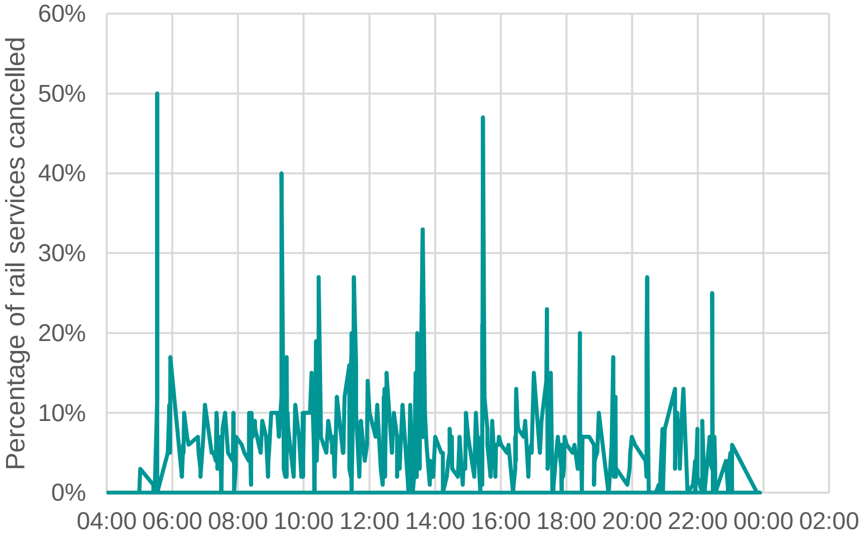
Several stations in Cheshire West and Chester have now seen their usage exceed the levels observed before COVID, although other stations' usage still remains below that of 2019-20. Overall, stations in Cheshire West and

Chester lost 32% of their passengers between 2019-2020 and 2021-2022, but that figure now stands at -7%.

4.5.3 Performance

The reliability of rail services has a critical impact on patronage. Chart 4.14 presents reliability data for services which ran from Chester to key rail destinations on weekdays between November 2024 and April 2025. The majority of services were cancelled less than 10% of the time but a small number of services were cancelled more than 20% of the time. One services to Shrewsbury was cancelled 50% of the time.

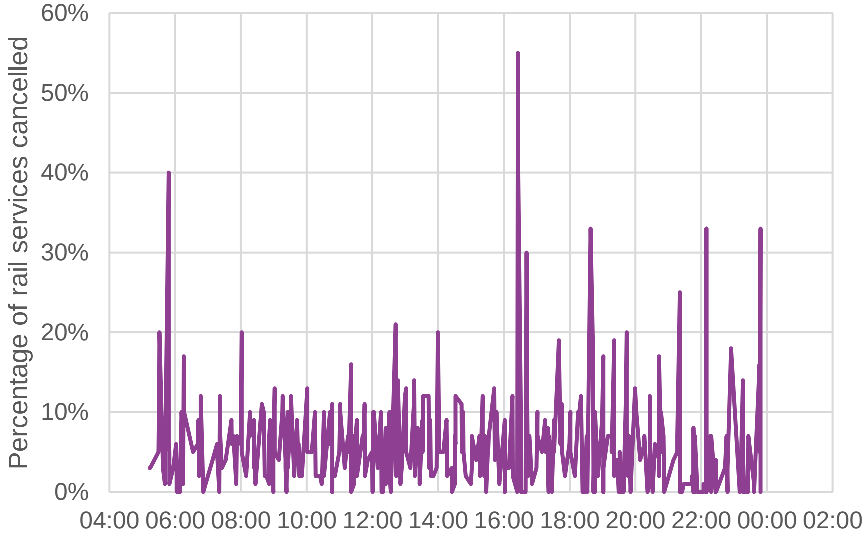
Chart 4.14: % services cancelled – from Chester (5:00am-2:00am)



Source: Recenttraintimes.co.uk (1/11/24-30/4/25)

Similarly, Chart 4.15 presents reliability data for services which ran to Chester from key rail destinations on weekdays between November 2024 and April 2025. While the majority of services were cancelled less than 10% of the time, there are some noticeable exceptions, such as the 16:26 service from Llandudno Junction which was cancelled 50% of the time. A handful of other services are cancelled in excess of 20% of the time, mostly on Transport for Wales services from Birmingham and Shrewsbury.

Chart 4.15: % services cancelled – to Chester (5:00am-2:00am)

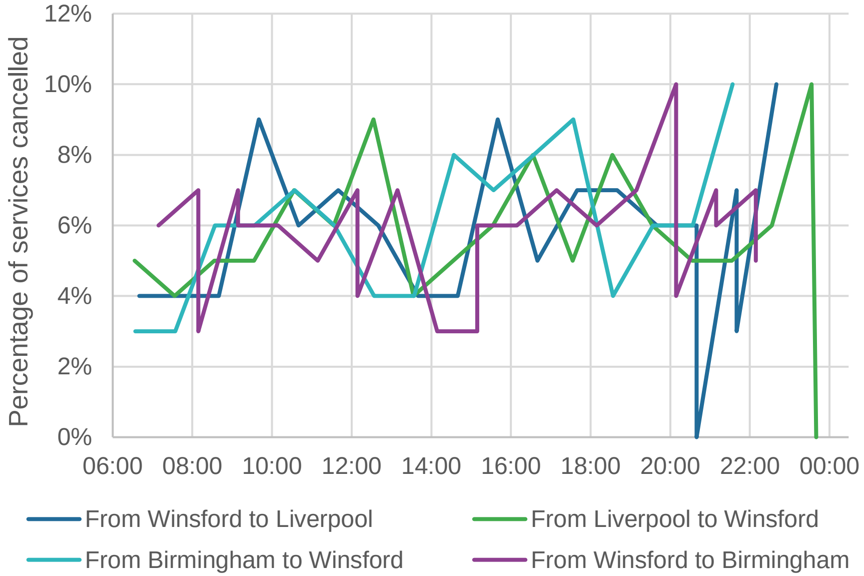


Source: Recenttraintimes.co.uk (1/11/24-30/4/25)

The real-time data for services operating to/from Chester indicates that Merseyrail services have a particularly high reliability, with the majority of journeys cancelled or running more than 5 minutes late less than 5% of the time. The most prominent issues with reliability are seen on services between Birmingham, Shrewsbury and Holyhead.

The real time data for services to/from Winsford, as shown in Chart 4.16 indicates a high reliability with all journeys being cancelled less than 10% of the time, while several journeys have a cancellation rate of less than 4%. This is not unexpected given that Winsford is currently served by only 1 train per hour in each direction and due to the high resilience of the West Coast Mainline timetable following a timetable recast in December 2022 (as a result of previously poor performance).

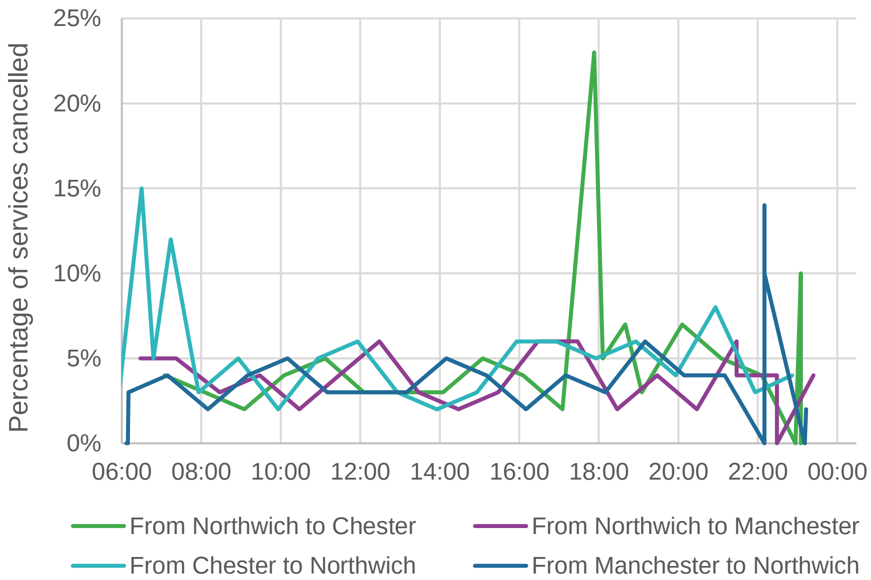
Chart 4.16: % services cancelled – to/from Winsford (06:00-00:30)



Source: Recenttraintimes.co.uk (1/11/24-30/4/25)

The real time data for services to/from Northwich, as shown in Chart 4.17, also indicates a relatively high reliability with all journeys being cancelled less than 15% of the time (with the exception of the 17:53 departure from Stockport to Chester), while several journeys have a cancellation rate of less than 5%. As with Winsford, this is not unexpected given that Northwich is currently served by only 1 train per hour in each direction.

Chart 4.17: % services cancelled – to/from Northwich (06:00-1:00am)



Source: Recenttraintimes.co.uk (1/11/24-30/4/25)

Poor reliability of rail services will have a significant impact on the post-pandemic recovery of patronage and may impact longer-term mode-shift goals away from the private car.

4.5.4 Rail proposals

There are several schemes of various timescales and stages of development proposed across CW&C as outlined in Table 4.7.

Table 4.7: Proposed rail schemes

Scheme	Description	Funding	Status
HS2 Phase 1 and possible extensions northwards	New services to Crewe provides nearest HS2 rail hub for CW&C. Journey time reductions to London and Birmingham but requiring changes at Crewe and Birmingham Interchange (in the case of Birmingham)	DfT	Planned completion 2040-2045
Union Connectivity Review	Improve journey time/resilience/ capacity between North Wales and North West of England on NWCL. Utilise HS2 and electrification to better serve North Wales via connections at Crewe	N/A	Proposed See TfW North Wales Metro
TfW North Wales Metro	Increase frequency to 2tph between Wrexham and Bidston.	Welsh Gov't	Expected – date TBC
	Extend Liverpool to Chester service to Llandudno. Extend Mcr Airport to Llandudno service to Bangor		Expected – date TBC
	New service between Liverpool and Shrewsbury/Cardiff		Expected – date TBC
TfW Chester Station Upgrade	Significant customer improvements including new CCTV, upgraded waiting room, and CIS screens. This coincides with the longer term Chester City Gateway scheme which will improve the public realm outside of the station, improve accessibility/ interchange and create 600 new homes	Network Rail	Committed scheme completed 2025 – longer term scheme TBC
Expansion of Merseyrail network using Class 777 trains	Convert operation of the Borderlands Line to Class 777 with extension to Liverpool	N/A	SOBC
	Extend services from Ellesmere Port to Helsby and beyond	N/A	SOBC
	Extend Merseyrail services from Chester to Crewe	N/A	Aspiration
Growth Track 360 – Mid-Cheshire Line	Line-speed enhancements. Frequency increased to 2tph.	N/A	Proposed/ Aspiration
	Return of services between Northwich and Sandbach via Middlewich and a new station at Gadbrook Park.	DfT	SOBC
Growth Track 360 – HS2 & NPR	Direct HS2 services to Chester and North Wales. Improved connectivity between Chester, Warrington, Manchester and Man Airport on NPR	N/A	Proposed

Source: CW&C (Rail Development Manager), North Wales Metro, Growth Track 360 2023

The continued progression of these schemes to improve rail services will ensure enhanced connectivity and rail usage across the borough helping to drive mode-shift away from the private car.

Rail – key findings

- Rail passenger numbers decreased by 32% across the borough between 2019/20 and 2021/22, largely as a result of the COVID-19 pandemic, but this has returned to only 7% below 2019/20 levels.
- More recent national data suggests that rail patronage has now recovered to over 95% of pre-pandemic levels.
- Post pandemic, rail services continue to be impacted by driver shortages and rolling stock availability. These, in turn, are having a significant impact on the reliability of services.
- The introduction of brand-new rail fleets across the majority of rail services in CW&C should ultimately improve reliability and passenger comfort for rail users.
- Increasing rail fares may restrict passenger growth during the 'cost of living crisis.'
- Rail services across CW&C largely perform well. The most prominent issues with reliability on services operating to/from Chester are seen between Chester and London, Leeds and Shrewsbury/Birmingham.
- The poor reliability across services to/from Chester is partially associated with services operated by TfW due to severe rolling stock shortages, although reliability issues are seen on services operated by different operators.

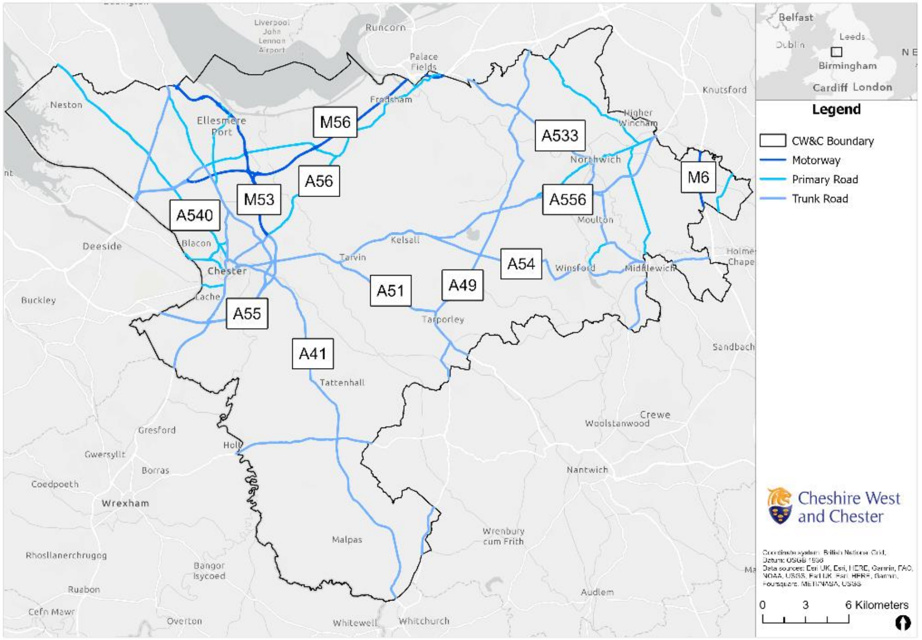
4.6 Highways

4.6.1 Network

4.6.1.1 Overview

An overview of the motorway, primary road and trunk road network in CW&C is shown in Map 4.17.

Map 4.17: CW&C strategic highway network



Source: OpenStreetMap

This shows how CW&C is intersected and traversed by a number of strategic routes, many of which radiate from Chester. These include:

- The M53 motorway between Chester and Birkenhead
- The M56 motorway between Chester and Manchester
- The A55 between Chester and Holyhead
- The A483 between Chester and Llanelli
- The A41 between Chester and Birkenhead, and between Chester and London
- The A51 between Chester and Lichfield
- The A54 between Chester and Buxton
- The A556 between Chester and Altrincham

In addition, the A49 between Hereford and Wigan traverses the east side of the borough, as does the A533 from Runcorn to Middlewich, and the M6 for a short section.

These strong highway linkages reflect CW&C's location as a key gateway to both North Wales and the Liverpool City Region.

Table 4.8 shows the composition of the CW&C highway network by road type. 50% of roads across the borough are classed as rural, having a speed limit of over 40mph. The highway network outlined in the table below also comprises:

- 392 bridges
- 876 retaining walls
- 44,150 street lights
- 5,003 illuminated signs
- 128 signalised junctions
- 93 signalised pedestrian crossings

Table 4.8: CW&C highway network composition by road type

Road type	Length (km)	Proportion
Motorway/Trunk	70	3%
A road	330	14%
B road	142	6%
C road	499	21%
Unclassified	1,313	56%
Total	**2,354**	**100%**

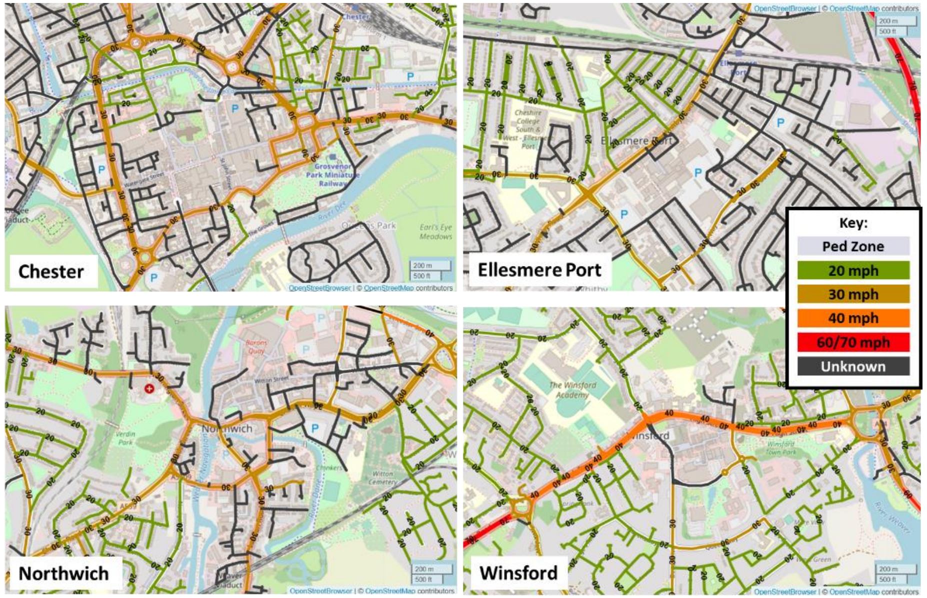
Source: CW&C State of the Borough Report, 2024

4.6.1.2 Pedestrian friendly streets

Across the borough, several interventions have been introduced in order to make streets safer and more pedestrian friendly.

Designated pedestrian areas have been introduced in key centres to enhance access to shops and other local amenities. The most prominent example is in Chester City Centre where several roads have been converted to pedestrian areas, while further expansion of Chester's pedestrian zone has been proposed to capitalise on the rise in al fresco dining in the wake of the COVID-19 pandemic. Similar pedestrian areas are found in Northwich, Winsford and Neston town centres within key retail areas. A much smaller pedestrian area in Ellesmere Port provides access to the Port Arcades Shopping Centre. Further pedestrian areas will be introduced in Ellesmere Port between the railway station and the town centre as part of transformation changes to the town centre (see Section 3.5.4). Map 4.18 shows the pedestrian areas and speed limits within each of the key town centres.

Map 4.18: Pedestrian areas and speed limits in key town centres



Source: OpenStreetBrowser, 2023

CW&C council is currently in the process of introducing School Streets across the borough. A School Street is a road outside a school with a restriction on motorised traffic at the start and end of the school day. School Street schemes may cover part of a road, a whole road or even several roads near a school. Restrictions on motor vehicles can operate every weekday throughout the year - they are not one-off road closure events.

Motor vehicles are not permitted to enter the School Street during its hours of operation unless they have been granted an exemption within the traffic regulation order (TRO). Exemptions generally include, but are not limited to, vehicles belonging to residents, Blue Badge holders and the emergency services. Implementing School Streets can also help local authorities to fulfil their statutory duty to promote the use of sustainable modes of travel to school as set out in the Education Act 1996.

Cheshire West and Chester currently has two school streets, Our Lady's Star of the Sea and Woodlands Primary Schools in Ellesmere Port, both in operation with permanent traffic orders restricting motorised traffic with no staffed barriers in place. The two trial schemes were introduced with Temporary Traffic Regulation Orders and initially enforced using temporary (moveable) barriers staffed by volunteers at the relevant times for the initial six months. The effectiveness of these schemes to increase active travel - walking, wheeling, cycling and scooting - to and from school is being reviewed.

A prioritisation list of primary schools and secondary schools in the borough has been produced looking at where surrounding road layouts make delivery possible. We are in the process of contacting schools with suitable roads to apply to become a School Street. This will require commitment from the school to provide community volunteers and staff resource to support ongoing delivery, promotion and monitoring of the School Street.

In 2021, CW&C completed a programme to increase the number of 20 mph speed limits on residential roads, with a total of 202 introduced over a four-year period. An analysis of the first three years (125 schemes) showed a 43% reduction in vehicle collisions, a 14% reduction in collisions where someone is killed or seriously injured, and a 47% reduction in collisions causing slight injuries.

The Chester One City Plan outlines the Council's plans for Chester, including building on the city's strengths as a compact, connected centre surrounded by '15-minute neighbourhoods'. The development of '15-minute neighbourhoods' which will enhance connectivity via active travel modes. The continued introduction of these schemes will improve road conditions for pedestrians and cyclists, encouraging an increase in usage. Walking and cycling continue to be a priority for CW&C as set out in its 2020 Local Walking and Cycling Investment Plan (LCWIP).

4.6.1.3 Signal technology

Traffic signals across the borough are controlled using a variety of different technologies. Approximately 90% of the technology used to control signals across CW&C has been supplied by Yunex. Monitoring equipment has been installed to allow appropriate changes to traffic signal timings to suit live traffic conditions, ensuring maximum efficiency of the highway network. Within key centres, including Chester, Ellesmere Port, Northwich, Neston and Frodsham, access to CCTV cameras is available for additional monitoring purposes.

There are also small regions across the borough where Split Cycle Offset Optimisation Technique (SCOOT) is employed. SCOOT is a real time adaptive traffic control system for the coordination of traffic signals across an urban road network. SCOOT is used extensively within Chester City Centre, in Northwich between Chester Way / Castle Street and Chester Way / Venables Road, and in Lostock Gralam at the Manchester Road / Lostock Business Park and Manchester Road Gyratory / Chester Road junctions.

All SCOOT junctions operate using a maximum cycle time of 96 seconds in order to account for pedestrian movements and reduce delays to pedestrians. The majority of sites are located on A roads on the outskirts of key economic centres and are operated using Microprocessor Optimised Vehicle Actuation (MOVA). MOVA assesses traffic flow and calculates green-time for each junction arm to maximise throughput based on current traffic conditions. The remainder of junctions operate using Vehicle Actuated (VA) control.

In the future, CW&C Council intends to implement SCOOT at appropriate junctions in Ellesmere Port and Winnington. SCOOT is expected to be added to junctions in Winnington in the next 2-3 years as a result of developer funding. However, there is no current timescale for the introduction of the system within Ellesmere Port.

The continued development of intelligent traffic signal technologies across the borough will lead to enhanced efficiency of the highway network and greater priority for active travel modes.

4.6.2 Usage

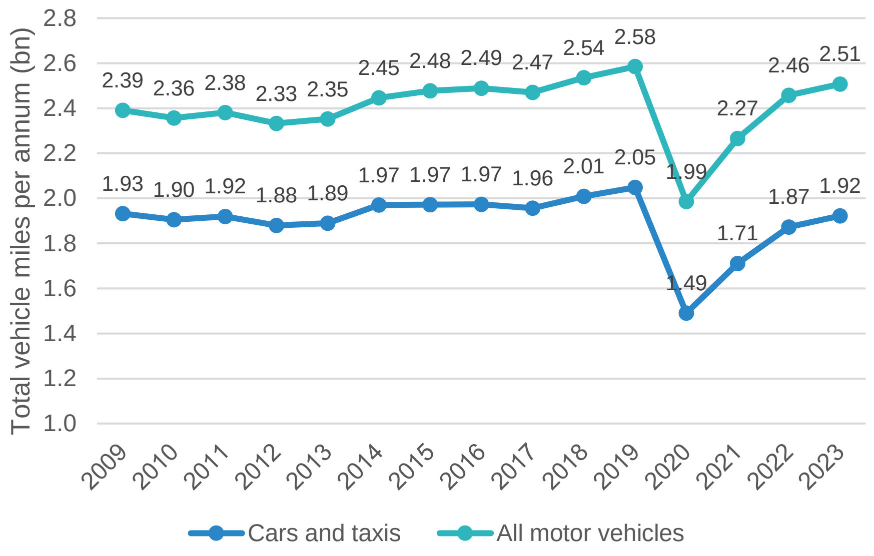
4.6.2.1 Traffic flow levels

DfT estimate total vehicle miles on CW&C's highway network for every year. Chart 4.18 shows total annual miles from 2009 to the most recent data year.

This shows a general trend of traffic growth in CW&C up to 2019, with car and taxi miles increasing by 6% from 2009, and total vehicle miles increasing by 8%, with the difference being due to the strong national increase in LGV miles over this period due to growing online shopping and other changes within the logistics industry.

Following 2019, the effects of the pandemic are clear to see, with a 23% drop in mileage in 2020, recovering to 12% below 2019 levels in 2021. By 2023, mileage for all motor vehicles was 3% below pre-pandemic levels, and car and taxi mileage was 6% below pre-pandemic.

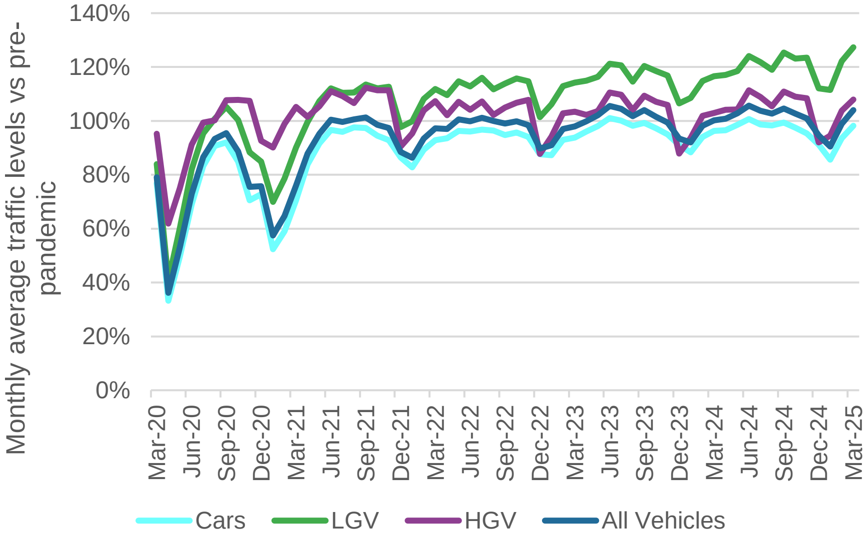
Chart 4.18: Annual vehicle mileage on CW&C roads



Source: DfT, https://roadtraffic.dft.gov.uk/local-authorities/148

Chart 4.19 below shows DfT national level data on traffic levels since the pandemic as a percentage of the levels recorded just before the pandemic began.

