

***Strategic
Environmental
Assessment (SEA)
of the Warrington
Draft Local
Transport Plan 4
(LTP4)***

***Environmental
Report***

March 2018



Quality information

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1. Background

1.1 Introduction to the Environmental Report

This document is a Strategic Environmental Assessment (SEA) Environmental Report. It has been prepared to document the SEA process which has been undertaken to support the preparation of the Warrington Local Transport Plan 4 (LTP4).

The Local Transport Plan 4 (LTP4) sets out Warrington Borough Council's vision and strategy for the long term development of transport solutions in the borough. It will provide the framework for how transport will support the economic, social and environmental development of Warrington over the plan period and will replace the existing local transport plan (LTP3).

The new plan will draw on the wider policies of the council, national transport strategy / policy, and potential sources of funding streams.

The LTP4 will be made available for consultation, accompanied by this Environmental Report which documents the SEA process.

1.2 SEA explained

SEA is a mechanism for considering and communicating the likely significant effects of an emerging plan, and reasonable alternatives in terms of key environmental issues. The aim of SEA is to inform and influence the plan-making process with a view to avoiding or mitigating negative environmental effects and maximising positive effects.

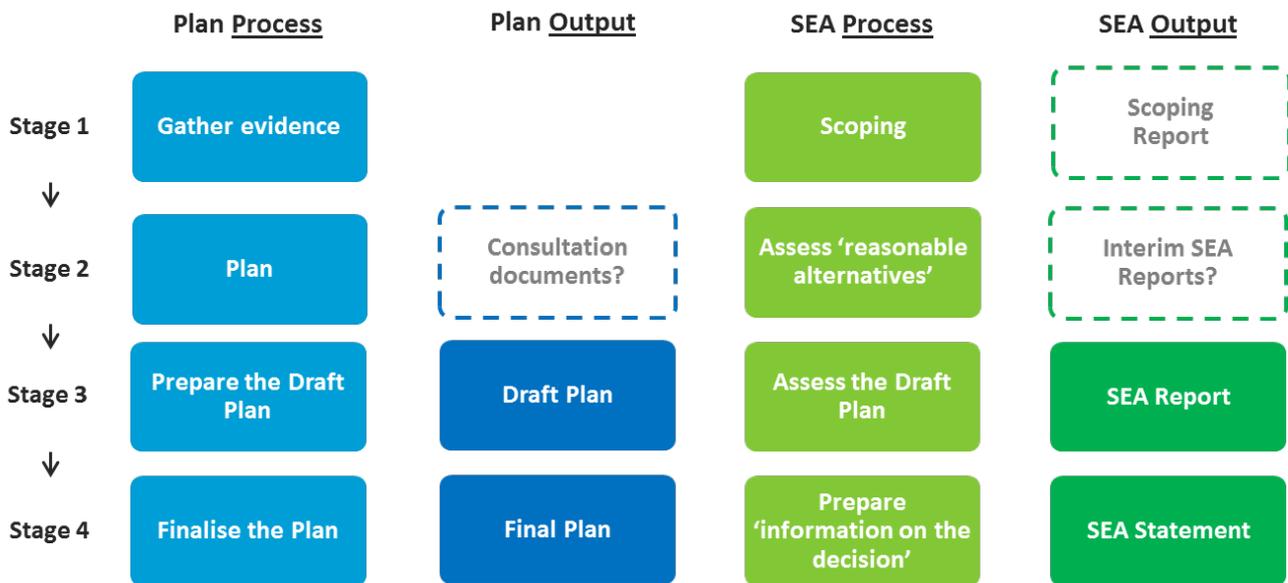
The European Directive 2001/42/EC¹ requires certain plans to be subject to a Strategic Environmental Assessment (SEA). This Directive is realised in the UK through Statutory Instrument 2004 No. 1633: The Environmental Assessment of Plans and Programmes Regulations 2004 (otherwise known as the SEA Regulations).

These Regulations require an environmental assessment to be carried out on certain plans and programmes prepared by public authorities that are likely to have a significant effect upon the environment. Certain plans, including LTP's, have been deemed by the Government to automatically require an SEA. Warrington's LTP4 is therefore subject to a full SEA in line with the requirements of the SEA Regulations.

As illustrated in Figure 1.1 below, SEA can be viewed as a four-stage process that produces a number of statutory and non-statutory outputs.

¹ Directive 2001/42/EC: <http://ec.europa.eu/environment/eia/sea-legalcontext.htm>

Figure 1.1 – SEA as a four step process

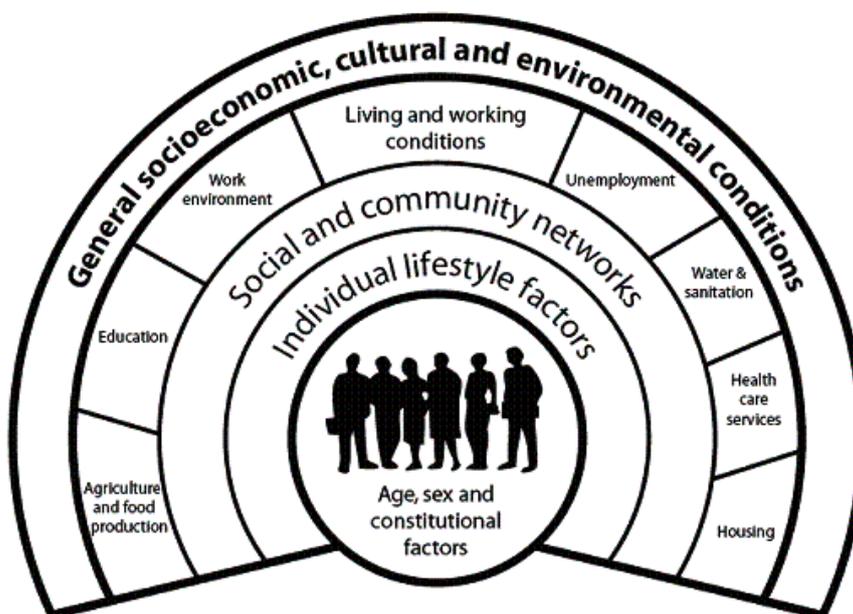


1.3 Assessing the impact on health and wellbeing

Health and wellbeing is one of the sustainability themes and is therefore included within the sustainability appraisal. Whilst undertaking a full Health Impact Assessment (HIA) is not a mandatory requirement, given the potential for the LTP4 to influence health and wellbeing, building in the principles and methods of HIA can help support the rigorous assessment of the health and social implications of the plan and related policies.

HIA can be a valuable tool for helping to develop policy and to provide recommendations as to how the health benefits can be enhanced and how negative consequences on health can be minimised. The HIA will consider the impact on all determinants of health as illustrated in Figure 1.2

Figure 1.2 Health Determinants



2. Introduction to Scoping

2.1 Background

In essence, scoping is the process of gathering information about the area and factors likely to be affected by the Plan. This information helps to identify what the key issues are and which of these should be the focus of the SEA process.

The scope of the SEA must be set out in an environmental report, with several key requirements emanating from the SEA Regulations. To ensure that these requirements are met, a Scoping Report was prepared and consulted upon from July - August, 2018.

The scoping report addressed the following elements, which are requirements of the SEA process.

Providing an outline of the Plan

There is a need to set out the aims and objectives of the Plan to provide the context within which the SEA is being undertaken.

Establishing the current and projected baseline

An important step when seeking to establish the appropriate 'scope' of an SEA involves reviewing the situation now for a range of environmental issues.

Doing so helps to enable identification of those key environmental issues that should be a particular focus of the appraisal, and also helps to provide 'benchmarks' for the appraisal of significant effects.

Just as it is important for the scope of SEA to be informed by an understanding of the current baseline conditions, it is also important to ensure that thought is given to how baseline conditions might 'evolve' in the future under the no plan / business as usual scenario. Doing so helps to enable identification of those key sustainability issues that should be a particular focus of the appraisal, and also helps to provide 'benchmarks' for appraising significant effects.

Undertaking a contextual review

Another key element of the scoping process is to undertake a review of national, regional and local policies, plans and programmes. The aim of this exercise is to draw out any key issues and environmental protection objectives that ought to be a focus of the SEA.

Establishing key issues

Key issues are drawn from the contextual review and baseline analysis, helping to inform the development of an SEA Framework of objectives and criteria. This provides the methodology for undertaking the environmental assessments.

3. Establishing the scope of the SEA

3.1 Introduction to the scope

This chapter sets out the scope of the SEA, establishing the key messages for a range of environmental factors that should be considered in the appraisal of the LTP4.

The scope of the SEA has been drawn upon from the SA Scoping Report published in 2017 to support the emerging Warrington Local Plan Review. Although this information was gathered in the context of the Local Plan review, much of the information is relevant to the LTP4 and it is therefore an appropriate and useful starting point when establishing the scope.

It is important to refresh the scope of the SEA over time to reflect new policies and programmes that emerge and to make updates to the baseline position. Given that the scoping information has been gathered from the Local Plan SA Scoping Report (as a starting point); it was necessary to undertake a more focused scoping exercise that reflects the aims of the LTP4.

To provide a structure to the scoping process and avoid duplication of evidence, the scope of the SEA has been presented within one of eight themes (listed below).

These themes and topics have been identified by grouping similar environmental factors together. How these themes link with the proposed issues identified in Schedule 2(6) has also been identified (*in brackets*).

Environmental themes and topics covered							
Economy and regeneration <i>(material assets)</i>	Health and Wellbeing <i>(human health, population)</i>	Accessibility <i>(Climatic factors)</i>	Housing <i>(material assets)</i>	Natural Resources <i>(soil, water, air)</i>	Cultural Heritage <i>(cultural heritage, landscape)</i>	Biodiversity and Geodiversity <i>(biodiversity, flora, fauna, landscape)</i>	Climate Change and resource use <i>(climatic factors, material assets)</i>
- Employment	- Health and wellbeing	- Accessibility	- Housing	- Water	- Cultural heritage	- Biodiversity	- Energy
- Education	- Community safety			- Soil and land	- Landscape character	- Geodiversity	- Climate change
- Regeneration	- Population			- Air quality	- Townscape		- Waste
	- Green infrastructure						- Resilience

NB: it should be noted that there are links between different 'topics' and that some information could cut across (or be relevant to) several themes.

3.2 Introduction to the Plan

Five strategic priorities have been established which have informed the vision for the LTP4. These are as follows:

Health - Transport improvements in Warrington will contribute to improved health and wellbeing of residents.

Air quality and noise - Transport improvements in Warrington should improve Air Quality and reduce noise in the borough.

Reducing carbon - Transport choices in Warrington will be further developed to reduce the emission of Carbon Dioxide and other Greenhouse Gases.

Housing growth - Transport improvements in Warrington will be developed and delivered to support housing growth and development.

Economic growth - Warrington's transport and highway networks will continue to support the creation and retention of jobs in the borough.