Chart 4.19: National traffic levels compared to pre-pandemic levels



Source: DfT, https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic

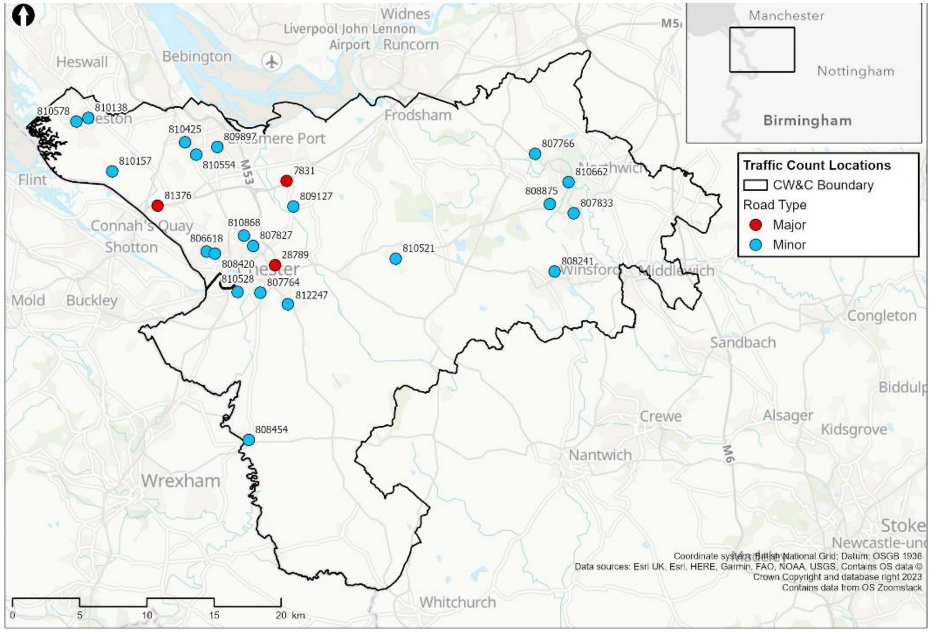
This shows how the average annual traffic reduction in 2020 and 2021 was not consistent throughout the year, with levels sharply dropping during lockdown periods but then bouncing back to near pre-pandemic levels quite quickly outside of lockdown. Since mid-2021, overall traffic levels have largely been restored to pre-pandemic levels, but this result masks a change in traffic composition with cars sitting at about 90% of pre-pandemic levels and LGVs and HGVs exceeding their previous levels. These changes reflect how the pandemic resulted in permanent increases in both home-working and online shopping, which decreases private car miles but increases logistics mileage.

These trends are explored further for CW&C in the following sections.

4.6.2.2 Traffic flow profiles

To understand weekday traffic flow profiles in CW&C and how they were affected by the pandemic, DfT count sites have been identified where data is available in each year between 2019 and 2022 inclusive. The location and road type of these sites is shown in Map 4.19.

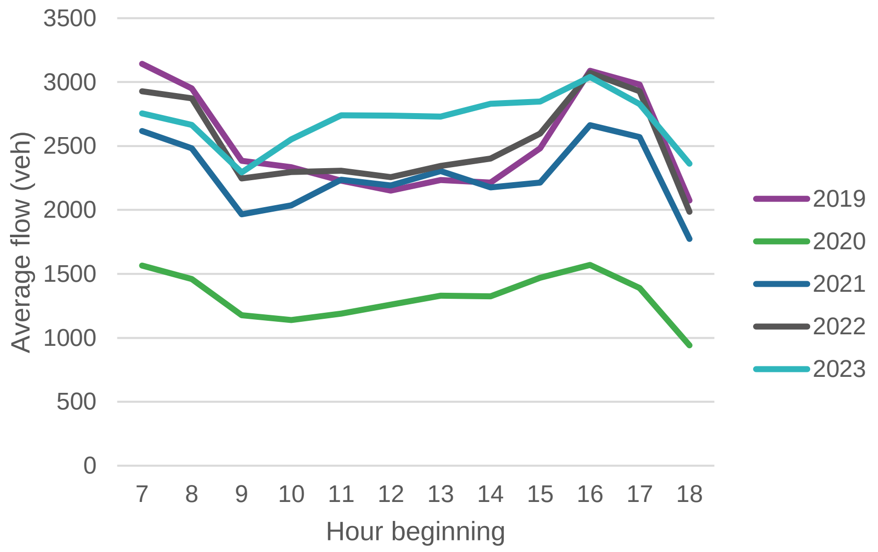
Map 4.19: DfT count site locations for flow profiling



Source: DfT, https://roadtraffic.dft.gov.uk/local-authorities/148

For the major road sites, which comprise one motorway and two A-roads, Chart 4.20 shows average weekday profiles in each year.

Chart 4.20: CW&C major road average weekday traffic profile

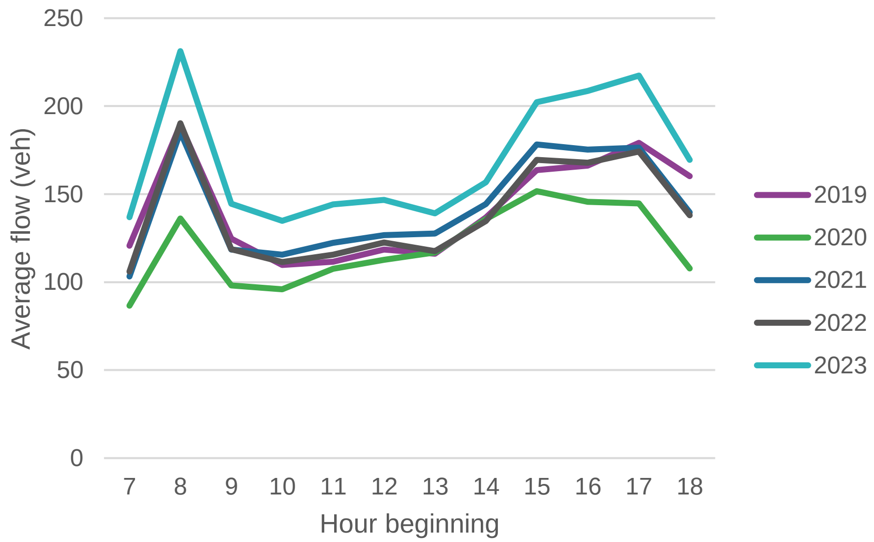


Source: DfT, https://roadtraffic.dft.gov.uk/local-authorities/148

This shows, for major roads, that the peak hours tend to be between 07:00 and 08:00 in the morning and between 16:00 and 17:00 in the evening. This was also the case through the pandemic, but with less pronounced peaks. The data shows that traffic levels had returned to pre-pandemic 2019 levels by 2022, and exceeded them in the inter-peak period in 2023.

For the minor road sites, which comprise 21 C-road and unclassified road locations, Chart 4.21 shows average weekday profiles in each year.

Chart 4.21: CW&C minor road average weekday traffic profile



Source: DfT, https://roadtraffic.dft.gov.uk/local-authorities/148

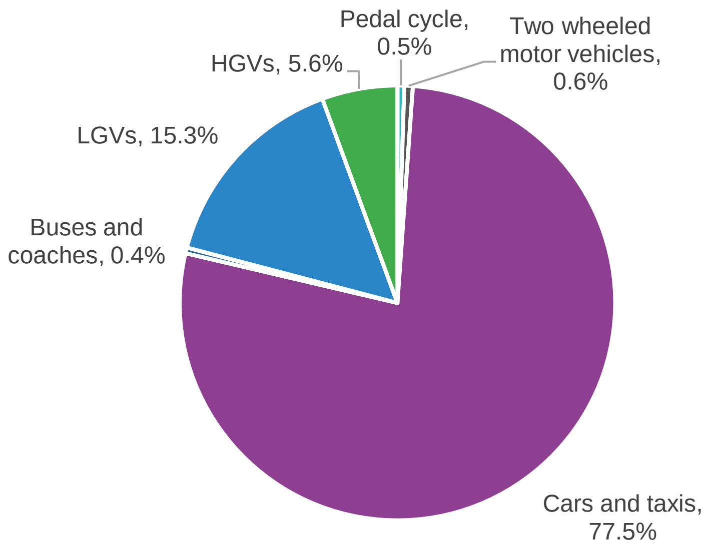
In contrast to the major road profile, this profile for minor roads shows a much more pronounced and later morning peak period between 08:00 and 09:00. This likely reflects the combined impact of commuting and school run traffic on local roads. The evening peak is also longer and comparatively lower than for major roads, with the separation of afternoon school run traffic and evening commuter traffic resulting in a relatively flat peak from 15:00 to 18:00.

A further difference from the major road profile is seen in the effect of the pandemic, which was much less for local roads. This reflects how longer distance journeys were discouraged during lockdown periods but local journeys were still undertaken. 2022 flows also show a full return to pre-pandemic levels, while 2023 shows flows in excess of those previous levels.

4.6.2.3 Traffic flow composition

Based on the latest year (2023) of DfT average annual daily flow (AADF) traffic counts for CW&C, the composition of traffic flow is shown in Chart 4.22. The chart indicates that the road network in CW&C is car (and taxi) dominated accounting for three quarters of all vehicles.

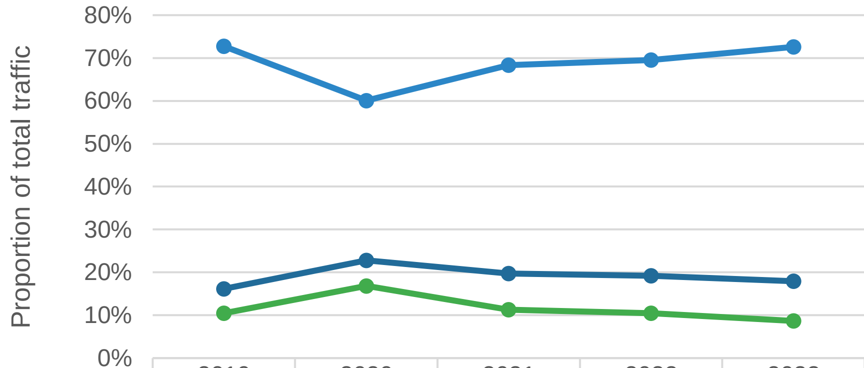
Chart 4.22: CW&C highway network traffic flow composition, 2023



Source: DfT, https://roadtraffic.dft.gov.uk/local-authorities/148

By considering the DfT count sites in Map 4.17: above, the impact of the pandemic on traffic composition on major and minor roads in CW&C can be observed. For major roads, this is shown in Chart 4.23 below. It should be noted that there are only three count sites, and these are all located in the west of the borough around Chester.

Chart 4.23: CW&C major road traffic flow composition over time



	2019	2020	2021	2022	2023
Cars	73%	60%	68%	70%	73%
LGVs	16%	23%	20%	19%	18%
HGVs	10%	17%	11%	10%	9%

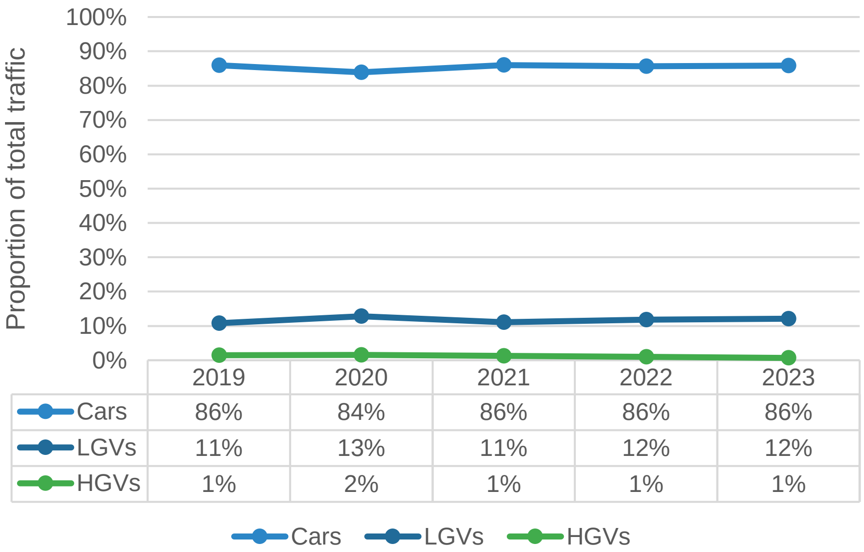
Cars LGVs HGVs

Source: DfT, https://roadtraffic.dft.gov.uk/local-authorities/148

This shows that, on CW&C major roads, the proportion of cars dropped 13% during the height of lockdown restrictions in 2020, while the proportion of LGVs and HGVs increased accordingly. In the years since the pandemic, the HGV proportion has returned to previous levels, but LGV levels have remained higher and car levels commensurately lower, as per the national trends noted above.

The same data for CW&C minor roads is shown in Chart 4.24 below. This shows a much more minor impact of the pandemic on minor roads. There is a small increase in the composition of LGVs and HGVs in 2020, but much less pronounced than for major roads, and composition has since largely returned to pre-pandemic levels. Overall, it can be seen that cars account for a higher proportion of flows on minor roads due to lower goods vehicle proportions than on major roads.

Chart 4.24: CW&C minor road traffic flow composition over time



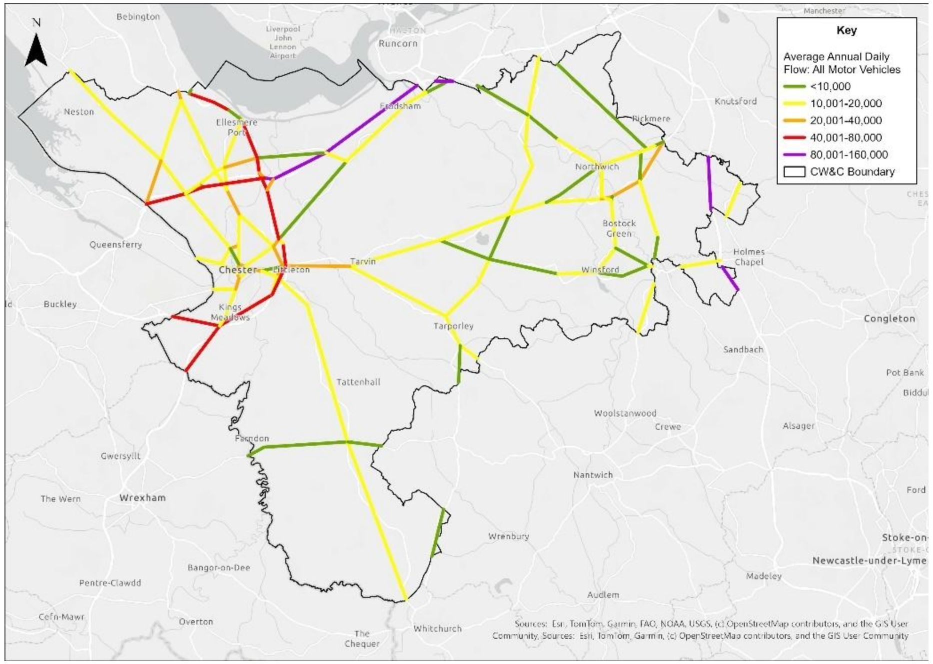
	2019	2020	2021	2022	2023
Cars	86%	84%	86%	86%	86%
LGVs	11%	13%	11%	12%	12%
HGVs	1%	2%	1%	1%	1%

Source: DfT, https://roadtraffic.dft.gov.uk/local-authorities/148

4.6.2.4 Traffic flow distribution

Based on latest complete DfT average annual daily flow traffic counts for CW&C (2019), Map 4.20 shows how these are distributed across the strategic road network. As would be expected, this shows heaviest flows on the motorway network, but with M53 flows being lower than M56 and M6 flows. On the A-road network, the heaviest flows are seen in and around Chester and Ellesmere Port, though also around Northwich and southwards to Middlewich.

Map 4.20: CW&C highway network annual average daily flow, 2023



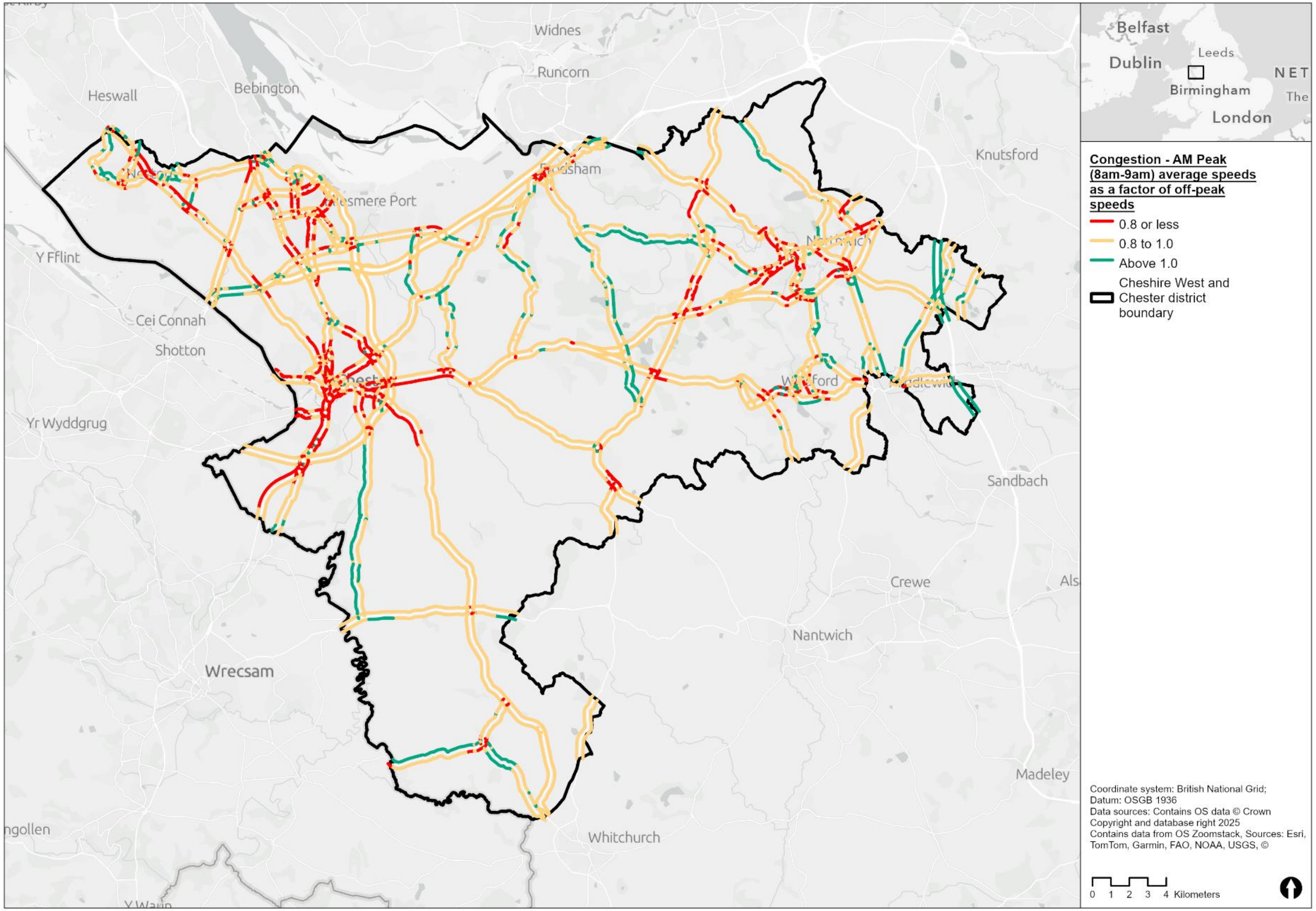
Source: DfT, https://roadtraffic.dft.gov.uk/local-authorities/148

4.6.3 Performance

4.6.3.1 Congestion

Map 4.21 shows the congestion faced across the strategic road network across the borough. Congestion is calculated by comparing average vehicle speeds collected via GPS within the AM peak against vehicle speeds during the off-peak, when fewer vehicles are travelling across the network, to produce a congestion factor. A congestion factor below 1 represents a lower peak speed compared to off-peak speed and thus is indicative of congestion.

Map 4.21: Congestion on key strategic roads, 8-9am Mon-Thu 2022



Source: INRIX, Jan-Dec 2024 data, excluding weekends and holidays

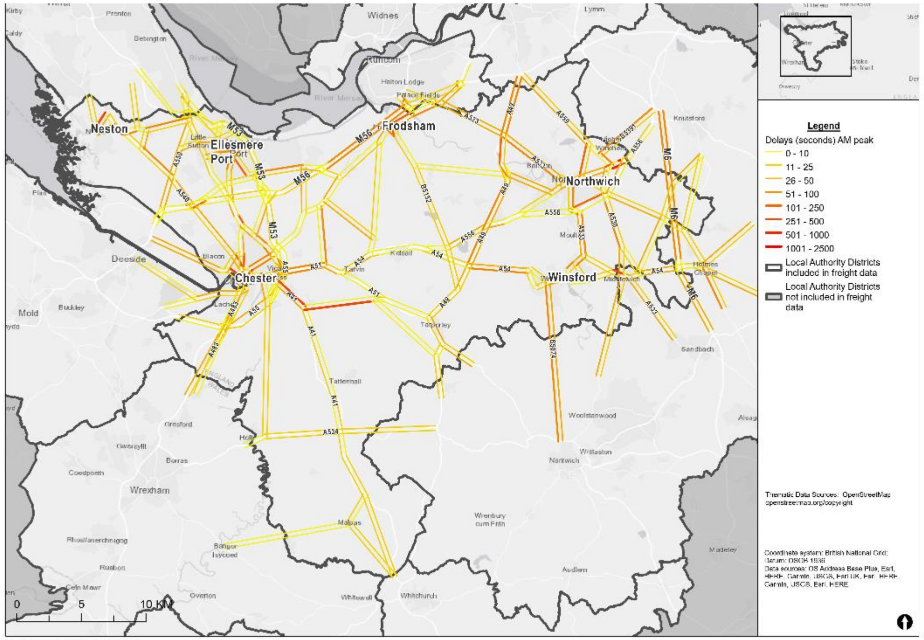
Map 4.21 shows that the network suffers from localised queuing in peak times around the key economic centres, most prominently Chester, Ellesmere Port and Northwich. There is also evidence of congestion on key strategic links, in particular the A540 which connects Chester with west Wirral, the A550 which connects Deeside with Merseyside and the A49 which connects the eastern half of the borough with Warrington.

Congestion is most prominent on the key strategic routes to/from Chester, in particular the A483, A5115/A41 and A56. CW&C have recently completed a major junction improvement scheme along the A51 Tarvin at Stamford Bridge to increase capacity and alleviate congestion. A further capacity improvement scheme at the A51/A55 Roundabout has also been considered for development as and when National Highways funding becomes available, which is key to facilitating the success of the A51 Stamford Bridge works completed by CW&C. As the key route into to Chester for a number of key settlements across CW&C, it is important to ensure the A51 is able to provide efficient and reliable journeys to support access to job, education, key services and support the aspirations for growth as outlined in Section 3.6.

Congestion is also evident on key routes into Northwich such as the A559 and A533 Winnington Corridor. Significant housing development has occurred within this area over the last decade, with some further large-scale sites planned for development within the Local Plan period (see Section 3.6). Additional housing growth is likely to exacerbate congestion issues in this area adding further vehicles onto the network, in turn reducing the attractiveness of the borough for further inward investment.

Map 4.22 shows vehicle delay on key strategic roads, using TfN's NoHAM Model. The vehicle delay further highlights issues with congestion on routes within key centres, but there is a greater indication of delay on key strategic routes around Winsford compared to the congestion data in Map 4.21. The vehicle delay data also highlights congestion issues on the M56, A41 and Guy Lane/Ryecroft Lane between the A41 and A51.

Map 4.22: Vehicle delay on key strategic roads, 8-9am



Source: TfN, NoHAM Model, 2018 base year

As noted earlier, the NTAS collects data on public perceptions towards travel and transport across the UK. Responses to the survey in relation to congestion indicated:

- 45% and 69% of respondents reported congestion as a serious problem on motorways and in town and cities respectively.
- 72% of respondents were in favour of having speed limits of 20 miles per hour in residential streets.

Within CW&C, the NHT survey suggests 45% of residents were satisfied with congestion in 2021, slightly above the national average at 43%. However, levels of satisfaction with congestion have declined 6% between 2015 and 2021[66].

4.6.3.2 Road safety

The following tables summarise collision data for CW&C over the 6-year period from 2018 to 2024. Table 4.9 shows the number of collisions resulting in fatal or serious injury which have occurred by road class. This shows that despite making up just 14% of the road network (Table 4.8), 61% of fatal and serious collisions occur on A-roads.