The vision of the LTP4 is as follows:

“Warrington will be a thriving, attractive and well-connected place with popular, high quality walking, cycling, and public transport networks”

3.3 Economy and regeneration

Contextual review

The **NPPF** outlines that the planning system should contribute to building a strong, responsive economy by 'ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure'². This has links to the new transport plan as there will be a need for transport infrastructure to support new development.

The **Northern Powerhouse strategy**³ sets out how the government will work with local stakeholders to increase productivity and economic growth across the North of England. It outlines a commitment by the government to invest in transport infrastructure, support the growth of skills, innovation and businesses and to establish a strong 'Northern Powerhouse' brand that is well recognised around the world.

In 2013 the Council published '*Warrington Means Business*', its programme to promote economic growth and regeneration, updating the earlier 2009 Warrington Regeneration Framework. The Warrington Means Business programme identifies major development and regeneration schemes and complements this with wider plans to upgrade local and strategic infrastructure, to enhance the quality of Warrington's residential and natural environment and a package of softer measures to support new and existing businesses.

The Warrington Means Business programme is being delivered by Warrington & Co (Warrington's urban regeneration partnership). Warrington & Co brings together the private and public sector to promote economic development and physical regeneration under the guidance of a private sector led board.

Employment: the current and projected baseline

As of March 2016, 80.7 % of economically active people in Warrington were in employment. This represents an increase of 2.8% since December 2014 (77.9%).

The rate of economically active people in Warrington compares well with the rest of the North West (75.5%) and Great Britain as a whole (77.8%). Unemployment levels (4%) were also lower than in the North West (5.3%) and Great Britain (5.1%)⁴.

The types of occupation taken in Warrington are shown in **Figure 3.1**. The job types are divided into Standard Occupational Classification (Soc) groups. Warrington has a lower percentage of lower classification jobs, except elementary occupations, than both the North West and Britain. It has considerably more people in professional occupations than the North West and is on a similar level with Britain and the North West for managers, directors and senior officials.

Warrington has 47.8% of its jobs classified as 'Managers, directors and senior officials', 'professional occupations' and 'associate, professional and technical'. This is up 1.8% compared to December 2014 (46%). It does have a lower proportion of jobs in service industries and skilled trades however when compared to both the North West and Great Britain⁵.

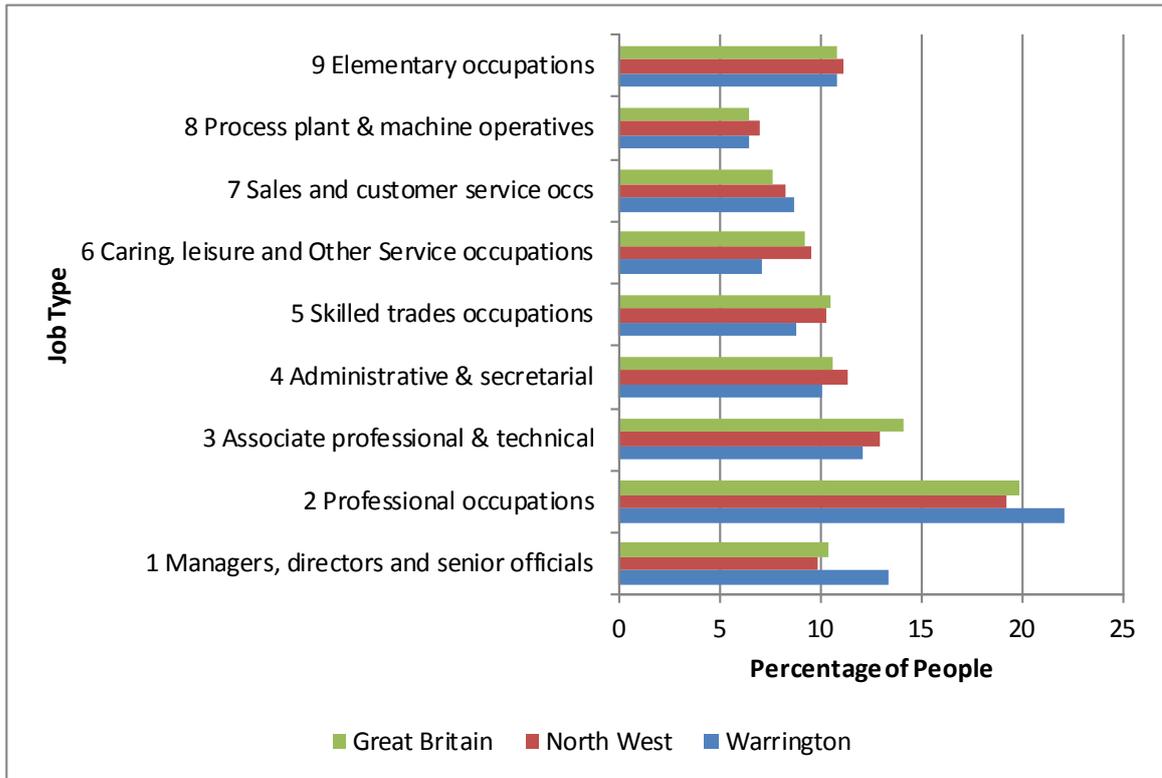
² DCLG (2012) National Planning Policy Framework [online] available at: <http://www.communities.gov.uk/documents/planningandbuilding/pdf/2116950.pdf>

³ HM Treasury (2016) Northern Powerhouse strategy [online] available at: <https://www.gov.uk/government/publications/northern-powerhouse-strategy>

⁴ ONS annual population survey (March, 2016) via nomis

⁵ ONS annual population survey (March, 2016) via nomis

Figure 3.1: Percentage of people in employment type, March 2016



Source: ONS (2016) via nomis

Table 3.1 below shows the gross weekly pay. The average weekly pay for Warrington is higher than that of the North West and for Great Britain. The difference in pay between men and women on average in Warrington is significant but the gap is around 20% less than that of Great Britain.

Table 3.1: Gross weekly pay (2017)

Gross weekly pay (£)	Warrington	North West	Great Britain
Full time workers	577.6	514.5	552.7
Male full time workers	601.9	550.9	594.2
Female full-time workers	517.7	464.6	494.4

Source: ONS annual survey of hours and earnings – resident analysis

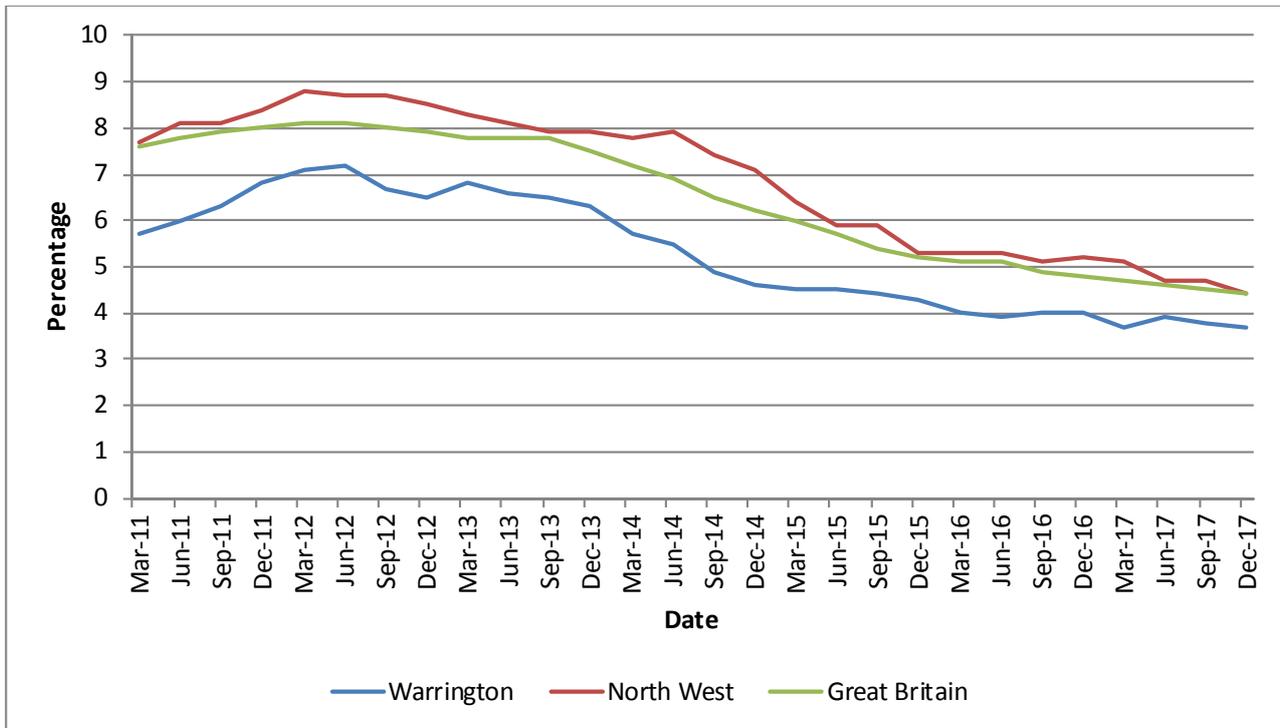
Unemployment in Warrington has consistently remained lower than the North West and British average over the last ten years (see **Figure 3.2**). It is expected that this trend will continue, as it is supported by aspirations for economic growth by the Local Enterprise Partnership and is also reflected in Objective E2 of the Adopted Local Plan Core Strategy.

2013/14 saw the completion of 19.28 ha of employment land. This was due to large scheme completions at Omega.

The average annual take up rate of land for development for employment uses in Warrington between 2006 and 2014 was 10.7 ha per annum⁶.

⁶ Warrington Borough Council (2014) Employment Land Availability Statement [online] available at: https://www.warrington.gov.uk/download/download/id/8628/employment_land_availability_statement_2014.pdf

Figure 3.2: Unemployment level time series (2011-2018)



Source: ONS (2018) via nomis

Education: The current and projected baseline

In December 2017, 41.4% of people in Warrington had an NVQ level 4 or above. This is more than the North West average (34.5%) and the Great Britain average (38.6%). 5.8% of people in Warrington have no qualifications compared to the North West which has 9% of people and Great Britain which has 7.7% of people without qualifications.

In the last ten years, Warrington’s NVQ4 qualifications and above has risen by almost 30%, from 31.9% of the population in December 2007 to the 41.4% in December 2017. Warrington has in fact seen a rising trend across all qualification types, NVQ1, 2, 3 and 4 with the number of people without qualifications decreasing from 12.1% in December 2007 to 5.8% in December 2017⁷.

The positive trends in terms of improved education levels in Warrington are considered likely to continue as educational facilities are upgraded, apprenticeship schemes are promoted and job opportunities are created.