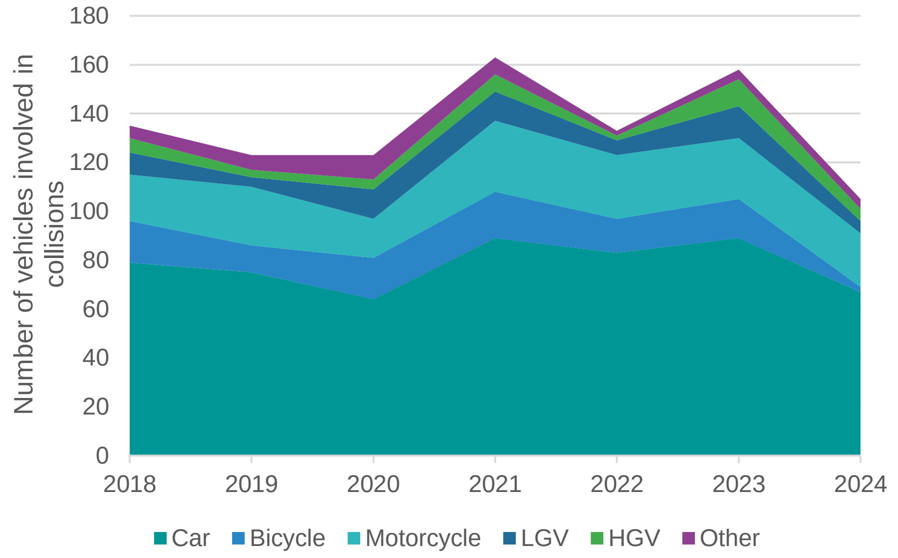
Table 4.9: Collisions (2018-2024) by Road Class

	A-Road	B-Road	C-Road	Unclassified	Total
Fatal	38	6	2	7	53
Serious	289	58	25	114	486
Total	327	64	27	121	539

Source: CW&C – KSI Data

Chart 4.25Chart 4.25: shows the number of fatal and serious collisions by the type of vehicles involved. Cars account for 58% of the vehicles involved in collisions, which reflects the high proportion of cars using the road network (Chart 4.22). In turn, however, bikes and motorcycles account for just over a quarter of collisions despite accounting for less than 1% of the traffic flow composition. There is an evident decrease in the number of collisions in 2020, likely due to the reduction in traffic volumes as a result of the Covid-19 pandemic, followed by an increase in 2021.

Chart 4.25: Collisions (2018-2024) by vehicle type

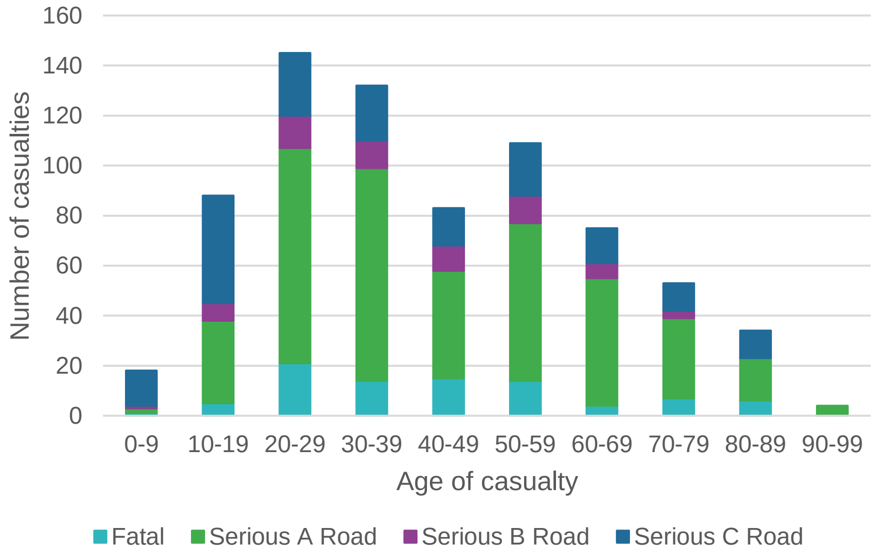


Source: CW&C - KSI

Chart 4.26 shows the number of casualties from fatal and serious collisions by the age of the casualty. The data indicates that the highest numbers of casualties from fatal or serious collisions are within the 20-29 age group, on A-Roads. A total of 43 collisions involving children under the age of 15 were reported between 2018-2023, the majority of which occurred on C-roads. A further 10 were recorded on A-roads, and 2 on B-roads, including one fatality.

[66] https://www.cheshirewestandchester.gov.uk/your-council/key-statistics-and-data/state-of-the-borough/transport-and-connectivity

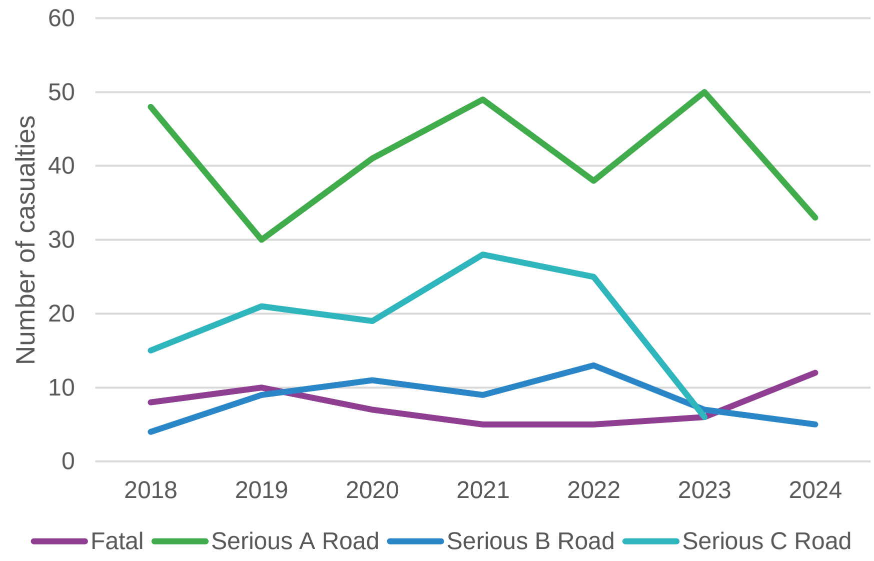
Chart 4.26: Casualties from fatal and serious collisions (2018-2024) by age



Source: CW&C – KSI Data

The change in the number of fatal and serious casualties over time between 2018 and 2024 is shown in Chart 4.27. The chart indicates a general decrease in the number of fatalities between 2019 and 2022 but an increase in 2023 and 2024, while the number of serious collisions fluctuates over time depending on road type.

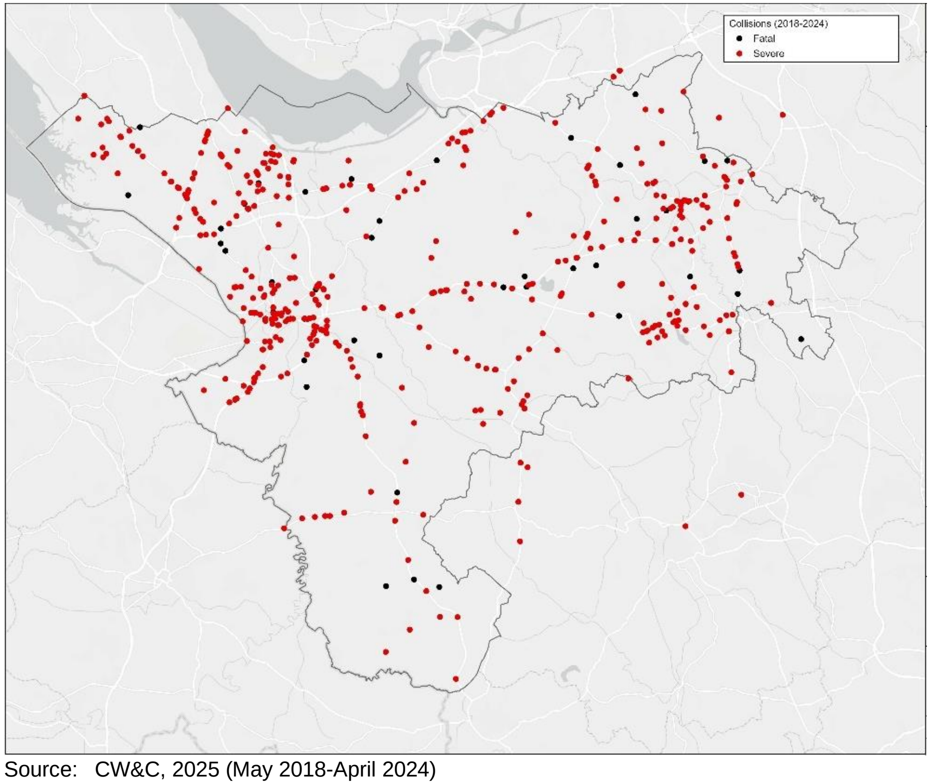
Chart 4.27: Change in number of casualties over time (2018-2024)



Source: CW&C – KSI Data

Map 4.23 shows collisions which have resulted in serious or fatal injury on the CW&C road network in the last 5 years.

Map 4.23: Serious and fatal collisions occurring in CW&C, 2018-2024



Source: CW&C, 2025 (May 2018-April 2024)

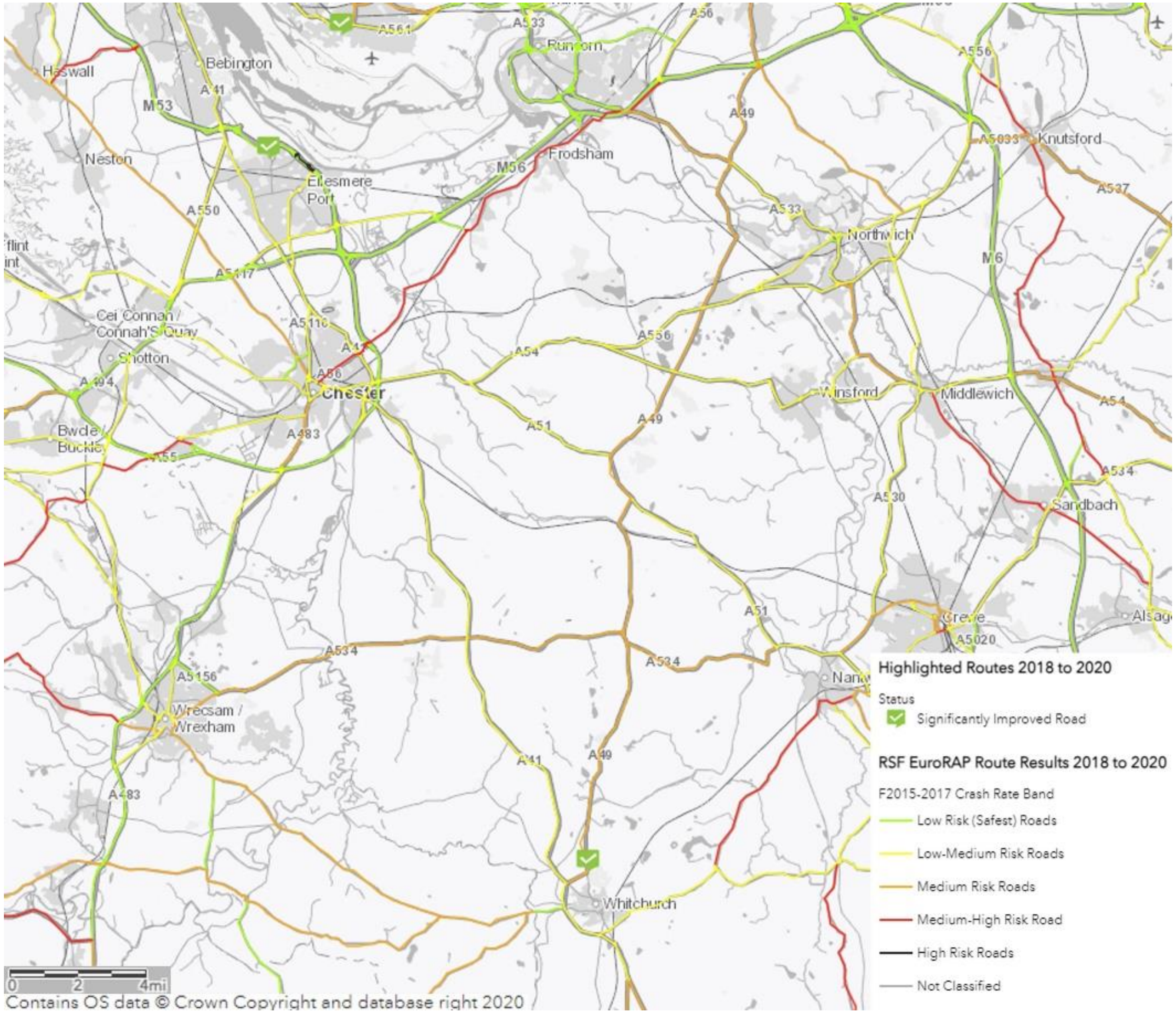
This map shows a total of 53 fatal collisions. The incidence of fatal collisions is borough-wide, with a particular concentration on the roads to the west of Ellesmere Port, such as the A540 and A41. Serious collisions tend to occur most commonly around local centres, with a higher concentration in the western half of the borough. This is demonstrated by clusters of collisions in Chester, Ellesmere Port, Northwich and Winsford. There is also a concentration of collisions on several key strategic roads including the A41, A54 and A540.

Improving road safety across the network and reducing the likelihood of incidents is key to ensuring the reliability of the network for commuters, visitors, shoppers, and for freight movements contributing to a productive economy. In addition, enhanced safety across the network improves access for sustainable modes, reducing delays for bus journeys and creating safer environments for pedestrians and cyclists.

Map 4.24 shows the statistical risk of a fatal or serious injury crash occurring on motorways and A-roads in CW&C and surrounding key links. The risk is calculated by comparing the frequency of road crashes resulting in death and serious injury on every road with how much traffic each road is carrying.

Map 4.24 shows that the majority of A-roads and motorways within the borough are classified by EuroRAP as low risk, such as the A55, M53 and M56, or low-medium risk such as the A41, A51, A54, and A556, providing key strategic links between Chester and the Wirral, Northwich and Winsford. This indicates high levels of safety for motorists when travelling on the majority of the key routes within the borough. A small number of routes are classified as medium risk including the A534, A49 and A540, which may be the result of the relatively rural nature of these routes. The least safe roads in the borough are the A56, classified as medium-high risk, and the A5032 in Ellesmere Port classified as high risk. The A5032 is an anomaly due to the nature of data collection, with two collisions occurring on this arm of the M53 junction 9 as opposed to on the A5032 itself. The A56 may require road safety measures to be implemented in order to significantly improve the risk rating on this road.

Map 4.24: EuroRap route results (2018-2022)



Source: EuroRap, 2022

4.6.3.3 Maintenance

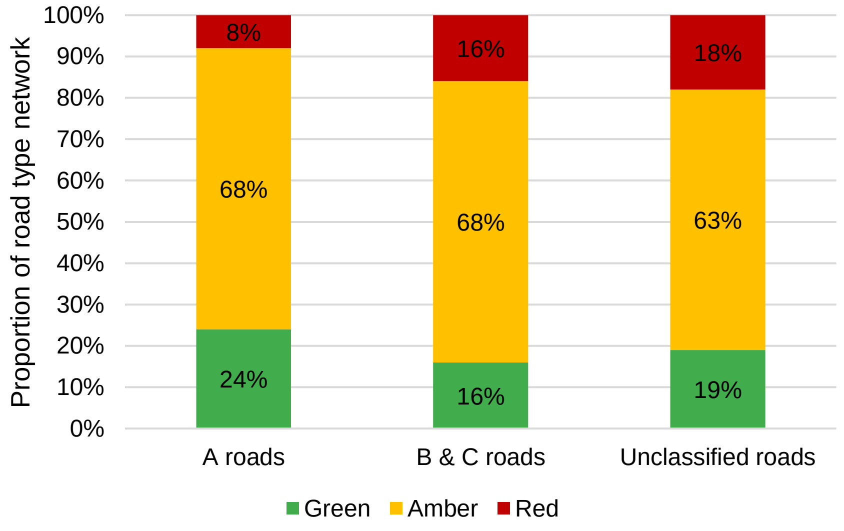
CW&C Council's highway network infrastructure is a vital asset, valued at more than £5bn, and its serviceability impacts the lives of the borough's residents, businesses and visitors. High-quality highway network infrastructure is essential for the safe, efficient, and effective movement of people and goods across the borough and beyond.

CW&C Council conduct regular and detailed surveys of the condition of their entire highway network. Every highway link is given a RAG rating according to its maintenance condition, as follows:

- Green – no further investigation or work is needed
- Amber – maintenance may be required soon
- Red – should be considered for maintenance. Treatment may or may not be required, but the road should be investigated fully

Chart 4.28 summarises the condition rating of the CW&C network in 2024 by road type.

Chart 4.28: Maintenance condition of CW&C highway network, 2024

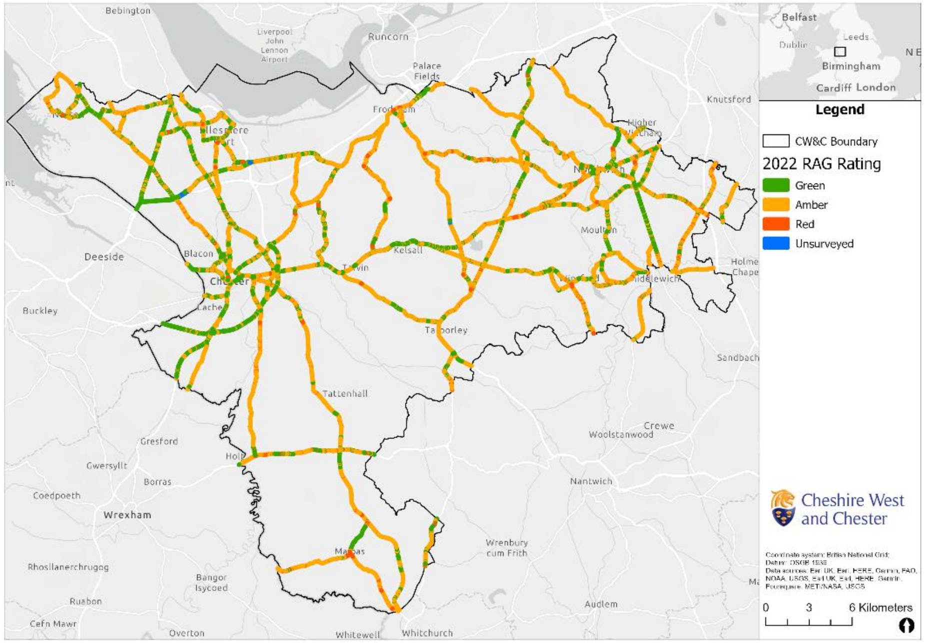


Source: CW&C, 2024

This shows that A-roads are in the best condition, with the highest green rating and lowest amber and red ratings. This reflects their prioritisation in the maintenance schedule due to their strategic highway significance. Conversely, B & C-roads show the lowest level of good condition highway, while unclassified roads show the highest level of poor condition highway.

The distribution of condition ratings across the A and B road network is shown in Map 4.25 below, which indicates a higher proportion of the network rated green in the east and west of the borough compared to the centre.

Map 4.25: Maintenance condition of A- and B-roads in CW&C, 2022



Source: CW&C, 2022

The National Highways & Transport Network (NHT) Survey (2021) indicated that 49% of respondents in CW&C were satisfied with the overall condition of the highways network, compared to the national average of 51%. These survey results also show a decline in satisfaction from 54% in 2015.

In order to arrest the deterioration of the carriageway, an average spend of circa £18.7m per annum over the next 15 years is required to maintain a steady state. The maintenance backlog for carriageways to bring the network into a good state of repair is currently estimated at just over £90M.

For 2024/25, CW&C has an annual maintenance spend of £6.4M. This is split between four categories as shown below in Table 4.10. This is funded through £15-16 million received from the DfT which also covers several other areas including road safety, traffic engineering, streetlights, structures, routine maintenance.

Table 4.10: CW&C maintenance spend 2024/25

Category	Spend
Resurfacing	£3,429,000
Preventative	£2,486,000
Footways	£500,000
Cycleways	£0
Total	**£6,415,000**

Source: CW&C, 2025

The current challenge faced by CW&C is maintaining a steady state condition of the highway carriageway network within a diminishing funding envelope. The CW&C State of the Borough report in 2024 noted that by 2040, 20% of the entire road network will require structural maintenance but this position could worsen depending on investment and periods of extreme weather.

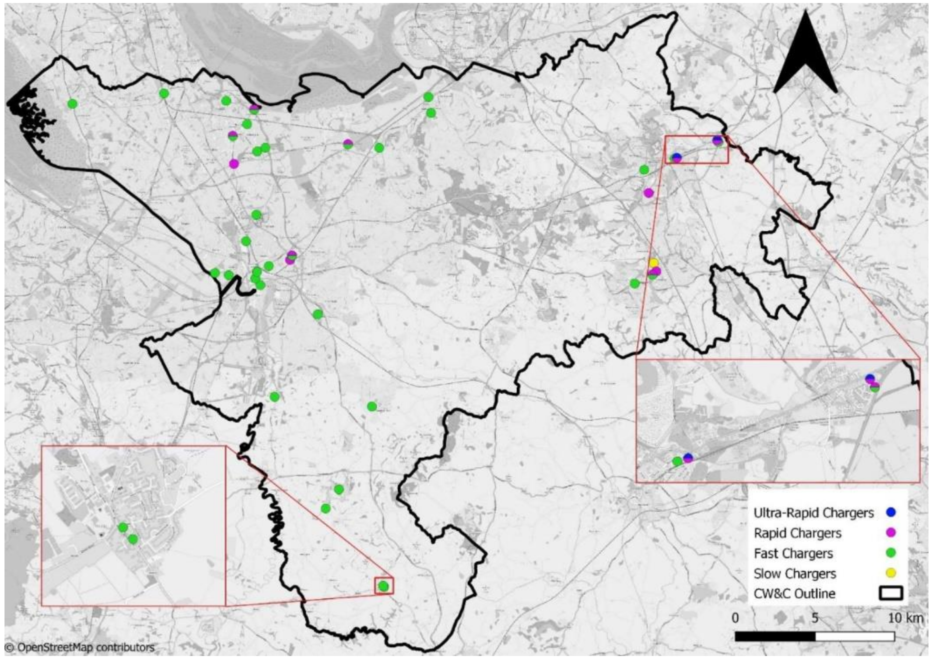
Footways are also graded according to their condition. In 20224, there has been a deterioration in the condition of the network, with a significant increase in ‘red’ condition and a slight reduction in ‘amber’ and ‘green’. 11% of the footway network is expected to require structural maintenance by 2035.

4.6.3.4 Electric vehicle (EV) charging infrastructure strategy

EV ownership in Cheshire West and Chester is growing steadily, in line with global trends. The current and projected uptake of EVs by fuel type within CW&C is demonstrated in Section 2.2.7.

However, public EV charging infrastructure (EVCI) in CW&C is currently limited and patchy, with most centred in urban areas and little provision in smaller market towns or more rural areas. The latest national data suggests there are currently 176 public[67] chargers within the borough, as shown in Map 4.26.

Map 4.26: EV charging infrastructure in CW&C



Source: CW&C EV Charging Strategy

The map shows there is less charging infrastructure in central and southern regions of Cheshire West and Chester, with no rapid / ultra-rapid chargers and few fast chargers in operation at the time of writing. This is likely to be due to the rural nature of these areas, which generally have a lower population and more dwellings with off-street parking than urban areas. These factors therefore result in lower demand for charging infrastructure. Furthermore, limited charging infrastructure along key corridors, such as the A41, A49 and A51, reduces the viability of en-route charging.

Future levels of demand for EVCI are currently subject to a high degree of uncertainty, principally focused on uptake of EVs, technological developments and consumer charging behaviours. However, modelling undertaken shows there is a significant gap between current supply and upcoming demand. While the vast majority of EV charging is likely to take place at home overnight, there is likely to be substantial demand for charging at key destinations, including workplaces, and there is a need to accommodate public 'home charging' for households who currently park on-street. There is also a significant role for private charging facilities, such as at workplaces and fleet depots, and CW&C Council can play a key role in leading the way in relation to its own staff and fleet. Currently, 6.75% of the council fleet comprises of electric vehicles.

Regionally, the North West of England is significantly underperforming in terms of the number of charge points per head of population. Within CW&C, there is a particular demand for public rapid and ultra-rapid charge points, with a forecast need of at least circa 300 by 2025 against a current provision of 23. Latest national data suggests CW&C is currently falling behind even regional averages in terms of rapid and ultra-rapid EVCI.

Geographically, early demand for EVs is likely to primarily centre on key urban centres, particularly Chester, Ellesmere Port, Northwich and Winsford. This suggests these locations should be the primary focus for roll-out of EVCI in the short-term. However, as EVs become more widely adopted, and particularly as the second-hand EV market begins to develop, this geographical divide is forecast to become significantly less pronounced, and focus may then shift to providing EVCI in more rural communities where trip

[67] This includes the recently established 21 7kW dual chargers within the New MSCP t Northgate in Chester

lengths tend to be longer, meaning greater reliance on public charging infrastructure.

Highways – key findings

- 50% of roads across the borough are classed as rural, having a speed limit of over 40mph.
- Designated pedestrian areas have been introduced in key centres to enhance access to shops and other local amenities.
- Highway usage had been growing prior to the COVID-19 pandemic, and while recovery has taken place, there has been a change in composition with fewer cars and more LGVs and HGVs due to changing habits such as home-working and online shopping.
- The heaviest traffic flows and congestion is seen on roads around Chester, Ellesmere Port, Northwich and the key strategic routes between them which may worsen in the coming years as a result of population growth and new housing development.
- Improvements to junction technology may provide the opportunity to make journeys for pedestrians and cyclists more seamless.
- There is a need to consider provision of adequate highway maintenance within constrained budgets.
- EV ownership in CW&C is growing steadily and the Council has a robust strategy to ensure the roll out of infrastructure meets demand.

4.7 Parking

The following sub-sections present data collected as part of the strategy in 2016/2017 and note the location-specific findings and recommendations that were proposed. Although several years old now, the strategy remains the most comprehensive audit of the existing parking situation in CW&C undertaken in recent years and the findings and recommendations remain relevant today.