Regeneration: The current and projected baseline

The Index of Multiple Deprivation 2015⁸ provides indicators of deprivation at local authority and lower super output area level (LSOA). (Lower super output areas are a statistical geography and are smaller in size than wards. There are 127 LSOAs in Warrington each with a population of approximately 1,500 people).

Based on latest data for Warrington, as summarized in the Warrington Joint Strategic Needs Assessment (JSNA) (2015), it appears deprivation levels in Warrington compared to other Local Authorities has increased slightly since 2010.

With an average score of 19.3 compared with 18.5 in 2010, Warrington now ranks 147th out of 326 local authorities on the rank of ‘Average SOA score’ measure compared with 153rd in 2010. This places Warrington within the 45th centile, meaning 55% of local authorities within England are less deprived than Warrington;

⁷ Nomis ONS - Annual Population Survey (2018)

⁸ Department for Communities and Local Government, The English Indices of Deprivation 2015, © Crown Copyright

- Analysis of the 'Local Concentration' and 'Extent' measures confirms that extreme deprivation affects a concentrated section of the population in Warrington and levels are not evenly spread across the borough;
- The absolute numbers of people in Warrington experiencing Income and Employment deprivation has increased; but there has been a small relative improvement in national ranking on the Employment measure since 2010;
- Warrington is ranked 90th worst (out of 326 local authorities) on the percentage of LSOAs falling into the most deprived 10% nationally. This means that Warrington falls within the worst 28% of local authorities nationally⁹.

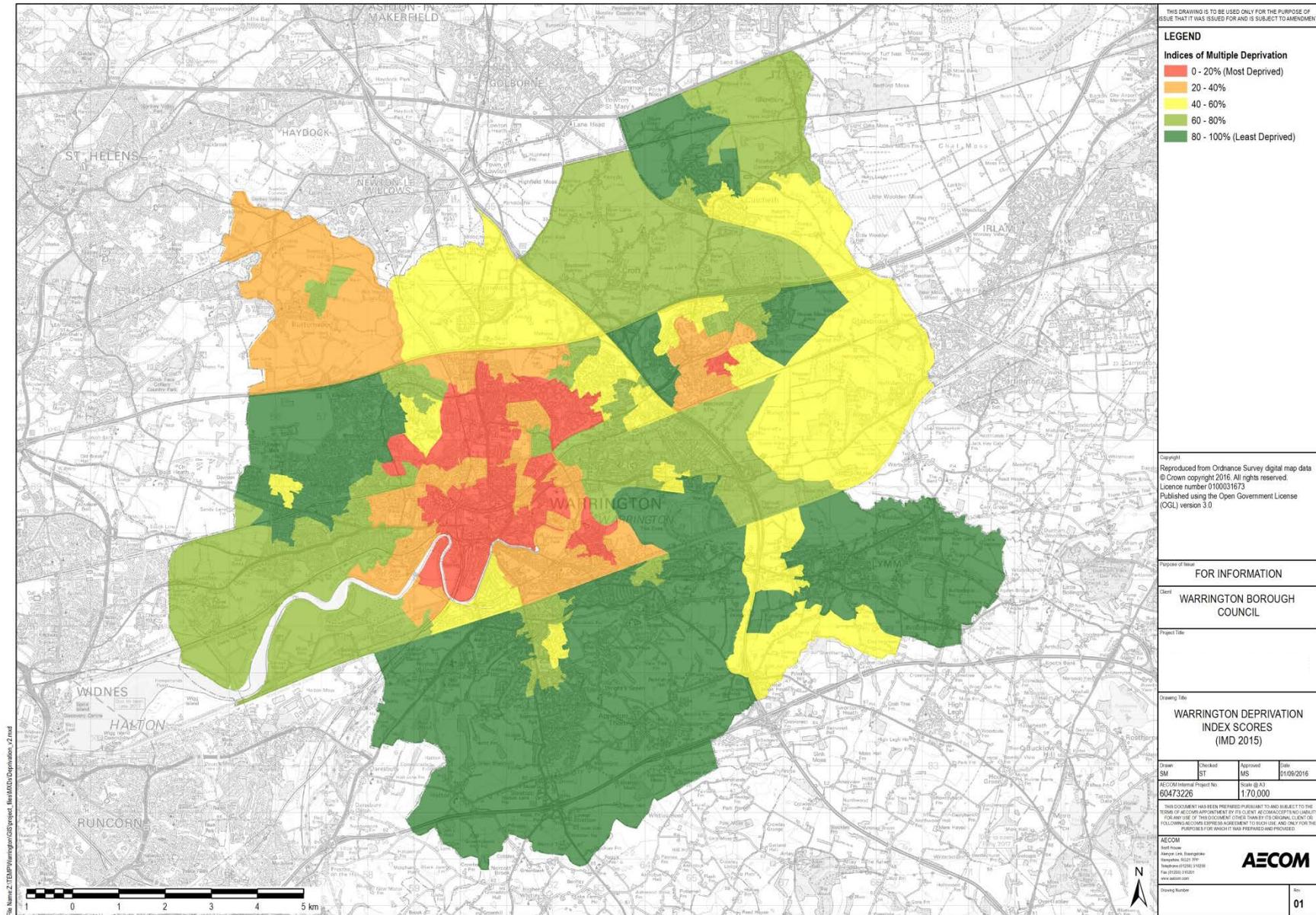
It is difficult to project the baseline, as deprivation is a complex interaction between multiple factors. Despite efforts to tackle deprivation through regeneration and community development initiatives, there has been little change in Warrington's position in the last 10 years; with a slight decline between 2010 and 2015. This trend may therefore be expected to continue. However, the Adopted and emerging Local Plan are predicated on a strategy of regeneration and renewal that should help to tackle deprivation and support communities in the areas of greatest need. This could help to reduce deprivation in Warrington in the longer term.