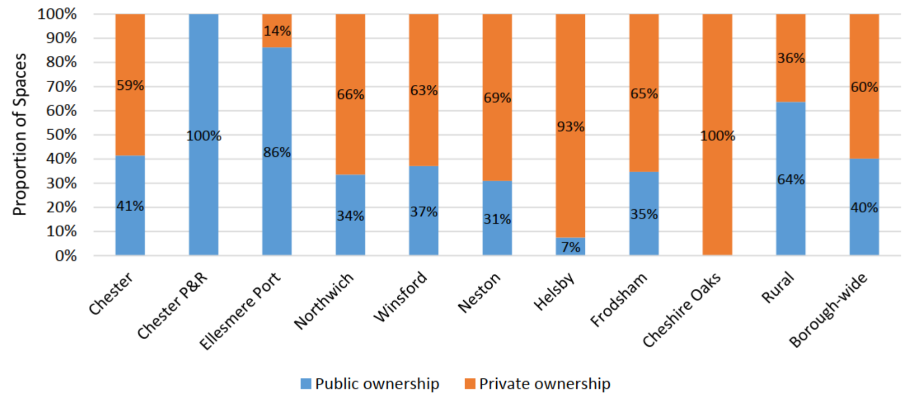
4.7.1 Network

4.7.1.1 Parking ownership

Across CW&C, there are more than 70 publicly owned car parks with a total of around 9,500 spaces, and over 50 privately owned car parks with a total of more than 14,000 spaces.

Chart 4.29 shows the distribution of public and private car park ownership in each locality across the borough.

Chart 4.29: Off-street parking ownership by locality



Source: Cheshire West and Chester Parking Study (2016)

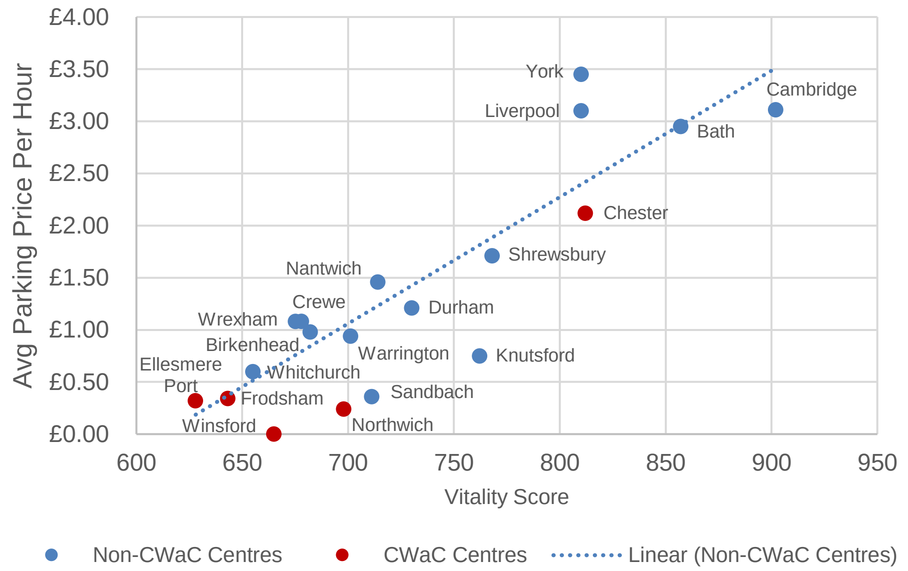
This demonstrates a range of Council ownership levels across localities, averaging out at 40% of all off-street public car parking capacity. The Council own all Chester P&R car parks, and 86% of Ellesmere Port car parking. For most other centres, the proportion owned is less than 40%.

4.7.1.2 Parking controls

At present, charges for off-street parking exist in most publicly-owned car parks in Chester, Ellesmere Port, Northwich and Frodsham. Income from the publicly owned car parks contributes towards the management of demand for parking in these places. In other areas of the borough there are no charges in publicly owned car parks, but charges are applied in a select number of privately-owned off-street car parks.

Chart 4.30 shows, for a range of centres comparable to CW&C centres, average parking prices per hour (measured across the first six hours) and retail centre vitality scores. The vitality scores are as issued by Newmark (a retail property advisory consultancy) and apply to 1,000 retail centres in the UK, taking into account a large range of factors that reflect economic health, including retail spend, population catchment size, retail vacancy rates etc. The actual scores will likely have changed since 2017 due to pandemic effects, but it is assumed that the relative difference between town scores remains largely the same. The average 2024 parking prices are calculated from Parkopedia.

Chart 4.30: Average parking price vs retail centre vitality score



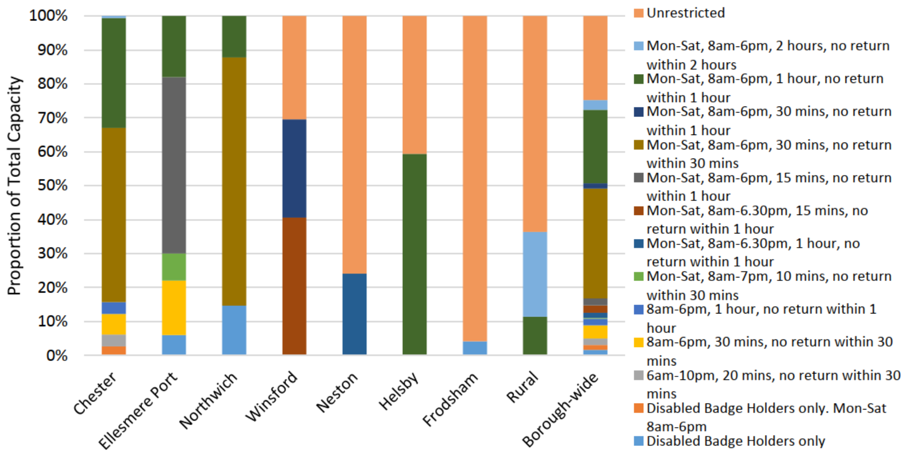
Source: Newmark (2024) / Parkopedia (2024)

This chart shows a clear general relationship between town centre vitality and parking price, where towns with a stronger attraction offer charge higher parking prices to manage increased demand.

The CW&C centres are shown in red, and these mostly show average parking prices which are below average for their vitality levels. This suggests some headroom for increase without harming the relative competitiveness of the centre.

On-street parking is generally free across the borough, albeit with limited waiting restrictions, particularly in Chester and the larger centres. There are a wide variety of time restrictions in place for marked bays, and a large proportion of unrestricted 'free parking' bays particularly in the smaller and more rural areas. Chart 4.31 demonstrates this range, showing the proportion of bays with each type of restriction in each locality of the borough.

Chart 4.31: Distribution of on-street parking controls by locality



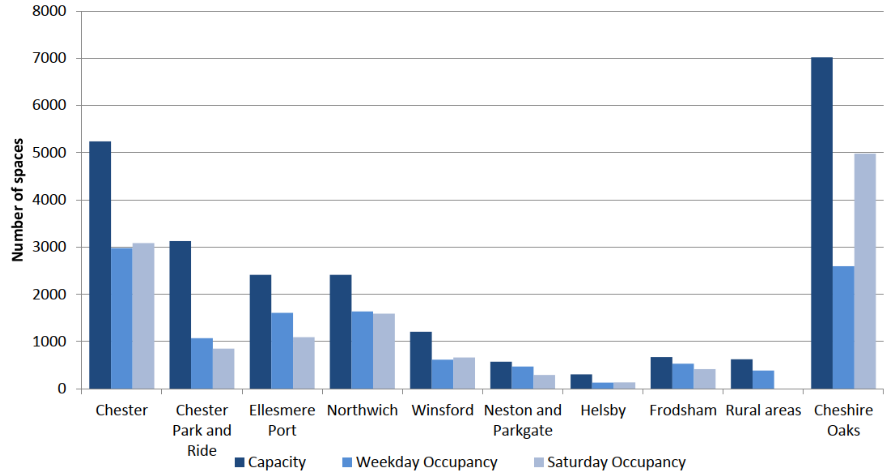
Source: Cheshire West and Chester Parking Study (2016)

4.7.2 Usage

Parking provision within CW&C varies significantly across the borough. In several locations there is a significant mismatch between supply and demand for parking. An example is Ellesmere Port, where the Wellington Road car park is mostly unused whereas Civic Centre can be over-capacity on weekdays.

Chart 4.32 shows the overall capacity and observed occupancy rate of off-street parking provision on a weekday and Saturday for each of the main localities within the borough.

Chart 4.32: Summary of off-street parking capacity and occupancy by locality

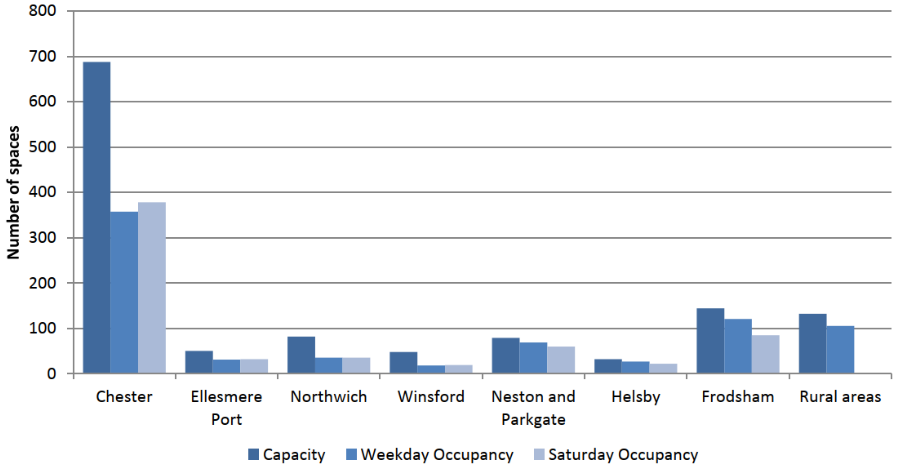


Source: Cheshire West and Chester Parking Study (2016)

Total off-street capacity within the borough is approximately 24,000 spaces and weekday occupancy levels at the time of the surveys varied from 34% at Chester's Park & Ride sites to 82% in Neston and Parkgate. On a Saturday, occupancies tended to be lower ranging from 27% at Chester's Park & Ride sites to 71% at Cheshire Oaks (the location with the largest amount of public off-street parking).

Chart 4.33 shows the same information as above but for on-street parking within the borough.

Chart 4.33: Summary of on-street marked bay parking capacity and occupancy by locality



Source: Cheshire West and Chester Parking Study (2016)

Of the roughly 1,200 marked on-street parking bays in CW&C, more than half are located within Chester. Highest rates of usage were observed in Neston and Parkgate (87% on a weekday, 76% on a Saturday), with the lowest in Winsford, ranging between 38% on a weekday and 40% on a Saturday.

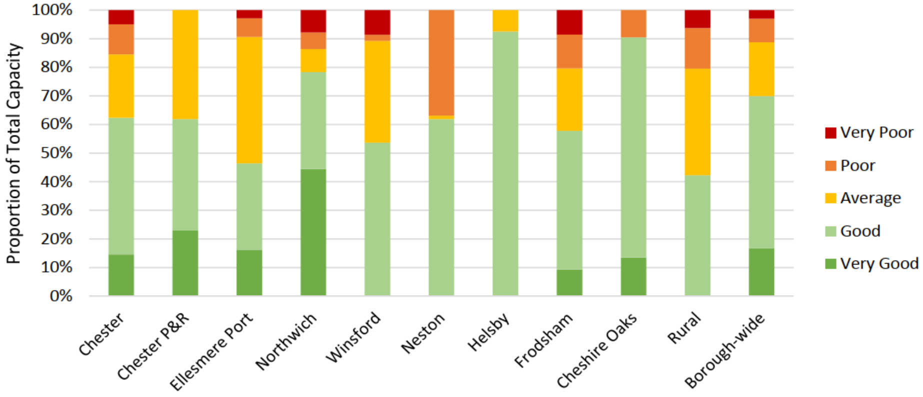
4.7.3 Performance

4.7.3.1 Parking quality

Car parking quality in Cheshire West and Chester is of varying degrees. As shown in Chart 4.34, there are large amounts of good and very good quality parking. However, some of the parking stock in the borough was deemed to be of average, poor or very poor quality and would benefit from quality enhancements.

In smaller areas this poor quality stock is mainly the privately controlled stock. In larger centres such as Chester, Ellesmere Port and Northwich some of CW&C's own parking stock suffers from poor standards of quality including surfacing, lighting, information and security, despite excellent improvement at some locations. Chart 4.34 shows the quality of off-street car parking for each locality, covering both privately and publicly owned car parks.

Chart 4.34: Quality of off-street parking provision by study area

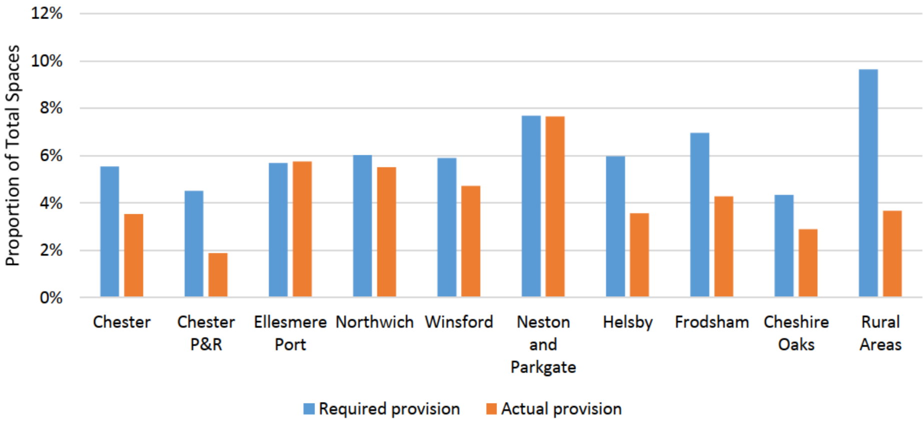


Source: Cheshire West and Chester Parking Study (2016)

4.7.3.2 Disabled parking provision

In 2016, the parking audit compared the level of disabled parking provision with the level that was estimated to be required under national standards. This analysis found that most localities across the borough were under-providing space for blue-badge holders. This is highlighted in Chart 4.35.

Chart 4.35: Required and actual provision of disabled off-street spaces by locality



Source: Cheshire West and Chester Parking Study (2016)

4.7.3.3 Signage and promotion

Directional signage for parking is often sporadic and absent in a number of locations. Signage can be unhelpful and sometimes confusing, by naming car parks rather than describing their use (such as 'Short-Stay' or 'Shoppers'). Other urban centres have signs to direct drivers to car parks. Ellesmere Port lists the facilities alongside car parks to help drivers choose the best car park; in Northwich signs indicate the total capacity of car parks, although they are not always accurate and do not indicate intended length of stay.

In terms of online promotion of parking resources across the borough, the offer between different car park operators within CW&C is quite poorly integrated. Several publicly owned car parks and all of the privately owned facilities are not referenced on the parking pages of the CW&C website, including Ledsham Road in Ellesmere Port, Dene Drive and Winsford Library in Winsford, and Sandy Lane in Chester. In addition, online information regarding spaces and prices of car parks and the number of spaces in Resident's Parking Zones often does not agree with what was found during site visits.

Parking – key findings

- CW&C Council own around 40% of all off-street car parks across the borough.
- There is a positive relationship between town centre vitality and parking price, where towns with a stronger attraction offer charge higher parking prices to manage increased demand.
- Weekday occupancy levels within CW&C off-street car parks vary from 34% at Chester's Park & Ride sites to 82% in Neston and Parkgate.
- There are large amounts of good and very good quality parking. However, some of the parking stock in the borough was deemed to be of average, poor or very poor quality, particularly within privately owned car parks in smaller centres.
- Directional signage for parking is often sporadic and absent in a number of locations.
- There is a lack of integration across different operators of car parks across the borough, making information available online less clear to users

4.8 Freight

4.8.1 Network

4.8.1.1 Highway

As shown in Section 4.6 above, CW&C is interconnected by a number of strategic routes, many radiating from Chester and reaching far beyond the borough. Therefore CW&C has a key role in the movement of road freight traffic both locally and nationally, with important strategic proximity to North Wales and the city regions of Liverpool and Manchester. The A55 provides a strategic link to the Port of Holyhead and international shipping opportunities, while more locally, the M53 and M56 provide west/east freight movements connecting the M6 corridor with key strategic sites in the region. This includes sites such as the Mersey Dee combined economic area and the Atlantic Gateway corridor between Liverpool and Manchester, as well as providing vital connectivity to Manchester and Liverpool John Lennon Airports.

There are a number of facilities for drivers located within the borough to support road freight movements across the network as described above. These include:

- Chester Motorway Service Area (M56 junction 14), providing 65 parking spaces and cleaning facilities for HGVs
- Formula International Truck stop (M53 Junction 9) at Ellesmere Port, providing 110 parking spaces and cleaning facilities for HGVs

These facilities are provided to the north of the borough adjacent to the motorway network where HGV and LGV flows are highest.

4.8.1.2 Rail

The majority of rail freight that passes through CW&C does so on the West Coast Mainline, passing through the stations of Acton Bridge, Hartford and Winsford on its way between Warrington and Crewe. However, all of the lines that pass through the borough carry at least some freight on a daily basis.

Table 4.11 shows the freight loadings on each of the lines and the daily journeys that pass through sample points on each. These are based on a typical summer Wednesday and on the Working Timetable for Network Rail. Note that it is highly unlikely that all of these services run on any one day, as freight services (unlike passenger services) only run as required. This analysis instead highlights the number of timetabled paths that run on each line and where the origins and destinations of these journeys are on the specific day of the sample.

Table 4.11: Freight path analysis by line – summer Wednesday 2023

Line	Sample point	Number of daily freight paths in each direction	Time of first pass	Time of last pass	Max journeys per hour (both directions)
West Coast Mainline	Winsford	64	00:08 (N'bound)	23:58 (S'bound)	13 (00:00 – 01:00)
Chester - Warrington	Helsby	6	06:28 (W'bound)	18:46 (W'bound)	2 (Multiple hours)
Mid Cheshire Line	Northwich	19	00:38 (W'bound)	22:54 (E'bound)	5 (09:00 – 10:00)
Chester - Crewe	Beeston Castle	4	05:55 (W'bound)	21:19 (E'bound)	1 (Multiple hours)
Chester - Wrexham	Wrexham General	5	04:57 (N'bound)	21:20 (S'bound)	2 (Multiple hours)
North Wales Coast Line	Shotton	4	09:30 (W'bound)	20:44 (E'bound)	2 (Multiple hours
Borderlands Line	Bidston	1	06:08 (N'bound)	06:16 (S'bound)	2 (06:00 – 07:00

Source: RealTime Trains https://www.realtimetrains.co.uk/ (Accessed July 2023)

Nearly all rail freight operating within CW&C passes through, as there are very few rail freight terminals in the borough. From the above analysis, only two terminals are identified as the origin or destination for rail freight movements. These are:

- Lostock Works – used for aggregate movements travelling to and from Arpley Sidings in Warrington once per day in 1 direction, and
- Ince and Elton Sidings – used for aggregate freight travelling to and from Crewe Basford Hall once per day in each direction. Further rail services may be introduced on this line in the future with the development of a rail head for the Protos scheme granted planning permission in 2020

4.8.1.3 Sea

CW&C's location near major ports, such as the Port of Liverpool and the Port of Holyhead, offers convenient access to international shipping routes.

The Port of Liverpool is one of the major deep-sea terminal ports in the UK, and its proximity to CW&C makes it a crucial gateway for businesses in the area to access global markets through maritime trade. The M53 provides a strategic connection between the borough to the Port via the Kingsway Tunnel under the River Mersey. Further connectivity between CW&C and the Port of Liverpool is provided via the Mersey Gateway Bridge and the A562 route into Liverpool City Centre from Halton.

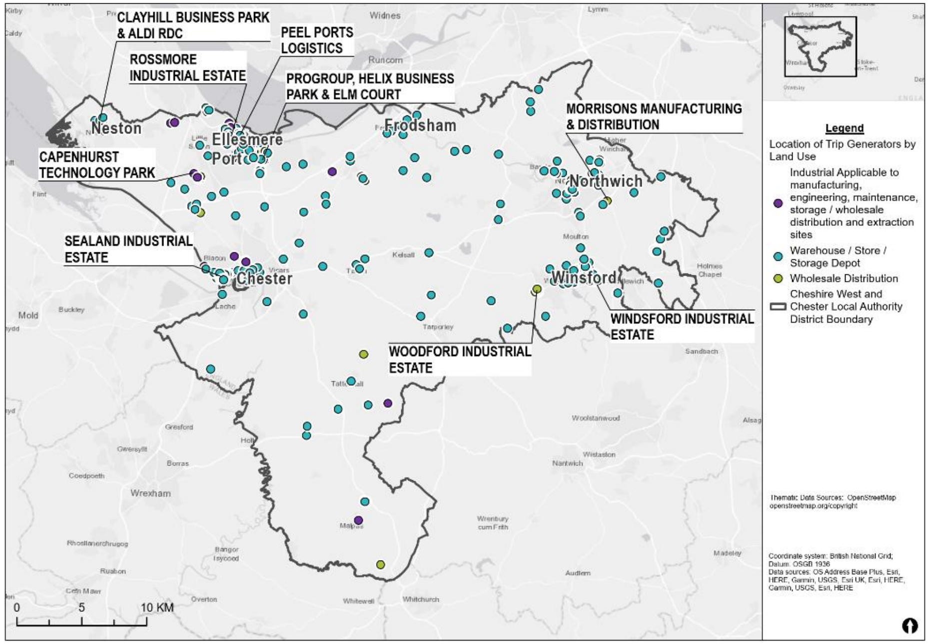
More locally to CW&C, Ellesmere Port is connected to the Royal Seaforth Container Terminal and the Liverpool2 Container Terminal based at the Port of Liverpool through weekly container barge shipments. Ellesmere Port is served by the M53 for north-south movements into the borough and M56 for east-west movements, linking more strategically with the M6 further east.

The Manchester Ship Canal passes through the north of the borough, closely following the Mersey Estuary through Ellesmere Port to Eastham Ferry. Ellesmere Port is the location of one of the five terminals on the Manchester Ship Canal, handling bulks and project cargo. Peel Ports predict that the number of containers transported along the canal could increase from 8,000 carried in 2010 to 100,000 by 2030. The Protos scheme includes the development of a canal berth which can be used to transport products to and from the site. Expansion of operations on the Manchester Ship Canal and at Ellesmere Port also provides the potential for wharfage.

4.8.1.4 Core freight generators

Map 4.27 illustrates where the key generators of freight movements across the borough are located. The highest concentration of key generators is around Ellesmere Port, with several key generators such as Peel Ports logistics, and Rossmore Industrial Estate. Smaller concentrations exist in the remaining key centres: Chester, Winsford, Northwich and Frodsham.

Map 4.27: Core freight generators within CW&C



Source: OS Address Base Plus

The map indicates a greater number of generators, in particular warehouses/stores/storage depots, in the northern half of the borough. A small number of industrial generators are found primarily in the north west of the borough surrounding Ellesmere Port and Chester. The number of existing core freight generators provides the opportunity to further develop the freight network, aided by multi-modal transport opportunities, attracting further businesses and generators to the borough.

There are also a number of storage and distribution centres within more rural parts of the borough, although flows of LGVs and HGVs are lower through rural areas (see Section 4.9.2). The impact of these vehicles on road safety and highway asset condition needs to be considered.

4.8.2 Usage

Annual tonnage data for CW&C has been derived by Transport for the North (TfN) from the Great Britain Freight Model (GBFM) outputs. The tonnage outputs consist of:

- All commodities: bulk and domestic road tonnes
- European non-bulk imported and exported road tonnes
- Non-European non-bulk imported and exported tonnes
- Rail tonnes

Table 4.12 below outlines the annual road and rail tonnage within, to and from CW&C.

Table 4.12: Annual rail and road tonnage within CW&C, 2018

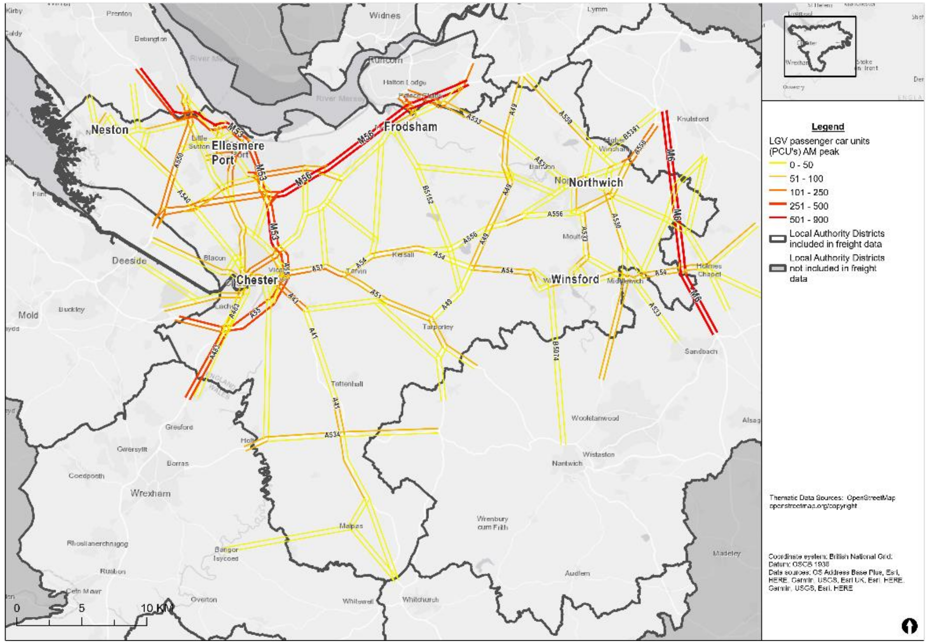
Mode and geography	2018 annual tonnage
Road: Origin and Destination within CW&C	92,577,435
Road: Origin within CW&C and destination outside CW&C	14,625,906
Road: Destination within CW&C and origin outside CW&C	11,093,103
Rail: Destination within CW&C and origin outside CW&C	594,425

Source: Britain Freight Model (GBFM), TfN

Map 4.28 and Map 4.29 illustrate the average flows of LGVs and HGVs across the network within the AM peak period show in Passenger Car Units (PCUs). These flows are derived from TfN's NoHAM model, using a base year of 2018. This shows the demand of LGVs and HGVs within, to/from and through CW&C within the morning peak hour.

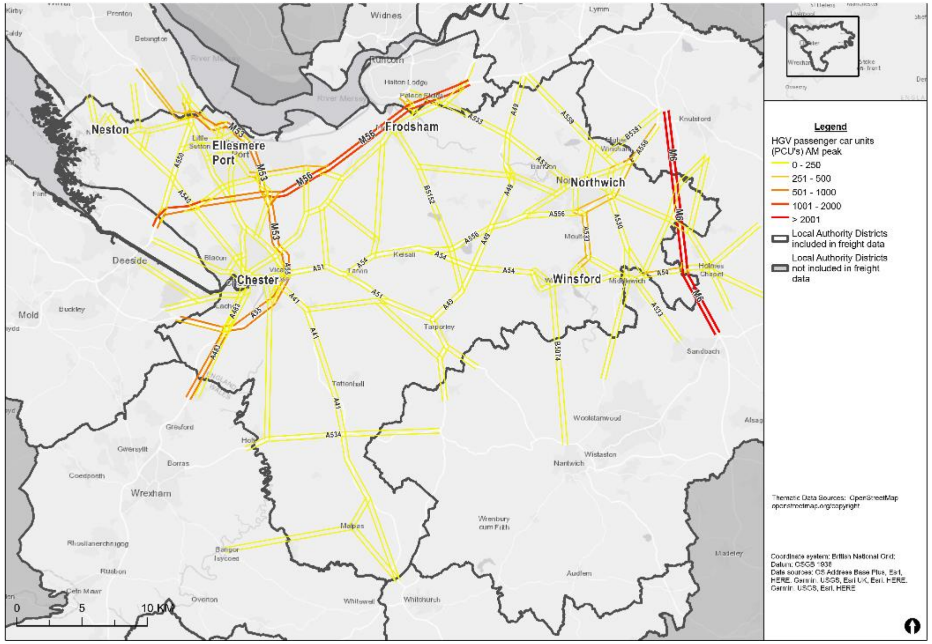
This shows the highest flow of both HGV's and LGV's across the borough are on the motorway network, including the M6, M53 and M56, as is to be expected due to the key strategic significance of these links for freight movement within the borough and beyond. The A55, A494 and A483 also have high flows of both LGV's and HGV's leading from the motorway network onwards towards North Wales. These routes provide connectivity to the Core Freight generators in and around Chester and Ellesmere Port as shown in Map 4.27. LGV flows above 50 PCU are shown across the key strategic highway network, with particularly high flows on the road network surrounding core freight generators in Ellesmere Port and Chester, and from sites in Winsford and Northwich, such as Woodford Industrial Estate, towards Manchester. Higher HGV flows are also shown between Winsford and Northwich towards Manchester.

Map 4.28: CW&C AM peak average LGV flows 2018



Source: TfN, NoHAM Model, 2018 base year

Map 4.2930: CW&C AM peak average HGV flows 2018



Source: TfN, NoHAM Model, 2018 base year

4.8.3 Performance

As per TfN's Freight and Logistics Strategy, there are three main issues for road, rail and waterborne freight in the wider region: network capacity and capability, terminal availability, and decarbonisation.

Section 4.6.3.1 provides an overview of peak-hour congestion on the strategic road network and the resulting delay for freight movements travelling within and through the borough. The network suffers from congestion in peak times around the key economic centres, most prominently Chester, Ellesmere Port and Northwich. Congestion is particularly prominent on the road network in the west of the borough surrounding and connecting Chester and Ellesmere Port, as shown in Map 4.21, where there is a high proportion of core freight generators, as shown in Map 4.27.

Freight by road accounts for 90% of all tonnage moved in the North, and continuing to improve the network to reduce the issues caused by congestion is seen as an essential short and long-term strategy, in combination with increased modal shift towards alternative freight modes.[68]

Vehicle delay on key strategic roads, using TfN's NoHAM model, indicates delay across several key strategic routes in Northwich and Winsford, as shown in Map 4.22. There are several core freight generators within Northwich and Winsford, such as Woodford Industrial Estate on the outskirts of Winsford where delays on the A54 and B5074 are apparent.

4.8.4 Future freight trends

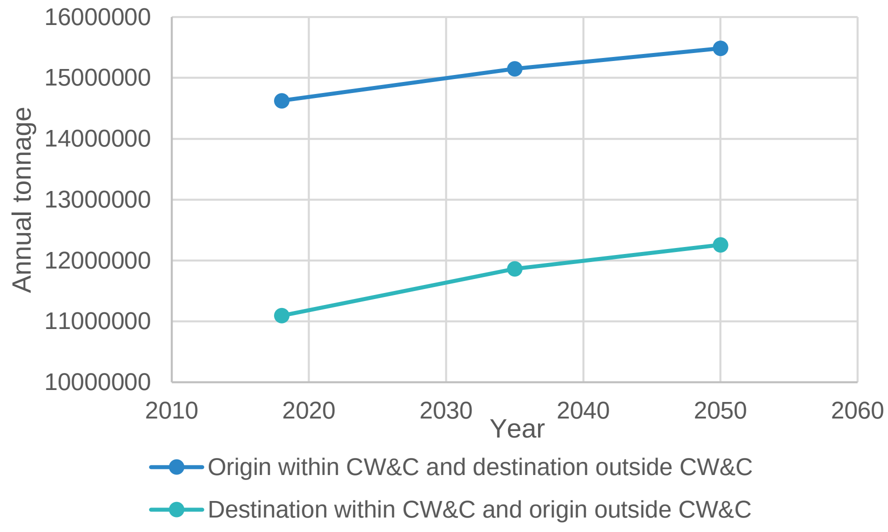
HGV traffic growth is forecast to be lower than other vehicle types, with growth ranging from 5% to 12% by 2050.[69] Nationally, the greatest growth in HGV traffic is expected on motorways where growth by 2050 is forecast to be between 9% and 18%. This trend is reflected locally within CW&C, according to annual tonnage data for CW&C which has been derived by TfN from GBFM outputs, as shown in Chart 4.36. Road freight with an origin/destination outside of the borough is expected to increase slightly between 2018, 2035 and 2050 respectively.

It is noted that whilst growth in HGV traffic has been relatively flat in recent years and is forecast to remain so, there are other factors such as the type of vehicle (articulated or rigid), distribution of freight centres in the UK, and other external factors which continue to affect demand for goods across the country which could have a significant impact on HGV traffic in future years.

[68] TfN Freight and Logistics Strategy 2022

[69] Road Traffic Forecasts, DfT 2018

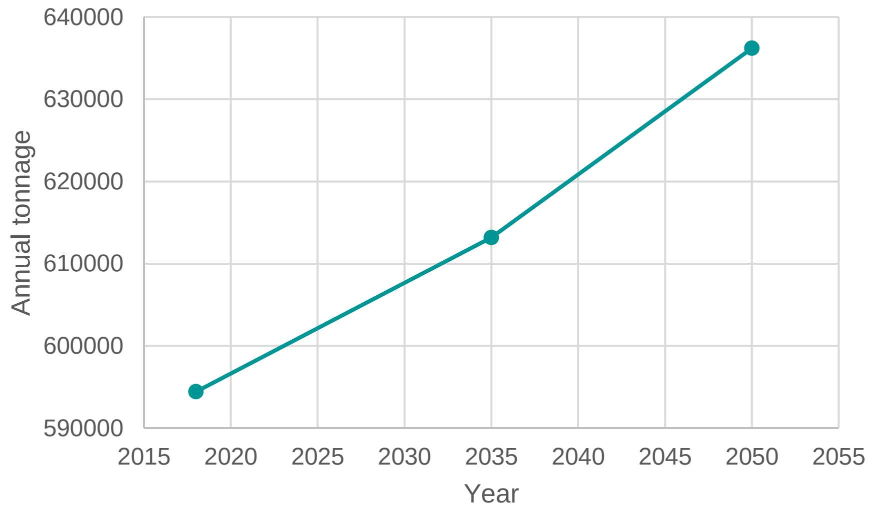
Chart 4.36: Forecast road freight growth in CW&C



Source: TfN/GBFM

Rail freight, where the destination is within CW&C and the origin is outside of the borough, is expected to grow between 2018 and 2050, as shown in Chart 4.37. The forecast growth in rail freight reflects the aspiration for transition within the freight industry away from road freight towards alternative modes which are more efficient, due to fewer congestion delays, and more environmentally sustainable. At both the regional and national level, TfN and the DfT have aspirations for a substantial shift from road to rail freight in recognition of the impact of LGVs and HGVs on carbon emissions. The DfT have identified ten illustrative measures which combined could theoretically lead to emissions savings of around 2.3 million tonnes of CO2 equivalent (MtCO2e) in 2030[70] which could increase rail freight growth beyond that forecast and illustrated in Chart 4.37.

Chart 4.37: Forecast rail freight growth in CW&C



Source: TfN/GBFM

[70] DfT Rail Freight Strategy

Freight – key findings

- CW&C's strategic highway and rail network, and proximity to major ports allows for freight movements regionally, nationally and internationally.
- There are a number of core freight generators within the borough, concentrated around Ellesmere Port and the other key centres, which provide opportunity to further develop the freight network.
- Road freight is dominant within and beyond the borough, accounting for 90% of tonnage moved in the North.
- The highest flows of LGV's and HGV's are concentrated on the motorway network, with high LGV flows on the roads surrounding core freight generators in Ellesmere Port and Chester, and the key strategic road network across the borough.
- Congestion and vehicle delay within the borough is concentrated in key economic centres and thus is likely to have an impact on freight movement to/from surrounding core freight generators.
- Road freight is expected to remain relatively stable within the borough between 2018, 2035 and 2050, while rail freight is expected to increase more significantly in line with national trends, resulting in a sustainable growth in overall freight movements.

4.9 Future trends

In order to account for potential uncertainty, central government, regional transport bodies and local authorities forecast growth under a number of scenarios to explore the impact on the future travel patterns of people, businesses and goods. This, in turn, informs the potential solutions required and policy levers to appropriately cater for future demand.

The National Trip End Model (NTEM) forecast is a tool used to predict the future demand for travel in England and Wales. It has a core growth scenario based on a number of factors and a number of other scenarios, which are based on different uncertainty assumptions about the future. These scenarios are:

- **Core scenario** – considers a constant moderate growth in population, employment and GDP.
- **High Economy scenario** – considers higher rates of population, employment, and GDP growth
- **Low Economy scenario** – considers lower rates of population, employment, and GDP growth
- **Regional scenario** – considers higher relative growth of population, employment, and GDP growth outside London, the South East and East of England
- **Behavioural scenario** – considers increased flexibility of working and online shopping, a reduction of licence holdings rates amongst the younger population cohort and changes in trip rates

It is noted that NTEM forecasts are not without their limitations. They are based on a number of assumptions, and these assumptions may not be accurate. Additionally, NTEM forecasts are only a prediction, and the actual demand for travel may be different.

Limitations of the NTEM Core Scenario are:

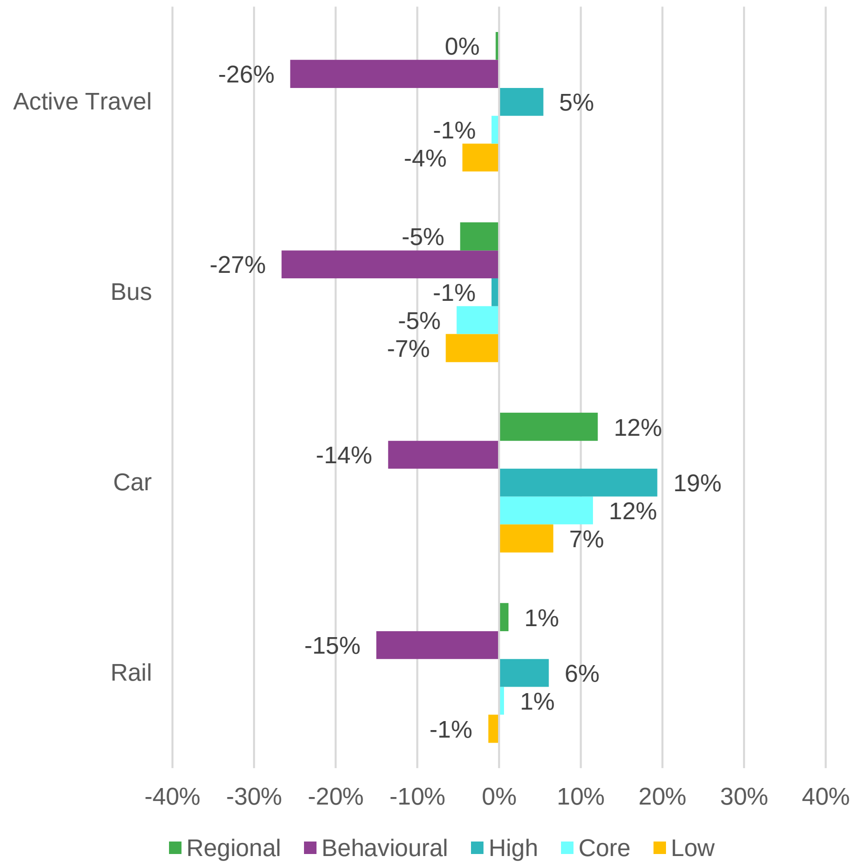
- It does not take into account the impact of new technologies, such as autonomous vehicles or ride-hailing services
- It does not take into account the impact of changes in land use, such as the development of new housing or commercial areas
- It does not take into account the impact of climate change, such as the effects of extreme weather events on travel demand

These limitations should be kept in mind when interpreting the NTEM Core Scenario. However, the forecast still provides a valuable starting point for understanding the future demand for travel in England and Wales, and is a valuable tool for planning for future transport demand.

For each NTEM scenario, Chart 4.38 illustrates the growth in 24-hour average weekday trips by mode between 2018 and 2040. For each mode this shows:

- **Active travel:** the biggest increase in active mode trips (~10%) is seen within the High Economy scenario, where growth is likely a result in increased population and the need to travel to work. Active travel trips are seen to decrease slightly by 2040 within the Core Scenario, and reduce by around 15% within the Behavioural Scenario due to the reduced need to travel.
- **Bus:** the number of trips undertaken by bus within CW&C is seen to decrease by 2040 within all forecast scenarios. Reduction of bus use within the Core Scenario is a likely reflection on the declining trends seen in recent years (See Section 4.3.3), emphasising the need for policy and intervention to increase the use of this important sustainable mode.
- **Car:** car use is seen to increase by 2040 across all scenarios, with the exception of the Behavioural Scenario where the need for travel is reduced as a whole. Although there is no distinction within the NTEM between fuel types (i.e. petrol/diesel vs EV's), the impact of this potential growth in car use needs to be mitigated by transport policy in order to ensure carbon reduction targets can be achieved across CW&C and the wider UK.
- **Rail:** Unlike forecasts for other sustainable modes, rail trips are projected to increase in a number of scenarios, with the greatest increase seen within the High Scenario. However, this still falls below the increase in forecast car trips by 2040**,** meaning further investment and policy is likely required in order to make this an attractive alternative.

Chart 4.38: NTEM Trip Growth 2018-2040, by mode and by scenario



Source: TfN-NTEM Subsets provided to CW&C

4.10 Delivering efficient networks – summary

CW&C IS SERVED BY AROUND **50 BUS ROUTES**. SPARSE RURAL COVERAGE, AND **NO WEEKDAY AM** CONNECTION BETWEEN EAST AND WEST SIDES OF THE BOROUGH

AROUND **86%** OF CW&C BUS SERVICES RUN ON-TIME, LOWER THAN THE REGIONAL AVERAGE

CAR AND TAXI **MILES** IN CW&C GREW BY **6%** BETWEEN 2009 AND 2019

ANNUAL **VEHICLE MILEAGE** ON CW&C ROADS DROPPED **23%** IN 2020, RECOVERING TO **3%** BELOW 2019 LEVELS IN 2023

TRAVEL TO WORK DATA (2021) SUGGESTS **3%** AND **11%** OF CW&C RESIDENTS **CYCLE AND WALK** TO WORK RESPECTIVELY

RAIL PATRONAGE IN 2023 WAS ABOUT **7%** BELOW PRE-COVID LEVELS

THE PROPORTION OF ADULTS WALKING AT LEAST ONCE PER MONTH IN CW&C IS AROUND **2% HIGHER** THAN THE NORTHWEST

CAR TRANSPORT ACCOUNTS FOR **19%** OF THE BOROUGH'S TOTAL EMISSIONS

CAR USE IS FORECAST TO RISE **12% BY 2040** IN CW&C UNDER THE CORE GROWTH SCENARIO

THE CW&C BSIP SETS OUT ASPIRATIONS FOR **12%** GROWTH IN PASSENGERS (**10.4 MILLION** PASSENGERS) BY 2029/30 BUT IS CURRENTLY UNFUNDED

HGV TRAFFIC GROWTH IS FORECAST TO BE LOWER THAN OTHER VEHICLE TYPES, WITH GROWTH RANGING FROM **5%** TO **12%** BY 2050

THERE ARE CURRENTLY **176 PUBLIC EV CHARGERS** WITHIN CW&C.
FORECAST NEED TO GROW PUBLIC RAPID CHARGE POINTS BY CIRCA **300** BY 2025 AGAINST A CURRENT PROVISION OF 23

OVERALL **DECLINE IN BUS USAGE** AS RESULT OF SERVICE CUTS AND LESS PATRONAGE IN THE BOROUGH OVER THE LAST FEW YEARS LEADING TO AN UNSTABLE NETWORK

RAIL PASSENGERS IN CHESHIRE WEST AND CHESTER **DECLINED 32%** BETWEEN 2019-2020

WHAT DOES THIS MEAN FOR CW&C LTP4?

Levels of walking and cycling across the borough compare favourably against the national average. However, socio economic data presented in Section 2.2 highlights lower levels of physical activity than across England, higher levels of obesity and lower than average Healthy Life Expectancy for a number of wards across the borough. Current levels of walking and cycling among residents can therefore be improved upon for both leisure and commuting purposes to not only increase local accessibility and maximise use of existing assets, but to also improve health and wellbeing of the borough's communities.

Accessibility analysis presented in Section 2.3 highlights areas with the greatest potential to encourage uptake of active modes, with the highest levels of physical access to amenities seen around the key centres of Chester, Ellesmere Port, Northwich and Winsford, as well as local centres such as Frodsham, Neston and Helsby. These areas have a better coverage of amenity types and more extensive pedestrian networks, providing good opportunities to increase levels of walking amongst residents. The successful e-scooter trial within Chester, and relatively flat nature of the majority of the borough, also presents further opportunity to encourage greater levels of cycling and use of micro-modes for leisure and access to opportunity.

Buses provide a relatively good level of service around Chester and Ellesmere Port during the daytime, though less so in the early mornings and late evenings, while the network becomes more fragmented with much sparser services to the east where urban car usage is highest (see Section 2.4.2). Despite some recovery in bus patronage post-pandemic, bus usage across CW&C is also declining at a faster rate than seen across the rest of the UK. The BSIP sets out aspirations for transformational change across the network, but no funding is currently secured to support delivery. Addressing the current gaps in the network and increasing the attractiveness of services will be key to supporting better access to areas of opportunity for residents in the east of the borough (particularly those most at risk from social exclusion and currently experiencing socio-economic challenges), as well as supporting cross border commuter patterns (see section 3.5.2) and increasing accessibility of urban centres. Park & Ride provides a good opportunity to reduce car trips into urban centres where car use is currently higher than average. However, current Park & Ride sites currently struggle to compete with city centre parking and usage has been declining in recent years. There is therefore an opportunity to explore how the role of Park & Ride within the borough can be maximised to support access to key centres and transport hubs, including as part of a wider parking policy review.

Rail patronage is generally recovering well post COVID-19, but still makes up only a small portion of mode shares for trips starting/ending in CW&C. The key urban centres, and a number of more rural settlements to the north of the borough, are relatively well served by rail in relation to proximity to the nearest station. However, improved accessibility to rail stations by sustainable modes needs to be considered to further increase use and better connect rail services to key residential areas and areas of economic activity.

Congestion is a key issue on routes into Chester, Northwich and industrial areas around Ellesmere Port, impacting access to opportunity and freight movements, and further emphasising the need for reduced car travel into urban areas and opportunities for more sustainable freight.

Future traffic will exacerbate issues of congestion in the future across the borough, further impacting the network and the environment if no action is taken to provide sustainable alternatives. In addition to congestion, the condition of highway assets and ongoing maintenance within constrained funding sources is a key highways issue within CW&C, impacting the quality of the network for all users and in some cases limiting opportunity for active travel.

The provision and quality of parking across the borough varies significantly, with a lack of coherent directional signage and available information online reducing accessibility for users and visitors. Parking tariffs within key centres across the borough are lower than comparable urban centres. There is evidence to suggest a positive relationship between town centre vitality and parking price, where towns with a stronger attraction offer charge higher parking prices to manage increased demand. Parking management within town centres will therefore be a key consideration to address challenges associated with town cenre vitality outlined in section 3.3.4.

5 Protecting environments

5.1 Introduction

CW&C has a rich natural and cultural environment including numerous international, national and local protected ecological areas and heritage assets and sites of local importance. The Borough has declared a climate emergency and set a target for CW&C Council to be carbon neutral by 2030 and the borough, as a whole, to be carbon neutral by 2045. Transport has a key role to play in protecting natural and heritage sites and supporting nature recovery through reducing transport related emissions and pollution. This section presents the context for the natural, community and built environment within the CW&C borough.

5.2 Natural environment

5.2.1 Climate change

5.2.1.1 Current climate

The current climate baseline has been obtained from the Met Office UK Climate Projections (UKCP18) observational data for the North West England region where CW&C is located[71].

Current observations show that the UK climate is changing. For North West England, observations show that between 1981-2000 and 2001-2020, annual mean temperatures have increased by 0.54°C, mean winter temperatures have increased by 0.48°C and summer mean temperatures have increased by 0.49°C. The observed changes between the periods of 1981-2000 and 2001-2020 indicate that increases in mean annual, summer and winter precipitation have occurred. Annual mean precipitation has increased by 4%, winter by 5% and summer by 24%.Alongside observed increases in average temperatures, there is also evidence of increases in extreme climate events. Increases in extreme maximum summer temperatures are reflected by the number of record extreme monthly temperature records being set in the UK in the most recent decade[72]. Heatwaves are also becoming more common and extreme with the Met Office issuing their first ever red warning for heat in the lead up to the summer 2022 heatwaves.

Although temperatures are increasing and are projected to increase into the future (see Section 5.2.1.2), cold weather does and will still occur with periods of low temperatures, snow and ice. However, UK observations show that there have been 5% fewer days of both air and ground frost in the most recent decade (2012-2021) compared to the average between 1991-2000, and this has been 21% and 18% fewer days respectively compared to the 1961-1990 average[73].

5.2.1.2 Future climate

Climate projections have been obtained for UKCP18 to outline what the future climate may look like in North West England. The temperature and precipitation projections for the 2090s[74] (2080-2099) are presented in Table 5.1 for the high emissions scenario (Representative Concentration Pathway 8.5 (RCP8.5)) under the 50th percentile[75]. The baseline period 1981-2000 was

[71] Met Office (2018). UK Climate Projections (UKCP18) Interface. Available at: Welcome to UKCP (metoffice.gov.uk)

[72] CCC (2021). CCRA3 – Regional Summary for England. Available at: https://www.ukclimaterisk.org/wp-content/uploads/2021/06/CCRA-Evidence-Report-England-Summary-Final.pdf

[73] Kendon, M et al. (2022). State of the UK Climate 2021. Available at: https://rmets.onlinelibrary.wiley.com/doi/10.1002/joc.7787

[74] The 2090s have been selected at this stage as it is assumed that the transport assets design life will cover this period.

[75] The UKCP18 projections are probabilistic. The central estimate, representing ‘as likely as not’ probability of change (50th percentile), has been selected.

selected and seasonal averages are presented to include summer (June, July, August) and winter (December, January, February) months.

Table 5.1: UKCP18 temperature and precipitation projections for North West England (2090s, RCP8.5, 1981-2000)

Parameter	Winter	Summer
Mean temperature change	3.1°C	4.8°C
Maximum temperature change	3.0°C	5.3°C
Minimum temperature change	3.3°C	4.4°C
Mean precipitation change	+26.6%	-32.7%

Source: Met Office UKCP18

Temperatures are projected to increase by the 2090s, with higher increases projected for summer months. Mean temperatures are projected to increase by 3.1°C in winter months and by 4.8°C in summer months from 3.7°C and 14.2°C respectively. Maximum temperatures are projected to increase by 3.0°C and 5.3°C (from 6.3°C and 18.2°C) for summer and winter months respectively. For winter, minimum temperatures are projected to increase by 3.3°C from 1°C and by 4.4°C from 10.3°C in summer months.

Temperature increases can cause effects such as changes to growing seasons, species migration and conditions for pests and diseases. Higher maximum temperatures can cause effects associated with heatwaves such as human health implications, greater demand for water, and effects on the transport network from infrastructure buckling, rutting and melting, potential heat stress for transport users, effects on new landscaping associated with transport projects, and potential earthworks stability issues from dry soils.