Good transport connectivity is essential to the efficient working of the economy as it enables the efficient movement of goods and people which subsequently reduces business costs and constraints that undermine productivity, output and access to markets.

Transport improvements can influence the location of economic activity in an area by making places into more productive locations for businesses, facilitating economic activity and regeneration. This can have an effect on employment and regeneration in Warrington.

⁹ Warrington Joint Strategic Needs Assessment (JSNA) (2015) The English Indices of Deprivation [online] available at https://www.warrington.gov.uk/download/downloads/id/9153/jsna_2015_-_deprivation_profile_imd_2015pdf.pdf

Figure 3.3: Indices of Multiple Deprivation (2015)



3.4 Health and Wellbeing

Contextual review

The **NPPF** identifies the importance of the social role of the planning system, which is defined as “*supporting vibrant and healthy communities*”, with a core planning principle being to “*take account of and support local strategies to improve health, social and cultural wellbeing for all*”. The **NPPF** further promotes the retention and development of local services and community facilities such as local shops, meeting places, sports venues, cultural buildings, public houses and places of worship. It states how the planning system can play an important role in facilitating social interactions and creating healthy, inclusive communities and sets out strategic policies to deliver the provision of health facilities. The location of facilities and services can have an influence upon transport and travel patterns.

Fair Society, Healthy Lives (‘The Marmot Review’)¹⁰ investigated health inequalities in England and the actions needed in order to tackle them. Subsequently, a supplementary report was prepared providing additional evidence relating to spatial planning and health on the basis that there is: “*overwhelming evidence that health and environmental inequalities are inexorably linked and that poor environments contribute significantly to poor health and health inequalities*”.

To ensure that the built environment promotes health and reduces inequalities for all local populations there is a need to:

- Fully integrate the planning, transport, housing, environmental and health systems to address the social determinants of health in each locality;
- Prioritise policies and interventions that both reduce health inequalities and mitigate climate change by improving active travel; good quality open and green spaces; the quality of food in local areas; and the energy efficiency of housing; and
- Support developments which provides high quality social infrastructure, including education, skills and sports facilities.

The NHS National Institute of Health and Clinical Excellence (NICE) have published guidance on **Local measures to promote walking and cycling**¹¹. The evidence presented in this report suggests that ‘effective support’ from local councils plays a key role in increasing rates of walking and cycling. It further suggests that increasing the numbers and frequency of people who walk and cycle can reduce the health costs associated with air pollution and inactivity. Relevant recommendations made in the report include:

- Ensure local, high-level strategic policies and plans support and encourage both walking and cycling;
- Develop coordinated, cross-sector programmes to promote walking and cycling for recreation as well as for transport, based on a long-term vision of what can be achieved, taking account of the needs of the whole population; and
- Address infrastructure issues that may prevent people from wanting to walk.

The Transport for the North **Draft Strategic Transport Plan** outlines the links between the transport network and health¹². It suggests how the network can have negative implications on health such as through air pollution, noise and safety.

¹⁰ The Marmot Review (2011) The Marmot Review: Implications for Spatial Planning [online] available at: <http://www.nice.org.uk/nicemedia/live/12111/53895/53895.pdf>

¹¹ National Institute for Health and Care Excellence (2012) Walking and cycling: local measures to promote walking and cycling as forms of travel or recreation [online] available at: <https://www.nice.org.uk/guidance/ph41/chapter/1-recommendations>.

¹² Transport for the North (2018) Draft Strategic Transport Plan [online] available at: https://transportforthenorth.com/wp-content/uploads/TfN-Strategic-Plan_draft_lr.pdf

However, the plan also recognises the opportunities for transport to enhance health and wellbeing through improved access to jobs, services and facilities, recreation and green space and sustainable transport modes/infrastructure.

The Warrington Partnership and the Warrington Health and Wellbeing Board have updated *The Warrington Health and Wellbeing Strategy* for the years 2015-2018. The Strategy, adopted in July 2015, is the overarching document for wellbeing in the borough. There are a series of priority outcomes, including the following which are particularly relevant to the Local Transport Plan:

- A strong economy which maximises opportunities for everyone, continuing to attract investment into key regeneration and infrastructure initiatives;

Increase the numbers of people using sustainable travel; and

- Develop highway infrastructure so that congestion is reduced and it is fit for future growth and regeneration¹³.

The Council has been working closely with its NHS Partners in preparing the *NHS Strategic Estates Plan for Warrington*. The Estates Plan provides an overview of existing NHS facilities, details committed improvements and provides an overview of capacity of health facilities against planned future housing development across the borough. Through this work it has been identified that there are parts of the borough which already have insufficient capacity to provide primary care for new residents and further areas will become progressively more constrained in the period to 2030 with new development.

The vision for Warrington is to develop new, and where practical, co-locate existing, health; social, cultural and community facilities in order to improve access to services, promote wellbeing and maximize opportunities for healthy living. Having sustainable modes of travel to such facilities is important to support healthy lifestyles.

Population: The current and projected baseline

Warrington's resident population is currently 209,000 (mid-year estimate 2016, rounded to the nearest hundred) which represents an increase of 2,300 (1.1%) from 2014. By 2036 the population of Warrington is projected to increase to 225,100 people, a percentage change of 7.7% on 2016 estimates.