The precipitation projections indicate more significant seasonal differences where winter precipitation is projected to increase whereas decreases are projected for summer. Mean precipitation is projected to increase by 26.6% from 11.9mm in winter months, and decrease by 32.7% from 8.6mm during summer months. More precipitation during winter may lead to flooding events affecting transport infrastructure. Less precipitation during the summer may lead to drought conditions.

Evidence of changes to daily extreme precipitation are beginning to emerge[76], and with it is projected that there will be an increase in the intensity and frequency of extreme rainfall occurring throughout the year. In summer months, despite there being an overall projected decrease in precipitation, more intense rainfall events may occur more frequently as summer storms.

Overall, the climate projections identified for North West England are in line with those identified for the rest of the UK, where we are projected to see hotter, drier summers and warmer, wetter winters. These changes in seasonal averages will also likely be punctuated by more extreme events such as heatwaves, droughts and extreme precipitation. Climate change has the potential to reduce the capacity and efficiency of some existing infrastructure[77] (including highways, and railways), this may include:

- Railway tracks buckling and road tarmac rutting and melting during hot weather
- Reduced capability from mechanical and electrical systems which are sensitive to temperature changes
- Passengers using public transport experiencing heat stress
- During periods of drought, increased risk of subsidence affecting infrastructure foundations
- During periods of extreme precipitation, the urban drainage capacity may exceed capacity resulting in urban flooding affecting transport infrastructure

[76] CCC (2021). CCRA3 – Regional Summary for England.

[77] UKRI (2015) – Infrastructure Climate Change Impacts. 091221-NERC-LWEC-InfrastructureClimateChangeImpacts-ReportCard2016.pdf (ukri.org)

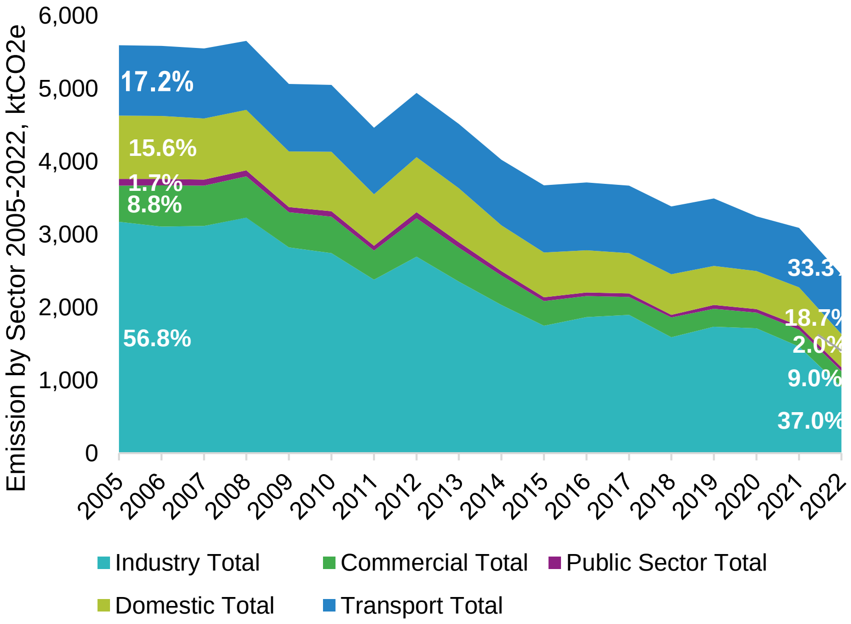
5.2.2 Carbon

CW&C Council declared in May 2019 that the borough is in a climate emergency. In response to this, the Council have developed a Climate Emergency Response Plan where they have set a target for CW&C Council to be carbon neutral by 2030 and the borough, as a whole, to be carbon neutral by 2045. It is recognised that this will be a challenge given the borough is the fourth highest emitter of all local authorities in the UK as a result of the industry present in the borough[78].

In 2021, the total greenhouse gas (GHG) emissions for the borough are reported as approximately 4,230 kilo tonnes of carbon dioxide equivalent ($ktCO_2e$)[79]. This has decreased by 38% compared to 2005 levels. Transport is the second highest emitter, accounting for 20% of total emissions in 2021, following industry which was responsible for 43%.

Chart 5.1 illustrates CW&C's total carbon emissions annually from 2005 to 2019. The coloured regions show the proportion of emissions across industrial, commercial, public, domestic, and transport sectors. The significant fall since 2005 has been driven by reductions in commercial emissions. This sector now accounts for only 8% of total CO_2 emissions respectively. In comparison, the transport sector has also witnessed a reduction in its absolute contribution to emissions throughout CW&C, but the sector has witnessed the largest increase in its share of overall emissions (17% in 2005 to 24% in 2021).

Chart 5.1: Historic emissions by sector 2005-2022, CW&C, ktCO2



Source: Department for Business, Energy & Industrial Strategy

The majority of the transport related emissions are from road transport as shown in Table 5.2.

[78] CW&C Climate Emergency Response Plan (undated). Available at: 1fda32_ed13dbc05f4e4a1487fa98aa6f5ec332.pdf (westcheshireclimateplan.co.uk)

[79] Department for Energy Security and Net Zero (2023). UK local authority and regional greenhouse gas emissions national statistics: 2005-2021. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1166194/2005-21-uk-local-authority-ghg-emissions.xlsx

Table 5.2: CW&C transport related emissions (2022)

Transport mode	$ktCO_2e$	Percentage of total transport emissions
Road Transport (A roads)	304	37%
Road Transport (Motorways)	268	33%
Road Transport (Minor roads)	177	22%
Diesel Railways	11	1%
Transport 'Other'	55	7%

Source: Department for Energy Security and Net Zero

The Cheshire West and Chester Climate Emergency Response Plan highlights that a significant change is needed in the way people travel in order to achieve the Council's carbon neutrality target. Currently, 74% of employed residents travel to work by car, with 15% of residents commuting out of the CW&C region. 40% of households own more than one car, and within the Chester urban area, fewer than 10% of journeys to work were undertaken on public transport.[80]

The Quantified Carbon Reduction (QCR) tool produced by Transport for the North (TfN) is a dashboard that is designed for local authorities to better understand GHG emissions arising from vehicles within their boundaries. It is understood that this tool is intended to provide assistance to Local Authorities to help them meet forthcoming requirements on Quantified Carbon Assesments for Local Transport Plans (LTPs). The QCR tool outlines six scenarios based on a business as usual (BAU) uptake of electric vehicles (EVs) versus an accerated uptake of EVs. The Common Analytical Scenario (CAS) has a core, high, and low demand scenario for a BAU and an accelerated EV uptake approach.

The data presented in Table 5.2 is provided by the Department for Energy Security and Net Zero, and relates to the UK local authority and regional GHG emissions for a variety of sectors/industries, whereas the data contained within the QCR are modelled scenarios from the TfN's Highway Assignment model. The information outlined below has been sourced from the QCR tool.

Table 5.3 below shows the reductions in GHG emissions for the CAS Core scenario (i.e. the median demand) versus the accelerated uptake of electric vehicles (EVs) (with demand maintaining the same). The table also shows the reductions in GHG emissions for the CAS High scenario (i.e. increased demand) for BAU and accelerated EV uptake.

Table 5.3: GHG emissions for core and high scenarios for BAU and accelerated EV uptake

Year	CAS Core scenario – BAU (tCO_2e)	CAS Core scenario - Accelerated EV uptake (tCO_2e)	CAS High scenario (tCO_2e)	CAS High scenario - Accelerated EV uptake (tCO_2e)
2018	612.25	612.25	612.25	612.25
2045	554.87	62.19	611.39	68.94
% change	-9%	-90%	-0.1%	-89%

Source: TfN QCR tool

Battery electric vehicles (BEVs) are not anticipated to outnumber petrol and diesel licenced vehicles until 2035 and 2045 respectively under the BAU CAS Core scenario. By comparison, under the same CAS Core scenario, BEVs are anticipated to outnumber petrol and diesel licences vehicles by 2030 under the accelerated EV uptake scenario. This is shown in Table 5.4 and Table 5.5 below.

[80] CW&C (no date) Cheshire West and Chester Climate Emergency Response Plan. Available at: 1fda32_ed13dbc05f4e4a1487fa98aa6f5ec332.pdf (westcheshireclimateplan.co.uk)

Table 5.4: Licenced vehicles under the BAU CAS Core scenario

Year	Petrol	Diesel	BEV
2018	113255	96564	219
2020	102,846	93,806	2,545
2025	74491	89151	9,356
2030	43947	87,791	17,117
2035	20122	85,793	28,531
2040	6978	70,067	45,919
2045	1903	47,903	67,321
2050	303	31,641	90,481

Source: TfN QCR tool

Table 5.5: Licenced vehicles under the Accelerated EV uptake CAS Core scenario

Year	Petrol	Diesel	BEV
2018	113255	96564	219
2020	102867	103172	2970
2025	78750	93740	22999
2030	47952	66333	68263
2035	21614	36655	123800
2040	6695	16673	177360
2045	1343	6914	219024
2050	111	2635	247825

Source: TfN QCR tool

BEVs are not anticipated to outnumber petrol and diesel licenced vehicles until 2035 and 2045 respectively under the BAU CAS High scenario. By comparison, under the same CAS High scenario, BEVs are anticipated to outnumber petrol and diesel licences vehicles by 2030 under the accelerated EV uptake scenario. This is shown in Table 5.6 and Table 5.7.

Table 5.6: Licenced vehicles under the BAU CAS High scenario

Year	Petrol	Diesel	BEV
2018	113255	96564	219
2020	102846	93806	2545
2025	74491	89151	9356
2030	43947	87791	17117
2035	20122	85793	28531
2040	6978	70067	45919
2045	1903	47903	67321
2050	303	31641	90481

Source: TfN QCR tool

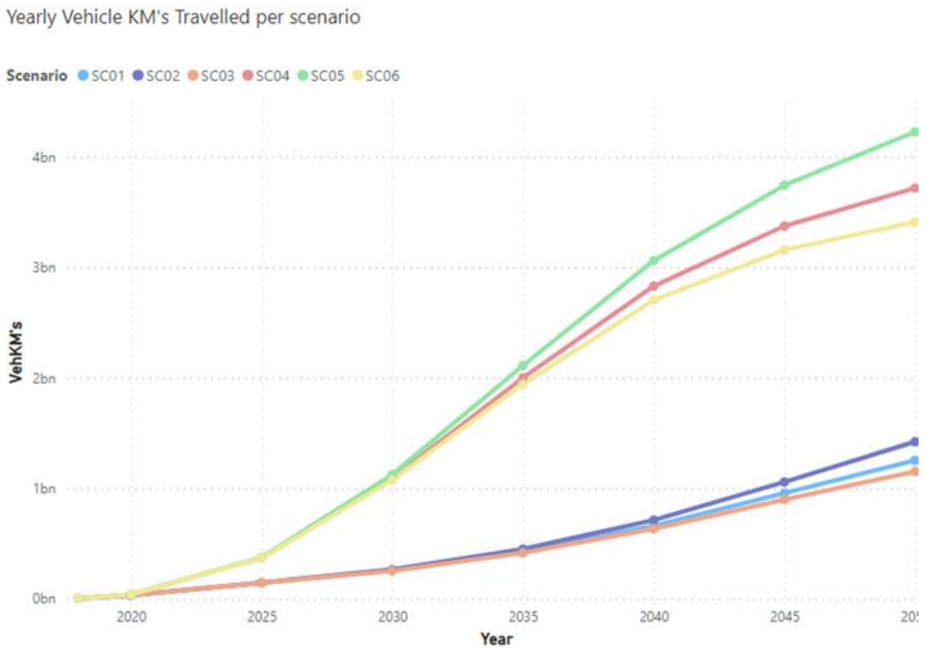
Table 5.7: Licenced vehicles under the Accelerated EV uptake CAS High scenario

Year	Petrol	Diesel	BEV
2018	113255	96564	219
2020	102867	103172	2970
2025	78750	93740	22999
2030	47952	66333	68263
2035	21614	36655	123800
2040	6695	16673	177360
2045	1343	6914	219024
2050	111	2635	247825

Source: TfN QCR tool

Figure 5.1 below visualises how vehicle kilometres (KMs) increase for BEVs for all scenarios as time progresses. Vehicle KMs increase most under the accelerated BEV uptake scenarios.

Figure 5.1: Yearly BEV vehicle kilometres travelled per scenario

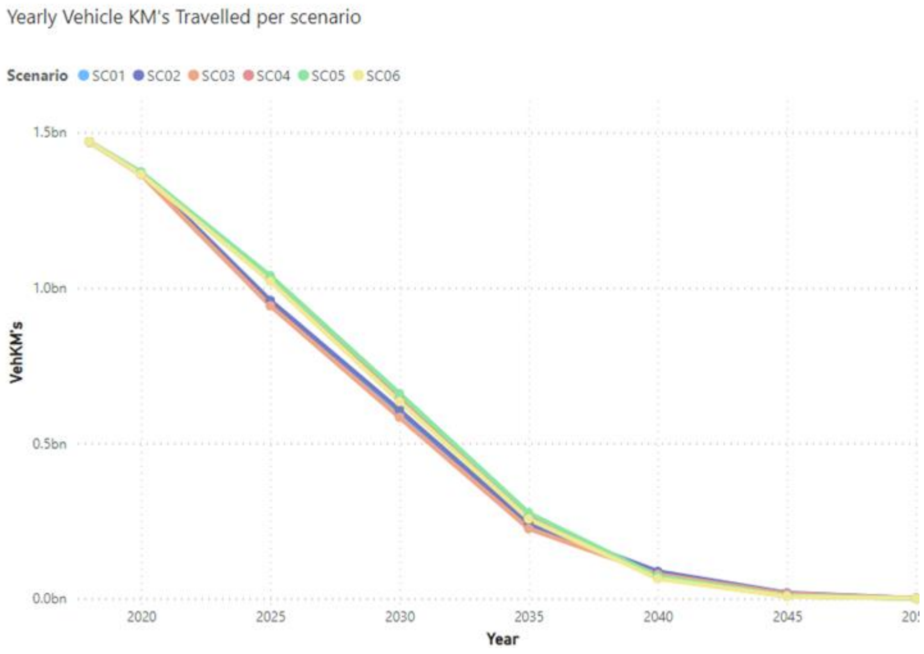


Note: SC01 = median demand with BAU BEV uptake, SC02 = high demand with BAU BEV uptake, SC03 = low demand with BAU BEV uptake, SC04 = median demand with accelerated BEV uptake, SC05 = high demand with accelerated BEV uptake, and SC06 = low demand with accelerated BEV uptake.

Source: TfN QCR tool

Figure 5.2 below visualises how vehicle KMs decrease for petrol vehicles for all scenarios as time progresses. The decline in vehicle KMs is more gradual for all scenarios.

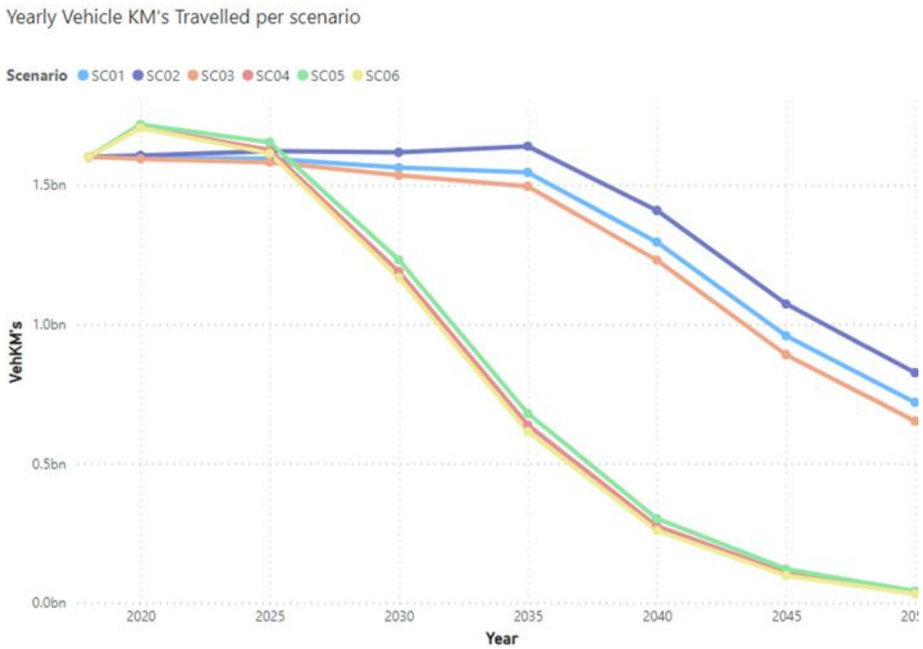
Figure 5.2: Yearly petrol vehicle kilometres travelled per scenario



Source: TfN QCR tool

Figure 5.3 below visualises how vehicle KMs decrease for diesel vehicles for all scenarios as time progresses. Diesel vehicle KMs decrease faster under the accelerated BEV uptake scenarios

Figure 5.3: Yearly diesel vehicle kilometres travelled per scenario

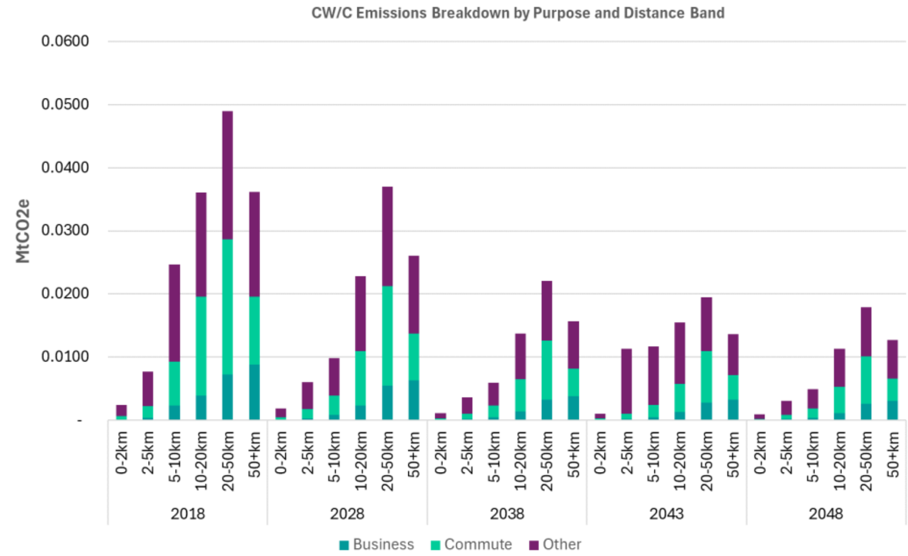


Source: TfN QCR tool

In addition to the TfN QCR tool which presents data above, forecasts specific to CW&C have been developed. Figure 5.4 shows the forecast emissions produced by travel, by purpose and distance from 2018 to 2048. Total emissions for each journey purpose decrease year on year, with emissions associated with commute journeys witnessing the most significant reductions. Although commute emissions decline overall, they still retain a significant proportion of collective emissions; this is a similar case for 'other' journeys.

The category 20-50km remains the highest contributor as a distance category throughout, with 10-20km and 50+km being the next highest, varying in the different future years.

Figure 5.4: Transport emissions by purpose and distance



Source: CW&C Transport Decarbonisation Tool, 2024

The forecast emissions by vehicle type are shown in Table 5.8. By 2050, it is forecast that there will be a significant Table 5.8: Emissions by vehicle typedecline in emissions attributed to cars, largely due to electric vehicle uptake, and to a lesser extent LGVs. Both the absolute amount and proportion of emissions produced by HGVs are expected to increase compared to cars and LGVs.

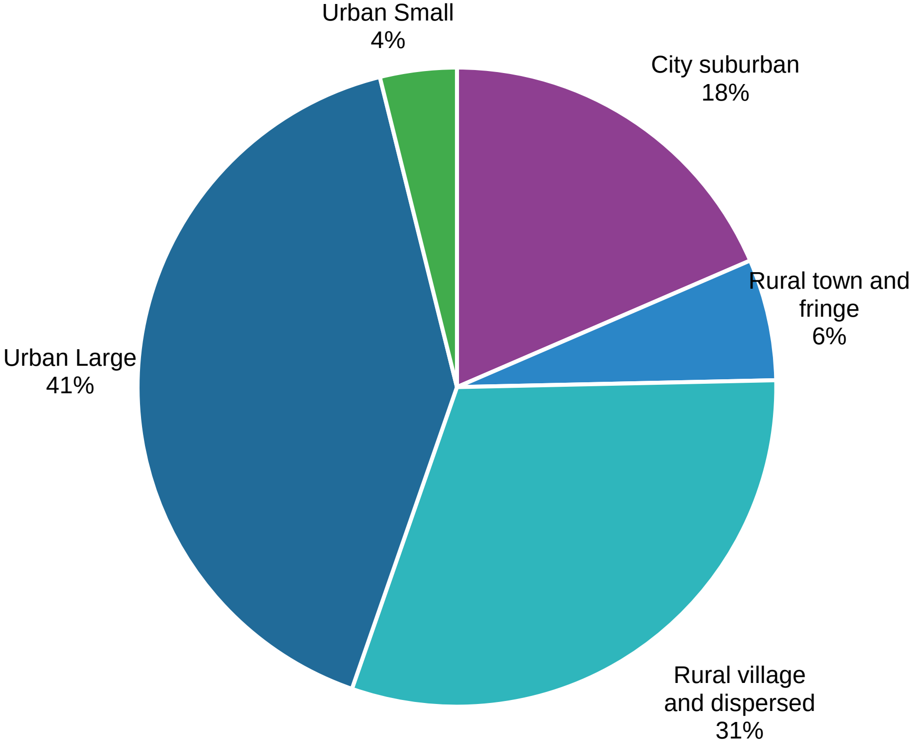
Table 5.8: Emissions by vehicle type (tCO2e) 2019 and 2050

Vehicle Type	2019	2050
Car	134,577	49,556
LGV	26,516	19,618
HGV	47,682	61,884

Source: CW&C Transport Decarbonisation Tool, 2024

Figure 5.5 shows how transport carbon emissions vary according to where the journey originates. Journeys originating in urban areas with large populations (100,00-250,000) are responsible for the highest emission totals, with rural village and dispersed origins second at 30%. Combined, these origins account for over 70% of total emissions, with the rest segmented between city suburbs, small urban areas and the rural town & fringe areas.

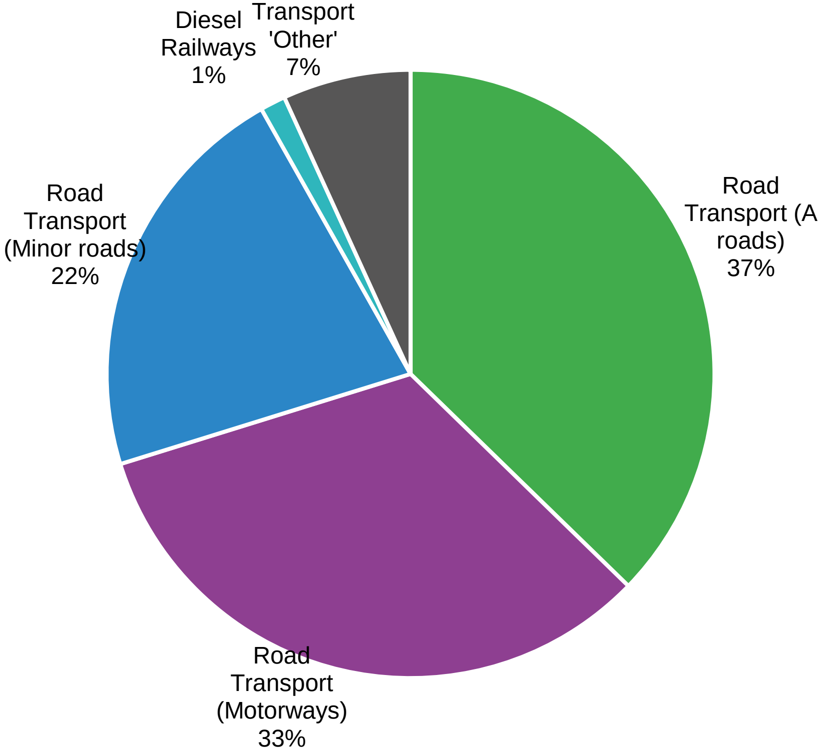
Figure 5.5: Emissions by Origin Location Type (2019)



Source: CW&C Transport Decarbonisation Tool, 2024

Emissions for road transport fell significantly in 2020, as a result of the COVID pandemic, but levels have gradually risen since up to 2022. A roads have consistently accounted for the largest proportion of emissions (37%), followed by motorways (33%) and minor roads (22%).