Of particular significance is the projected increase in the population aged 65+. By 2036 it is projected that there will be approximately 56,200 people aged over 65 living in the borough: a rise of almost 50% on current figures. Increasing life expectancy and population ageing have a number of implications.

An important issue is that there are proportionally less individuals to pay taxes, work and provide care for those who need it. The old age dependency ratio is a method used to measure the proportion of people of working age compared with those aged over 65¹⁴. An increase in the number of older people may also have implications with regards to mobility and accessibility.

The old age dependency ratio in Warrington has been decreasing over recent years and this is projected to continue. In 2013, there were 3.6 people of working age for every person aged over 65 years. By 2037, based on current projections, this is estimated to decrease to 2.3 working age people for every person aged 65+. Furthermore, if increases in life expectancy are not matched with improvements in health, the implications for health and wellbeing will be significant.

¹³ Warrington Partnership (2015) *Warrington Partnership (2015) Warrington Health and Wellbeing Strategy 2015 - 18* [online] available at www.warringtontogether.co.uk/media/.../health-and-wellbeing-2015-18-low-res.pdf

¹⁴ ONS *Sub-national population projections (2016 base) OADR projections based on population aged 65+*. Local crude analysis is based on persons aged 65+. Changes to state pension age (SPA) will help to mitigate the impact. However, national projections suggest that the OADR will still decrease substantially despite the current known changes to SPA. Further, local analysis is underway to refine these estimates.

Without increases in healthy life expectancy there will be significantly more people with age-related health and care needs; placing growing demand on health and social care services in the future. Interventions which seek promote healthy ageing and retain independence are crucial in order to mitigate the impact on health and social care resources. This includes ensuring that people have good access to health and social care resources.

The right quantity and distribution of appropriate, quality housing which is accessible, adaptable and which supports care in the community and independent living is needed to accommodate the ageing population.

Homes that are constructed to minimise energy waste and fuel poverty will help reduce the excess burden of ill-health and mortality known to be attributable to poor quality housing. Whilst this is pertinent population-wide, a recent report published by the Government Office for Science about the future of ageing population highlighted that older people are more at risk of poor quality housing¹⁵. Unsuitable housing (for example cold and damp homes) is associated to an excess of winter deaths¹⁶ and within Warrington excess winter mortality is substantially higher amongst older age-groups. Unsuitable housing is also associated with falls in the elderly; with 25% of them occurring at home¹⁷.

Health and wellbeing – the current and projected baseline

Health Outcomes

Overall, health outcomes in Warrington are improving, but there is still a gap with England for overarching measures of population health and wellbeing.

Life expectancy for males in Warrington is currently 78.9 years.¹⁸ Although this has increased by 2.6 years over the last 10 years, it remains significantly lower than England (79.5 years). For women, life expectancy has increased by 1.2 years, from 80.7 years to 81.9 years. As for men, this is significantly lower than the England average 83.1 years.

Substantial progress has been made in tackling some of the major causes of premature death in Warrington over recent years, but as with life expectancy, there is further scope for improvement in some areas to reduce rates so that they are in-keeping with the average for England.

Premature deaths from all cancers: Longer term trends show that death rates have been reducing. However, latest data shows an increase in rates locally; against a sustained decline nationally which means the rate in Warrington is now significantly above the England average.

Premature deaths from cardiovascular diseases (CVD): Much progress has been made in reducing premature deaths from CVD over previous years and there has been a steady year-on-year decrease in the rates¹⁹, which means the rate in Warrington is now in-keeping with the average for England.

¹⁵ Future of ageing population. Government Office for Science 2016. [online] available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/535187/gs-16-10-future-of-an-ageing-population.pdf

¹⁶ ONS (2016) Excess winter mortality in England and Wales, 2015/16 (provisional) and 2014/15 (final). Statistical Bulletin. 23 November 2016 [online] Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/excesswintermortalityinenglandandwales/previousReleases>

¹⁷ Ed Harding – International Longevity Centre UK. (2008). Sustainable planning for housing in an ageing population: A guide for regional-level strategies

¹⁸ Office for National Statistics: Life Expectancy Trends. Latest time period 2014-2016

¹⁹ Note that there has been a slight increase in the latest figures for the year 2014-16 following a long period of year-on-year decrease. This may be a single variation and thus insignificant or the start of a change in pattern. It is currently too early to assess.

Health Related Behaviour and Self-Reported Wellbeing

Many deaths and illnesses could be avoided by adopting healthier lifestyles: It is estimated that a substantial proportion of cancers, around 30% of circulatory diseases and a large proportion vascular dementia could be avoided by reducing smoking rates, improving diet and increasing physical activity.²⁰

There is substantial evidence on the impact of the built environment on levels of obesity and physical activity. The briefings developed by Public Health England and the Local Government Association summarise the evidence base,^{21,22} and the NICE Public Health guidelines PH8²³ and PH41²⁴ provide evidence-based recommendations on physical activity (walking and cycling) as well as how to improve the physical environment to encourage physical activity.

Obesity: Prevalence of excess weight amongst adults in Warrington has increased over recent years. Latest estimates suggest that over two-thirds (65.7%) of adults are overweight or obese²⁵. This is significantly higher than the average for England (61.3%), and above the regional average (63.3%). There is variation within Warrington and amongst different population sub-groups: prevalence is highest amongst middle aged men, and people living in more deprived areas²⁶. Tackling obesity effectively needs a multi-faceted approach combining changes at policy level and work to change social norms, in addition to individual lifestyle interventions. Although prevalence of excess weight in children is in-keeping with the average for England, based on the latest data 22% of 4/5 year olds and 32% of 10/11 year olds in Warrington are overweight or obese²⁷.