Figure 5.6: Emissions by transport category (2022)



Source: CW&C Transport Decarbonisation Tool, 2024

5.2.2.1 Future projections

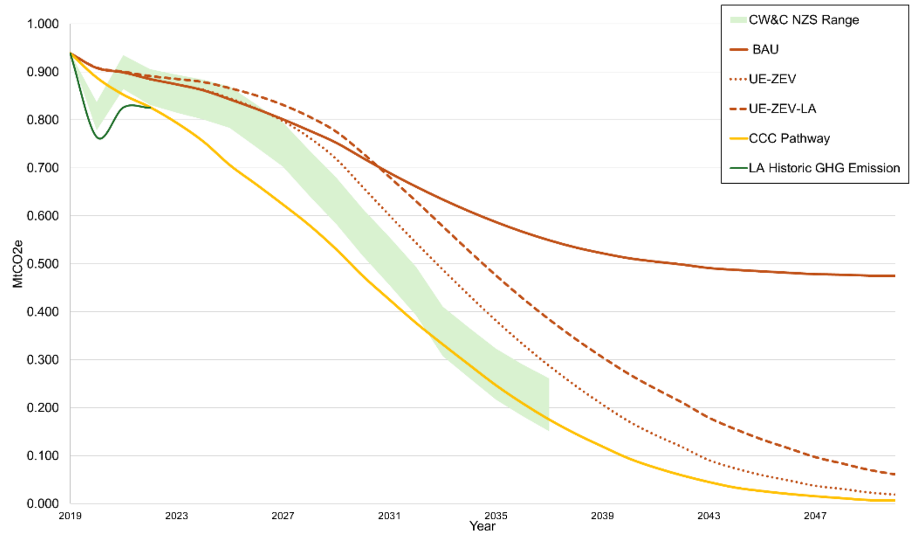
Using the data from Transport for the North, future emissions have been forecast under five different scenarios:

- Baseline Emissions (CW&C BAU)
- Accelerated EV uptake (UE-ZEV)
- Local authority adjusted EV uptake (UE-ZEV-LA)
- Net Zero Strategy Delivery Pathway (NZS)
- Committee on Climate Change Pathway (CCC).

The variations between the scenarios are largely due to different levels of electric vehicle uptake. Forecasted rates of decarbonisation under these five scenarios are shown in Figure 5.7, along with the historic transport emissions estimate for CW&C.

Figure 5.7 indicates that in the year 2045 significant residual emissions remain, from 0.134MtCO2e in the UE-ZEV scenario, up to 0.484 MtCO2e in the BAU scenario. This suggests significant efforts in the future are required to reduce emissions further than the projections indicate at this time.

Figure 5.7: Transport decarbonisation forecasts



Source: CW&C Transport Decarbonisation Tool, 2024

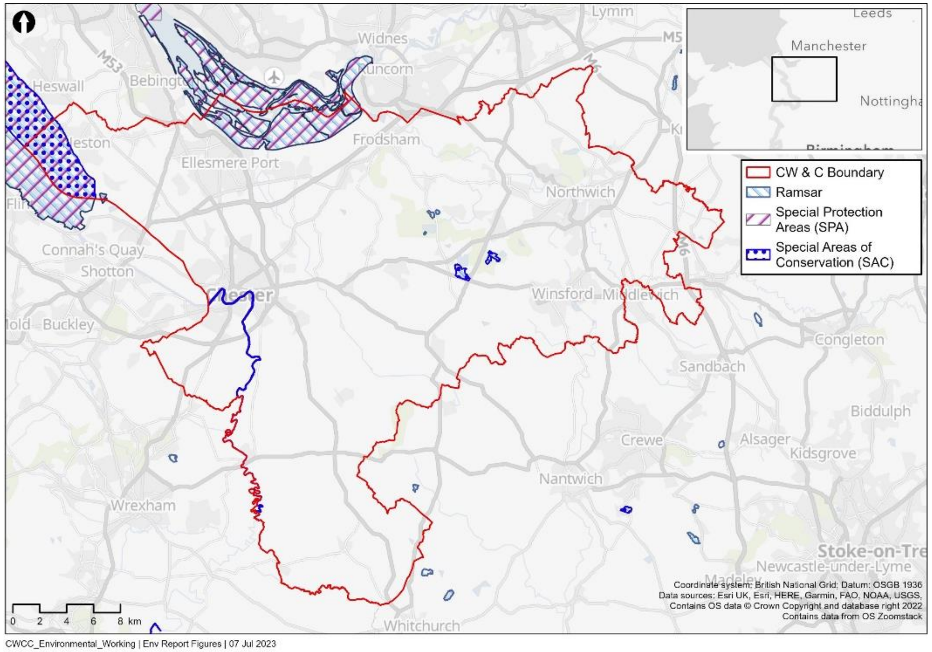
5.2.3 Biodiversity

The CW&C borough contains several Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), which form part of the UK National Sites Network (NSN). SPAs are protected areas for birds in the UK and SACs are protected areas for natural habitats and certain species of interest. Wetlands of international importance, also known as Ramsar Sites are not part of the NSN but often overlap with these areas and are protected in their own right. These are illustrated in Map 5.1 which includes:

- Three Ramsar sites that are fully or partially within the CW&C borough including Dee Estuary, Mersey Estuary and Midland Meres and Mosses Phase and Phase 2.
- Two SPAs and four SACs that are fully or partially within the CW&C borough including:

- Dee Estuary SPA and SAC
- Mersey Estuary SPA
- River Dee and Bala Lake SAC
- Oak Mere SAC
- West Midlands Mosses SAC

Map 5.1: European sites and Ramsar sites



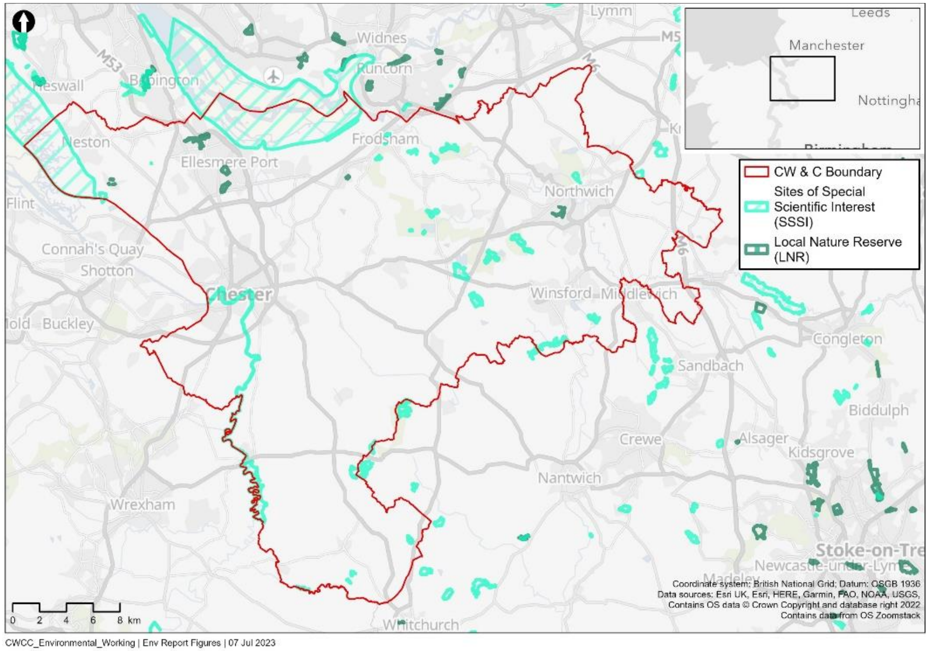
Source: Mott MacDonald (2023)

Some of the sites include terrestrial and marine elements and are designated for a variety of habitats and species. For example, the Dee Estuary supports extensive areas of intertidal sand, mudflats and saltmarsh and is of major importance for waterbirds; Oak Mere SAC is a shallow lake unique because of its unusual water chemistry which gives rise to an outstanding assemblage of aquatic plants.

CW&C also contains numerous national and local designated wildlife sites (see Map 5.2) including:

- 28 Sites of Special Scientific Interest (SSSIs)
- 6 Local Nature Reserves (LNRs)
- 443 Local Wildlife Sites (LWSs)[81]

Map 5.2: National and local ecological sites



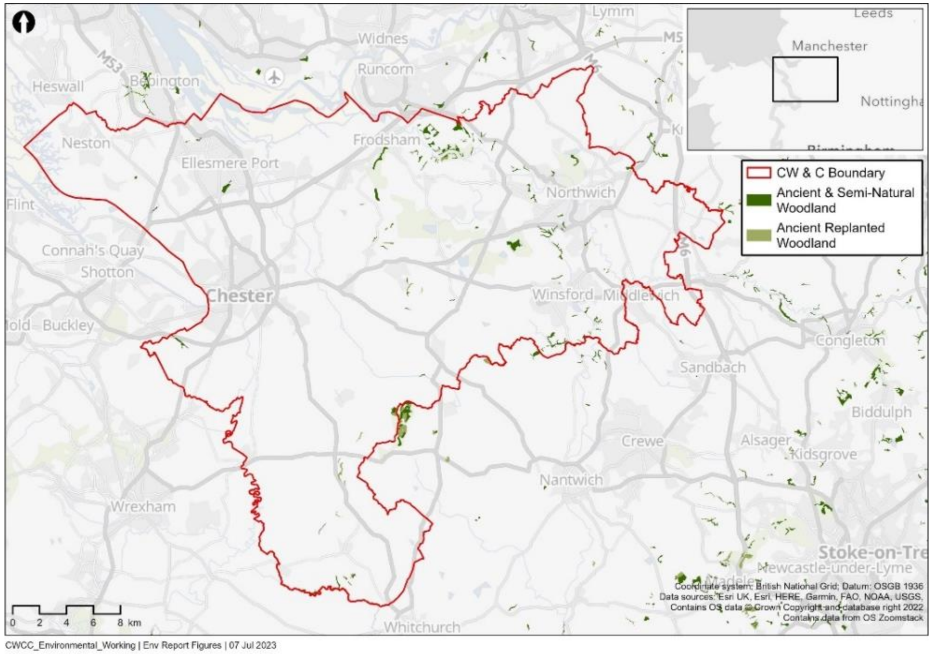
[81] CW&C (undated) Local Plan SA Scoping Report

Source: Mott MacDonald (2023)

These sites need to be carefully considered throughout the planning and development of any new transport infrastructure in order to ensure the willdlife is protected across the borough and biodiversity encouraged.

CW&C has a mix of different landscapes that support a fragile and vulnerable wealth of different types of wildlife habitats including priority habitat for example: lowland heath, peatland, grassland, ancient woodland, rivers and estuaries, glacial meres, ponds, hedgerows, historic and notable trees and artificial habitats. Ancient woodland is classed as irreplaceable habitat. Ancient woodland including Ancient and Semi-Natural Woodland, and Ancient Replanted Woodland make up 0.69% of the total land area of CW&C borough (see Map 5.3) and are predominantly located around Frodsham and towards the edge of the borough around Beeston.

Map 5.3: Ancient woodland



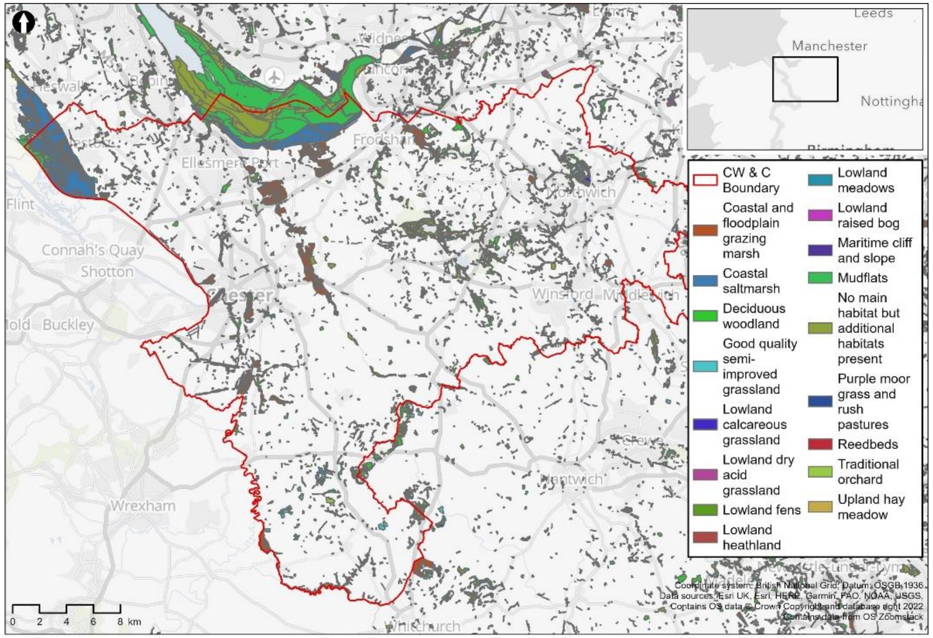
CWCC_Environmental_Working | Env Report Figures | 07 Jul 2023

Source: Mott MacDonald (2023)

Priority habitats are those which have been deemed to be of principal importance for the purpose of conserving nature and are listed in the UK Biodiversity Action Plan. Priority habitats make up 11% of the total land area of the CW&C borough (see Map 5.4).

Table 5.9 presents the different types of priority habitat present across the CW&C borough by percentage. Priority habitat and other habitats and landscape features contribute to the natural capital stocks in the borough which provide ecosystem services such as climate regulation, hazard management and water purification.

Map 5.4: Priority habitat



CWCC_Environmental_Working | Env Report Figures | 07 Jul 2023

Source: Mott MacDonald (2023)

Table 5.9: Priority habitat breakdown across CW&C

Habitat type	Distribution
Coastal and floodplain grazing marsh	13.54%
Coastal saltmarsh	18.46%
Deciduous woodland	33.63%
Good quality semi-improved grassland	2.02%
Lowland calcareous grassland	0.53%
Lowland dry acid grassland	0.03%
Lowland fens	1.11%
Lowland heathland	0.66%
Lowland meadows	1.78%
Lowland raised bog	0.09%
Mudflats	13.00%
No main habitat but additional habitats present	14.22%
Purple moor grass and rush pastures	0.08%
Reedbeds	0.15%
Traditional orchard	0.70%
Total	**100.00%**

Source: Mott MacDonald (2023)

CW&C in partnership with Chester Zoo, Canal and River Trust, Sustrans, the Land Trust and Cheshire West Communities Together, are working together on an ambitious 10-mile nature recovery corridor aiming to protect declining species and habitats in Cheshire. Over the 12 months since funding was awarded, new wildflower meadows, native orchards, hedgerows, ponds and wetlands have been established, and the rare Nathusius' pipistrelle bat is among species recorded in the area for the first time.[82]

[82] Cheshire and Warrington Local Enterprise Partnership - Nature Recovery Corridor: Conservationists transforming local landscape to boost wildlife in Cheshire - Cheshire and Warrington

Development pressure, climate change and pollution can have effects on these international, national and local wildlife sites and their qualifying features. Transport has a key role to play in ensuring these sites are protected to support nature recovery.

Biodiversity Net Gain (BNG) requirements will become mandatory for projects seeking planning permission in November 2023 (and for Nationally Significant Infrastructure Projects (NSIP) in 2025). Development projects will need to demonstrate a minimum 10% BNG. At the LTP level, it is best practice to set out a commitment and strategy to achieving BNG, to demonstrate the LTP can be delivered to meet net gain.

5.2.4 Landscape

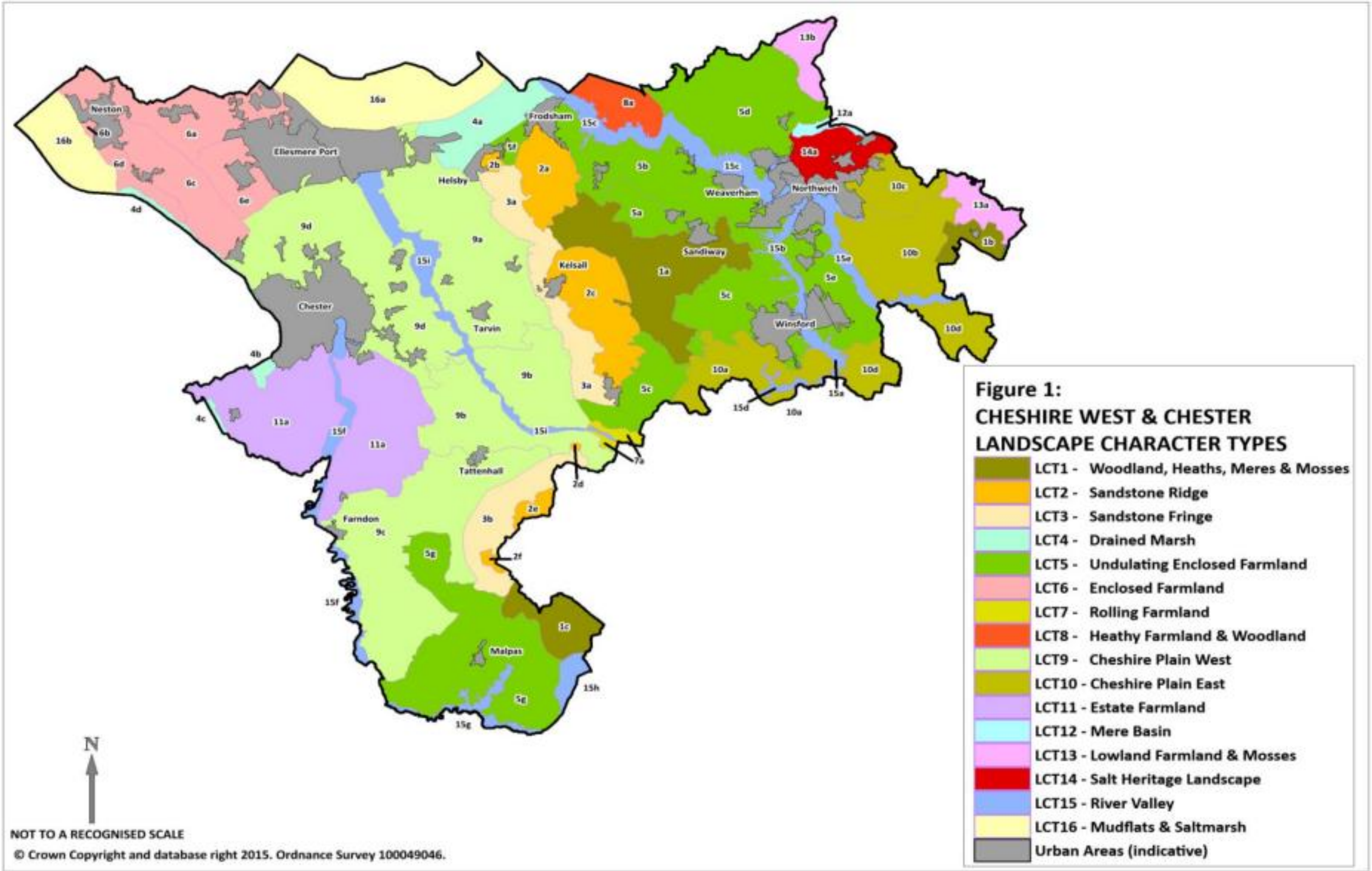
CW&C is characterised by attractive countryside, varied landscapes and diverse settlements ranging from the historic city of Chester to small rural hamlets, each of which are important for giving a place its unique local identity. The CW&C landscape is categorised into 16 different landscape types, as shown in Table 5.10 and Map 5.5, to reflect the unique character of a range of contrasting landscapes across the borough[83].

Table 5.10: CW&C landscape categories

- LCT1 - Woodland, heaths, meres and mosses
- LCT2 - Sandstone ridge
- LCT3 - Sandstone fringe
- LCT4 - Drained marsh
- LCT5 - Undulating enclosed farmland
- LCT6 - Enclosed farmland
- LCT7 - Rolling farmland
- LCT8 - Heathy farmland and woodland
- LCT9 - Cheshire Plain West
- LCT10 - Cheshire Plan East
- LCT11 - Estate farmland
- LCT12 - Mere Basin
- LCT13 - Lowland farmland and mosses
- LCT14 - Salt heritage landscape
- LCT15 - River Valley
- LCT16 - Mudflats and saltmarsh

[83] CW&C Council (2016). The Landscape Strategy for Cheshire West and Chester Borough. Available at: CW&C_LandscapeStrategyPart1_Final_March2016 (cheshirewestandchester.gov.uk)

Map 5.5: Map of landscape categories across CW&C



Source: CW&C Council

National Character Areas (NCAs) divide England's landscape into 159 distinct areas and are defined by a unique combination of aspects such as landscape, biodiversity, geodiversity and economic activity[84]. There are five NCAs that make up the CW&C area, with a description of each presented in Table 5.11.

Table 5.11: NCAs within CW&C

NCA	Description
Shropshire, Cheshire and Staffordshire Plain	An expanse of flat or gently undulating, lush, pastoral farmland, which is bounded by the Mersey Valley NCA in the north, with its urban and industrial development, and extending to the rural Shropshire Hills NCA in the south. To the west, it is bounded by the hills of the Welsh borders and to the east and south-east by the urban areas within the Potteries and Churnet Valley, Needwood and South Derbyshire Claylands, and Cannock Chase and Cank Wood NCAs.
Cheshire Sandstone Ridge	The NCA is situated between Malpas and Frodsham and is surrounded on all sides by the Shropshire, Cheshire and Staffordshire Plain NCA, except to the north, where the ridge drops into the Mersey Valley NCA. It is a discontinuous ridge, but is very prominent, rising sharply from the gently rolling topography of the surrounding NCAs.
Mersey Valley	The NCA consists of a wide, low-lying river valley landscape focusing on the River Mersey, its estuary, associated tributaries and waterways. It is a varied landscape that extends from the mosslands in the east to the wide estuary with intertidal mudflats/sand flats and salt marsh in the west. The area encompasses a complex mix of extensive industrial development and urban areas, with high-quality farmland in between.
Wirral	The landscape is based on the formal landscapes of former large country estates, rural areas, natural coastal scenery and wooded sandstone ridges, which combine to give the NCA a unique character. The NCA is separated from the urban areas of east Wirral by a dramatic sandstone ridge, as well as by the M53 motorway. This is a rich pastoral landscape interspersed with settlements.
Merseyside Conurbation	The NCA is predominantly urban and suburban landscape, based around the settlements of Liverpool, Birkenhead, Bootle, Kirkby, Maghull, Huyton, Bebington and Wallasey. The NCA sits on a low-lying but gently rolling platform punctuated by low sandstone ridges and bisected by the lower estuary of the River Mersey.

Source: Natural England

The Liverpool, Manchester and West Yorkshire Green Belt is the second largest Green Belt in the UK, accounting for 31% of the total Green Belt land, and covers around 41% of the CW&C area. There are no Areas of National Landscapes or National Parks within the CW&C area.

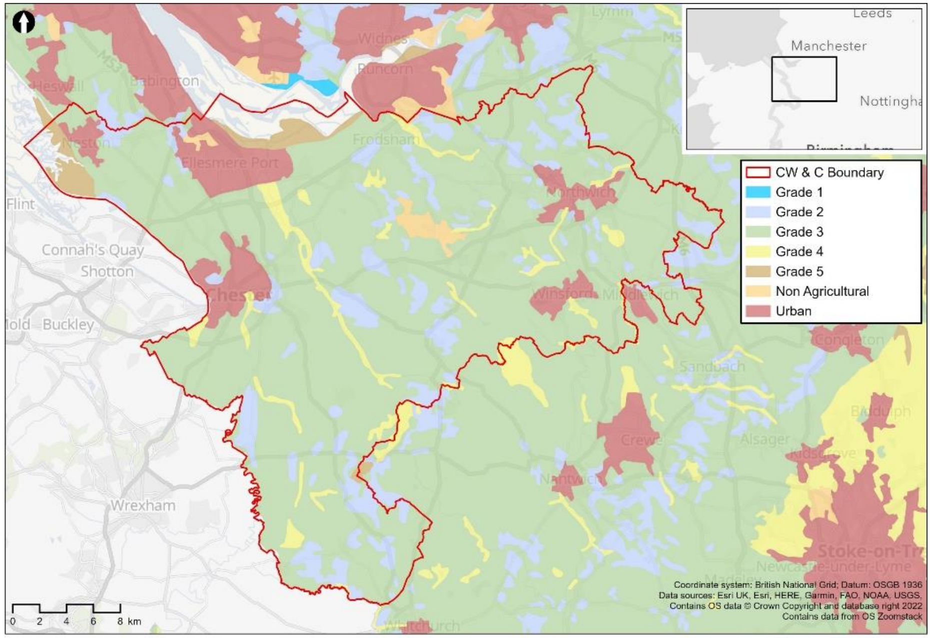
5.2.5 Soils

Much of the CW&C area is rural, with over 75% of land classed as agricultural. Agriculture therefore makes a very significant contribution to the character of the borough, habitats and the environment. Agricultural land is classified on a scale of 1 to 5 where 1 is the highest quality and 5 is the lowest. Land is also classified into urban and non-agricultural land. Map 5.6 shows a map of the agricultural land across the CW&C with the breakdown of the proportion shown below:

- Grade 1 – 0%
- Grade 2 – 11%
- Grade 3 – 74%
- Grade 4 – 4%
- Grade 5 – 2%
- Non-agricultural land – 1%
- Urban – 8%

[84] Natural England (2014). NCAs. https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making

Map 5.6: Agricultural land classification across CW&C



CWCC_Environmental_Working | Env Report Figures | 07 Jul 2023

Source: Mott MacDonald (2023)

5.2.6 Water

The River Basin Districts (RBD) which make up the CW&C area are the North West and the Dee. The North West RBD covers approximately 13,200km^2 and extends from Cumbria in the north and includes parts of Staffordshire to the south, parts of North Yorkshire in the east and Merseyside to the west[85]. The number of water bodies within the North West RBD is presented in Table 5.12. The current status of the surface and ground water bodies is presented in Table 5.13 and Table 5.14 respectively. Pollution from towns, cities and transport is the fourth largest contributor to the North West RBD not achieving good status with urban and transport accounting for the main reason within that category.

Table 5.12: Number of water bodies in the North West RBD

Waterbody category	Natural	Artificial	Heavily modified	Total
River, canals & surface water transfers	260	25	153	438
Lake	30	10	106	146
Coastal	2	0	3	5
Estuarine	4	0	7	11
Groundwater	18	0	0	18
Total	314	35	269	618

Source: Environment Agency

Table 5.13: Ecological and chemical classification for surface waters in the North West RBD

	Ecological status or potential					Chemical status	
	Bad	Poor	Moderate	Good	High	Fail	Good
No. of water bodies	17	61	390	130	1	599	0

Source: Environment Agency

Table 5.14: Quantitative and chemical classification for groundwaters in the North West RBD

	Quantitative status		Chemical status	
	Poor	Good	Poor	Good
No. of water bodies	5	13	10	8

Source: Environment Agency

[85] Environment Agency (2022). North West River Basin District | Catchment Data Explorer

The Dee RBD falls in both England and Wales. It covers an area of 2,251km^2 of North East Wales, Cheshire, Shropshire and the Wirral[86]. The number of water bodies within the Dee RBD is presented in Table 5.15. The current status of the ground and surface water bodies is presented in Table 5.16 and Table 5.17. Pollution from towns, cities and transport is the third largest contributor to the Dee RBD not achieving good status.

Table 5.15: Number of water bodies in the Dee RBD

Waterbody category	Natural	Heavily modified	Total
River	50	21	71
Lake	4	13	17
Coastal	0	0	0
Estuarine	0	1	1
Groundwater	5	0	5
Total	59	35	94

Source: Natural Resources Wales

Table 5.16: Ecological and chemical classification for surface waters in the Dee RBD

	Ecological status or potential					Chemical status	
	Bad	Poor	Moderate	Good	High	Fail	Good
No. of water bodies	3	7	43	36	0	14	57

Source: Natural Resources Wales

Table 5.17: Quantitative and chemical classification for groundwaters in the Dee RBD

	Quantitative status		Chemical status	
	Poor	Good	Poor	Good
No. of water bodies	0	5	2	3

Source: Natural Resources Wales

The main rivers in CW&C are shown in Map 5.7 and comprise the following, amongst others: River Weaver, River Gowy, River Dee, River Dane, and the River Croco[87]. The River Mersey is partly within CW&C near Ellesmere Port and The Shropshire Union Canal, the Trent and Mersey Canal, Weaver Navigation, and the Mersey Ship Canal are also present. The watercourses and drainage which flow into the Mersey and Dee Estuaries are influenced by their tidal reaches.

Flood risk in CW&C can occur from a variety of sources including fluvial, pluvial, groundwater, highways and drainage, water supply (including reservoirs) and canals. A summary of the flood risk for these sources is presented in Table 5.18[88]. The Environment Agency Flood Risk Zones which are related to pluvial flooding are presented in Map 5.7.

[86] Natural Resources Wales (2022). Dee River Basin Management Plan 2021 – 2027 Summary. Available at: Dee RBMP 2021-2027 Summary (cyfoethnaturiol.cymru)

[87] CW&C Council (2016). Local Flood Risk Management Strategy. Available at: local-flood-risk-management-strategy (cheshirewestandchester.gov.uk)

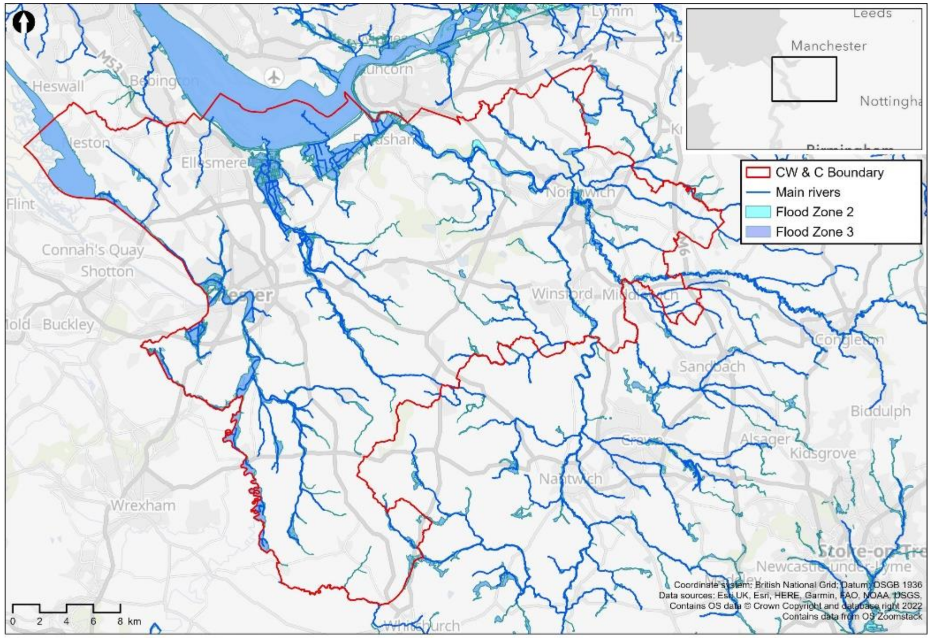
[88] CW&C Council (2016). Local Flood Risk Management Strategy. Available at: local-flood-risk-management-strategy (cheshirewestandchester.gov.uk)

Table 5.18: Summary of past flood events in CW&C

Source of flooding	Summary of past flooding
Fluvial	29 recorded instances of flooding relating to ordinary watercourses The Dee, Weaver, Gowy, Dane and Croco rivers are the main source of flood risk associated with main rivers. Four recorded instances of flooding related to main rivers
Pluvial	97 recorded instances of surface water flooding Number of localised surface water flooding issues in low-lying and potentially tidally influenced areas
Ground water	Localised groundwater flooding has occurred in some areas, however, risk of groundwater flooding is considered to be low at a catchment scale No records of historic groundwater flooding that are considered as having significant harmful consequences
Highways and drainage	Sewer flooding is clustered around the large urban area of Chester with are smaller clusters of incidents in the towns of Ellesmere Port, Malpas, Northwich, Frodsham and Winsford No instances of sewer flooding that are considered as having significant harmful consequences
Water supply (including reservoirs)	Flooding from bursts within the water supply network can occur anywhere, affecting properties and residential areas Responsibility of water companies to reduce risk No recorded incidents of reservoir flooding or the failure of a dam
Canals	Five recorded instances of canal overtopping and breach incidents

Source: CW&C Council

Map 5.7: Main rivers and flood zones in CW&C



CWCC_Environmental_Working | Env Report Figures | 07 Jul 2023

Source: Mott MacDonald (2023)

As noted in 5.2.1, climate projections suggest that extreme weather will happen more frequently in the future, this includes increased temperatures (water stress) and changes to precipitation rates (flooding). As precipitation patterns change, rainfall events are projected to become more intense, during winter storms and also summer storms that may fall following periods of dry, hot weather, leading to localised flash flooding. The potential impacts of this on transport infrastructure could include:

- Increased frequency of high river flows, resulting in a higher likelihood of flooding along river floodplains

- Increased frequency of urban drainage capacity being exceeded, resulting in urban flooding
- Increased likelihood of droughts, leading to disruption of water supplies required for maintenance

Natural Environment – key findings

- Between 1981 – 2000, and 2001-2020, annual mean temperatures have increased by 0.54°C in the North West.
- In May 2019 CW&C Council declared a climate emergency.
- Maximum mean temperatures are projected to increase by 4.8°C in summer months, and average precipitation in winter months is projected to increase by 26.6% by the year 2090 as a result of climate change.
- Climate change has the potential to reduce the capacity and efficiency of some existing infrastructure highlighting the need to ensure networks are resilient.
- CW&C council set a target to be carbon neutral by 2030, and the borough as a whole to be carbon neutral by 2045.
- In 2021, the total GHG emissions for the borough decreased by 38% compared to 2005 levels.
- Transport is the second highest emitter of greenhouse gas emissions in the borough, accounting for 20% (2021).
- CW&C has a mix of different landscapes that support a fragile and vulnerable wealth of different types of wildlife habitats.
- BEVs are not anticipated to outnumber petrol and diesel licenced vehicles until 2035 and 2045 in either growth scenario.
- 41% of the CW&C area is included within the Liverpool, Manchester and West Yorkshire Green Belt, the largest Green Belt in the UK.
- 75% of the CW&C area is classed as agricultural, an important land use that requires protection.

5.3 Community environment

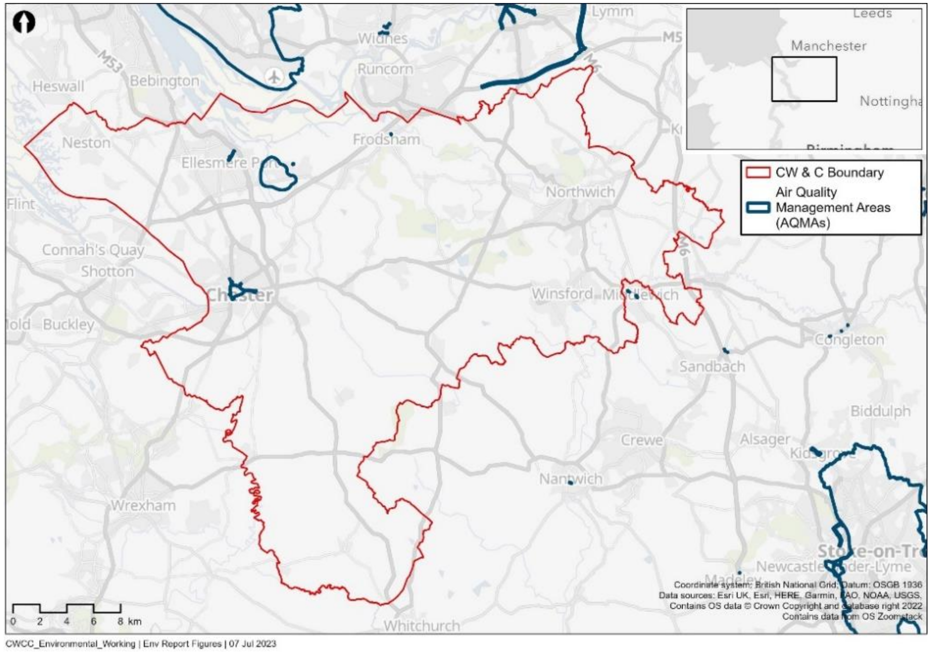
5.3.1 Air quality

The main air pollutants of concern in CW&C are nitrogen dioxide (NO_2), particulate matter (PM) and sulphur dioxide (SO_2). CW&C has four areas which are declared as Air Quality Management Areas (AQMAs), as shown in Map 5.8:

- Chester City Centre AQMA No. 5 – NO_2
- Whitby Rd / Station Rd AQMA – NO_2
- Frodsham AQMA and Cheshire West and Chester – NO_2
- Thornton le Moors AQMA No. 4 – SO_2

However, due to significant improvements in air quality, the council has proposed revoking the AQMAs in Ellesmere Port and Frodsham. Monitoring data over the past five years has shown consistent compliance with national air quality objectives, particularly for NO_2 levels.

Map 5.8: AQMAs in CW&C



Source: Defra (UK Air). AQMAs. Available at: Air Quality Management Areas (AQMAs) - Defra

For the first time in 2021, excluding the 2020 national COVID-19 lockdown, the annual average NO_2 objective was not exceeded at any monitoring site within the Chester City Centre AQMA, Frodsham AQMA and Cheshire West and Chester or the Whitby Rd / Station Rd AQMA[89]. It is noted that current national air objectives for PM_{10} are complied with in CW&C. There are no regulatory standards for $PM_{2.5}$ for local authorities as part of the local air quality management framework, the government still expects all local authorities to effectively use their powers to reduce $PM_{2.5}$ emissions from the sources which are within their control[90].

CW&C monitor air quality at 12 locations, six of which are located within the CW&C boundary and the remaining six are in neighbouring areas. These air quality monitoring sites provide around the clock real-time data.

At their long-term monitoring sites, it is identified that there is a downwards trend in the concentration of NO_2 in CW&C over time[91]. However, PM_{10} have mainly remained static over the previous five years. Given the episodic nature of the SO_2 exceedances which occur in CW&C as a result of industry, it is not possible to identify significant trends in the data.

5.3.2 Noise

The main receptors of noise pollution or sensitive receptors include; schools, hospitals, community facilities, dwellings, and designated sites. Transport infrastructure (road networks and railway tracks) are a key source of noise pollution which can impact human health. Public health profiles show the percentage of the UK population exposed to road, rail and air transport noise of 65 dB(A) or more during the daytime in 2016 was recorded as 5.5%, and the percentage of the UK population exposed to transport noise of 55 dB(A) or more during the night-time in 2016 was 8.5%.

5.3.3 Recreational assets

CW&C has a wealth of green and open spaces which are not only rich in wildlife but also provide facilities for local residents and visitors to enjoy,

[89] CW&C Council (2022). Air Quality Annual Status Report. Available at: air-quality-annual-status-report-2022-V2 (cheshirewestandchester.gov.uk)

[90] Defra (2023). Air quality strategy: framework for local authority delivery. Available at: Air quality strategy: framework for local authority delivery - GOV.UK (www.gov.uk)

[91] CW&C Council (2022). Air Quality Annual Status Report. Available at: air-quality-annual-status-report-2022-V2 (cheshirewestandchester.gov.uk)

contributing to health and wellbeing. The CW&C Parks and Greenspaces Strategy categorises greenspace into three categories and identifies the level of provision required across the borough, as shown in Table 5.19[92]. The data shows that there is currently a shortfall in the provision of amenity greenspace, but there is sufficient supply of parks and recreation grounds.

Table 5.19: Existing supply of greenspace within CW&C

Type	Existing provision (ha)	Required provision (ha)
Amenity greenspace	182.10	202.80
Parks and recreation grounds	256.66	169.00
Accessible natural greenspace	2399.00	N/A

Source: CW&C Council

The borough has six Country Parks that are natural areas designated for people to visit and enjoy recreation in a countryside environment. These are:

- Rivacre
- Stanney Woods
- Caldy Valley Nature Park
- Little Budworth
- Marbury, and
- Wirral Country Park

Community Environment – Key findings

- There are four AQMAs within the CW&C area around Chester and Ellesmere Port due to high concentrations of NO_2 and SO_2 largely associated with vehicle emissions.
- There is a downward trend in the concentration of NO2 over time, but PM10 concentrations have remained static over the previous five years.
- Public health profiles show the percentage of the UK population exposed to road, rail and air transport noise of 65 dB(A) or more during daytime in 2016 was recorded as 5.5%.
- The percentage of the UK population exposed to transport noise of 55 dB(A) or more during night-time in 2016 was 8.5%.
- There is a shortfall in the provision of amenity greenspace, but there is a sufficient supply of parks and recreation grounds.

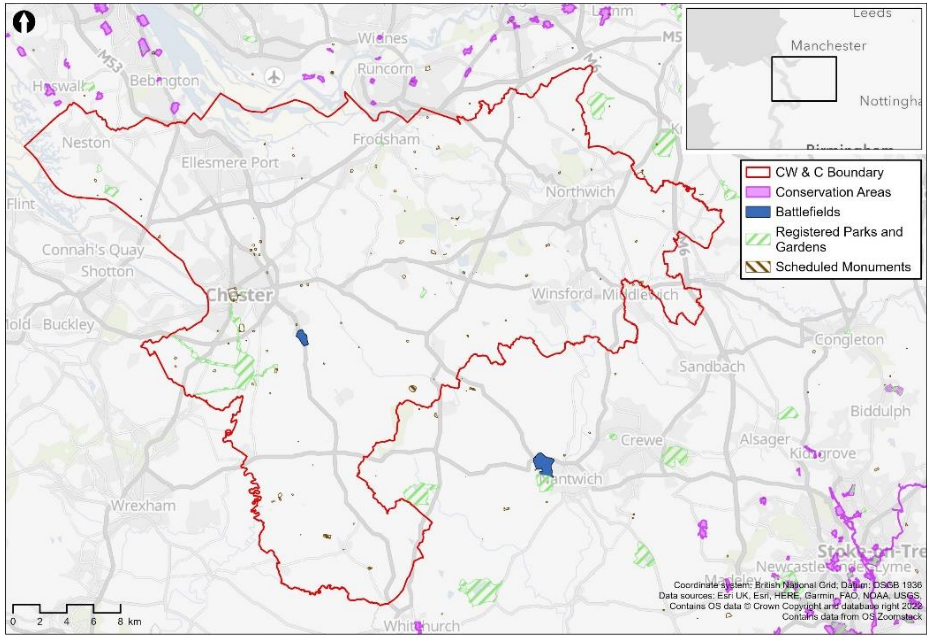
5.4 Built environment

5.4.1 Heritage

The CW&C borough is rich in heritage and archaeological assets with listed buildings, scheduled monuments, conservation areas, registered parks and gardens and a registered battlefield. These are indicated in Map 5.9 below.

[92] CW&C Council (2020). Cheshire West and Chester Parks and Greenspaces Strategy. Available at: Parks_and_Green_Spaces_Strategy_Tier_1.pdf_9ddee3b23b9cba08e7b331f6c6d4ff34 (amazonaws.com)

Map 5.9: Heritage assets in CW&C



Source: Mott MacDonald (2023)

This shows that:

- There are around 2,500 listed buildings across the borough. 86 of the buildings are Grade I listed, such as the city walls of Chester which are some of the best preserved in the country, 180 are Grade II*, and the remainder are Grade II listed[93]
- There are 97 Conservation Areas, including Chester City Centre, Northwich and Bostock. Conservation Areas play a key role in ensuring new development preserves or enhances the features of special historical or architectural interest on the area over which they have been designated[94]
- There are 118 Scheduled Monuments, seven Registered Parks and Gardens, one Battlefield (Battle of Rowton), 11 areas of archaeological potential, and one area of archaeological importance (AAI) – Chester and Boughton AAI, which is one of only five AAIs designated in England[95]
- There are numerous local listed buildings that have been identified as having local interest and importance, with nearly 4,500 sites of archaeological / historic importance in the Historic Environment Record (HER)[96]

The Heritage at Risk Register also includes historic buildings and sites that are at risk of loss through neglect, decay or development, or are vulnerable to becoming so. Within the CW&C borough, there are 12 scheduled monuments, 30 listed buildings, and five conservation areas identified as being at risk.[97]

Built environment – Key findings

- There are 2,500 listed buildings within the CW&C area – 86 Grade I, 180 Grade II* and 2,234 Grade II.
- There are 96 Conservation Areas within the borough.
- There are 118 Scheduled Monuments, sever Registered Parks and Gardens, one Battlefield, 11 areas of archaeological potential, and one AAI in total.
- Within CW&C borough, the Heritage at Risk Register identified 12 Scheduled Monuments, 30 listed buildings, and five conservation areas.

---

[93] CW&C - Conservation and Design | Cheshire West and Chester Council

[94] CW&C Local Plan Publication Sustainability Report

[95] Cheshire Archaeology - Chester and Boughton Area of Archaeological Importance | (cheshirearchaeology.org.uk)

[96] Chester Archaeological Society - Autumn_2011_v2_3249063.pub (chesterarchaeolsoc.org.uk)

[97] Historic England – Heritage at Risk Register 2022 Historic England - Heritage at Risk Register 2022, North West

5.5 Protecting environments – summary

NO_2 POLLUTION HAS PREVIOUSLY EXCEEDED THE LEGAL LIMIT ACROSS PARTS OF CHESTER, ELLESMERE PORT AND FRODSHAM AS A RESULT OF ROAD TRAFFIC

THERE ARE **16 LANDSCAPE CATEGORIES** AND **5 NATIONAL CHARACTER AREAS** WHICH MAKE UP THE LANDSCAPE. A LARGE AREA OF CW&C IS CLASSED AS **GREEN BELT**.

IN 2021, THE TOTAL **GHG EMISSIONS** FOR THE BOROUGH **DECREASED BY 38%** COMPARED TO 2005 LEVELS

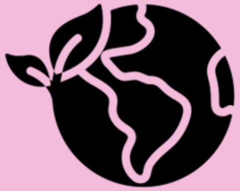
TRANSPORT IS THE SECOND HIGHEST EMITTER IN CW&C, ACCOUNTING FOR **33%** OF TOTAL CARBON EMISSIONS IN 2021

POLLUTION FROM TOWNS, CITIES AND TRANSPORT ARE THE **4TH AND 3RD LARGEST CONTRIBUTOR** TO POOR STATE OF RIVER BASIN DISTRICTS

OVER **75%** OF LAND WITHIN CW&C IS CLASSED AS AGRICULTURAL

MAXIMUM MEAN **TEMPERATURES** ARE PROJECTED TO INCREASE BY **4.8°C** IN SUMMER MONTHS AND AVERAGE PRECIPITATION IS PROJECTED TO INCREASE BY **26.6%** BY THE YEAR **2090**

CW&C DECLARED A **CLIMATE EMERGENCY** IN **2019**



CW&C SET A TARGET TO BE CARBON NEUTRAL BY **2045**

THE BOROUGH CONTAINS INTERNATIONAL, NATIONAL AND LOCAL **DESIGNATED SITES FOR NATURE CONSERVATION** IMPORTANCE, AS WELL AS A RICH MIX OF HABITATS AND SPECIES. **TRANSPORT HAS A KEY ROLE** TO PLAY IN ENSURING THESE AREAS ARE PROTECTED TO SUPPORT NATURE RECOVERY.

WHAT DOES THIS MEAN FOR CW&C LTP4?

The climate projections identified for North West England are hotter, drier summers, and warmer, wetter winters. These changes in seasonal averages will also likely be punctuated by more extreme events such as heatwaves, droughts and extreme precipitation, highlighting the need to ensure transport infrastructure is resilient to future climate change effects, including extreme events and temperatures.

Transport remains one of the biggest emitters of carbon within CW&C and across the UK, with the majority of carbon emissions coming from road transport on motorways and A roads. Following the Council's declaration of a climate emergency, significant changes are therefore needed to the way in which people travel in the borough to reduce transport related emissions. This will include consideration of the use of public transport and sustainable modes of transport (walking and cycling) to reduce emissions within the borough, and greater coverage of electric vehicle infrastructure to encourage uptake of electric vehicles.

Transport development needs to also consider the carbon impact of new infrastructure, both in terms of the embodied carbon (the carbon emitted during production of the concrete, steel, timber, etc.) and carbon emitted during operation (lighting and technology) through the use of sustainable materials and technology.

CW&C borough has an abundance of different habitats, species and designated sites which provide the area with a rich biodiversity which needs to be protected and enhanced. This will be a key consideration for new infrastructure interventions with new active travel and green infrastructure providing a good opportunity to protect and where possible enhance the natural environment.

The borough is split into different landscapes which provide the borough with its distinct characteristics. Development of transport infrastructure has the potential to connect people across the borough and promote the different landscapes demonstrating the attractiveness of the area as a place to live work and invest.

There are four areas declared as AQMAs within the borough. Three of the AQMAs are declared due to exceedances of annual mean NO2 resulting from road traffic, whereas the fourth relates to exceedances of the 15-minute mean SO2 objective resulting from industrial emissions. This highlights the need to consider ways to reduce the reliance on polluting private vehicles, particularly to/from and within urban areas where air quality issues are prevalent.

6 Issues and opportunities

Sections 2-5 of this report have assessed a wide range of data sources to develop an evidence base to inform the CW&C Local Transport Plan. This section provides an overview of the key issues and opportunities for the LTP to consider.

Promoting healthy communities • There are large proportions of rural areas across the borough presenting unique transport challenges and the need to mitigate the impacts of inevitable car dependency. • The population in CW&C is older than average, particularly in rural areas and is shown to be getting older over time. • Urban areas within the borough suffer higher levels of deprivation, unemployment and lower than average healthy expectancy. • There is an evidential link between areas of adverse socio-economic outcomes and transport related poverty- further emphasising the need to ensure these communities are well connected to key services, facilities and jobs and training opportunities. • Car usage in CW&C is higher than average, increasing impact on transport related carbon and other pollutant emissions, and reducing the quality of environment for pedestrians and cyclists.	**Supporting a thriving economy** • The CW&C economy is strong and diverse, however there is evidence of challenges in recent years with productivity flatlining. • There are high concentrations of jobs and further plans for growth outside of the core urban centres across the borough, which at present are predominantly car dependent. • There is an east-west divide in relation to public transport services which needs to be considered to support the sustainable development of housing and job growth within areas to the east of the borough (e.g. Winsford and Northwich). • There are high flows of commuting patterns in and out of the borough which currently are predominantly undertaken by car, emphasising the need to consider a range of travel choices to support cross border connectivity.
Delivering efficient networks • There is opportunity to build on current levels of walking, micro mobility and cycling, particularly within urban areas, to further promote healthy communities and increase sustainable mode share. • The bus network across CW&C is fragile, particularly towards the east of the borough where communities are more poorly served. The BSIP provides a transformational vision for the network which is currently constrained by a lack of funding. • Ensuing people are well connected to rail services via a range of modes will be key to reducing the number of private car trip to/from urban areas, and supporting cross border commuter trends sustainably. • Congestion is evident on routes into key urban areas and car use is expected to grow. • EVs provide an important opportunity to mitigate impacts of car dependency on the environment, however further infrastructure is required across CW&C. The roll out of EVs will not mitigate against congestion. • Maintenance is a key issue for CW&C with a shortfall in funding impacting the quality of the network for all users. • Key A roads and motorways through the borough provide important links for freight further impacting identified issues of congestion, and maintenance. Only very small proportions of freight movements destined for CW&C are carried by rail.	**Protecting environments** • Transport is the second highest emitter of GHG emissions within CW&C, with road transport on A roads and motorways making up almost three quarters of total transport emissions. • Promotion of active modes of transport, improved public transport and connectivity across the borough are key to reducing these emissions. • Climate change is forecast to increase temperatures, precipitation and extreme weather events across CW&C highlighting the need to ensure networks are resilient and continue to drive modal shift away from polluting private vehicles. • AQMAs are evident across CW&C, predominantly around the centres of Ellesmere Port and Chester due to high concentrations of pollutants from vehicle emissions. • EVs present a good opportunity to mitigate noise impacts on local communities in proximity to the highway network, but impacts on congestion still need to be considered. • CW&C is rich in heritage assets and characteristics and it is important to ensure new development (including transport infrastructure) strives to protect the characteristics of historic town centres, and heritage assets, for CW&C to continue to offer attractive places for people to live, work and invest.