Poor diet: Approximately half of Warrington adults (49.5%) report not eating the recommended 5 portions of fruit and veg per day. This is slightly worse than the average for England. Almost 30% of residents report eating takeaways or fast food at least once a week. People living in the more deprived areas of the borough are significantly more likely to have a poor diet. Access to local shops selling quality produce, and proximity to, and density of fast-food outlets are factors which have been linked to obesity²³.

Physical activity: Around 30% of Warrington adults are inactive; slightly higher than the average for England²⁸. As with many other lifestyle factors, people living in the most deprived areas of the borough are much less likely to be physically active. Evidence shows regular physical activity can help to prevent and manage over 20 chronic conditions, including: Type 2 diabetes by up to 40%, cardiovascular disease by up to 35%, dementia by up to 30%, depression by up to 30% and risk of hip fracture by over 60%. Furthermore, there is strong evidence to suggest that green spaces have a beneficial impact on both physical health and mental wellbeing through both physical access and usage. This is particularly relevant in older people, in which physical activity has been associated with an improvement in their cognitive performance²⁹ (including people with dementia³⁰), reducing the morbidity and mortality and improving their wellbeing [29]. NICE public health guideline PH16 also makes evidence-based recommendations on physical activities programs (including walking schemes, dancing, and swimming) in people over 65 years old to improve their mental wellbeing³¹. Approximately 18% of Warrington residents report using outdoor space for physical activity or health reasons³².

²⁰ Department of Health – Our Health and Wellbeing Today, 2010

²¹ Public Health England (2013) Obesity and the environment: increasing physical activity and active travel

²² Public Health England (2014) Obesity and the environment: regulating the growth of fast-food outlets

²³ Physical Activity and the Environment (2008) public health guideline (PH8)

²⁴ Physical activity: walking and cycling (2012) NICE public health guideline PH41

²⁵ Public Health Outcomes Framework: Sport England Active People Survey (2016-17)

²⁶ Warrington Borough Council: Health and Wellbeing Survey 2013

²⁷ National Child Measurement Programme 2015/16

²⁸ Public Health Outcomes Framework: Sport England Active People Survey (2016-17)

²⁹ Future of ageing population. Government Office for Science 2016. [online] available at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/535187/gs-16-10-future-of-an-ageing-population.pdf

³⁰ Forbes D, Forbes SC, Blake CM, Thiessen EJ, Forbes S. Exercise programs for people with dementia. Cochrane Database Syst Rev. 2015 Apr 15;(4):CD006489.

³¹ Mental wellbeing in over 65s: occupational therapy and physical activity interventions (2008) NICE public health guideline PH16

³² Public Health Outcomes Framework: Natural England MENE survey. N.B figure based on small sample

Emotional wellbeing: At the time of the last population-wide survey²⁵, one-quarter of all adults in Warrington had low levels of emotional wellbeing. There was a strong association with socio-economic deprivation, and low emotional wellbeing was more common in the most disadvantaged areas. Emotional wellbeing is influenced by many factors, including genetic inheritance, childhood experiences, life events, individual ability to cope and levels of social support. Factors such as adequate housing, feelings of safety, employment, financial security and access to appropriate health care also contribute to overall feelings of wellbeing. Loneliness and social isolation is linked to emotional wellbeing and personal resilience. Within Warrington there is a strong association between loneliness and deprivation; 13% in the most deprived areas said they felt lonely compared to 6% in the least deprived. Furthermore, residents of more socially disadvantaged areas reported feeling less connected to their local area.

Financial management/fuel poverty: Hardship and financial worries are also known to cause stress and impact on emotional wellbeing. At the time of the last local survey²⁸ 8% of residents reported that they were finding it difficult to manage financially, and although official measures of fuel poverty suggest that rates are lower in Warrington than nationally, 10% of residents reported going without heating to manage financially.

Health inequalities: Local analysis³³ shows that the burden of disease is greater amongst residents of Warrington's more deprived areas: Over 80% of the excess mortality from heart disease and stroke within Warrington is amongst people living in the most deprived 40% LSOAs. There is a gradient apparent between most health outcomes and deprivation, and prevalence of most health-harming behaviours is higher in more deprived areas.

Community Safety – The current and projected baseline

In the long-term, the crime rate in Warrington has experienced a steady decline. However, recent trends indicate a sharp increase in crime. **Figure 3.4** below shows the total recorded crimes between 2011 and 2018³⁴.

The natures of the crimes are shown in **Figure 3.5**, along with a comparison of the 12 months to December 2016 and December 2017. In 2016, the crime type with the highest rate in Warrington was 'criminal damage and arson'. This has increased by 481 offences in 2017; however, the crime type falls short of the 3,552 offences of 'Public order' recorded during the year³⁵.

It is reasonable to assume that in the short-term the crime rates will continue to increase steadily within the Borough, in keeping with recent trends. However, in the long-term, the crime rate may fall, reflecting long-term trends in the Borough. Ultimately, crime rates are influenced by a range of factors, which could lead to unpredictable variations in trends. Particularly important factors would be a reduction in public spending on policing and rehabilitation, an increase in unemployment, a shortage of affordable housing, or a lack of community and youth facilities. It is difficult to predict trends in these factors, but the Adopted Local Plan does seek to address these issues, which could help to revive a downward trend.

Urban areas and deprived areas have traditionally experienced higher rates of crime, and these trends are also expected to continue.

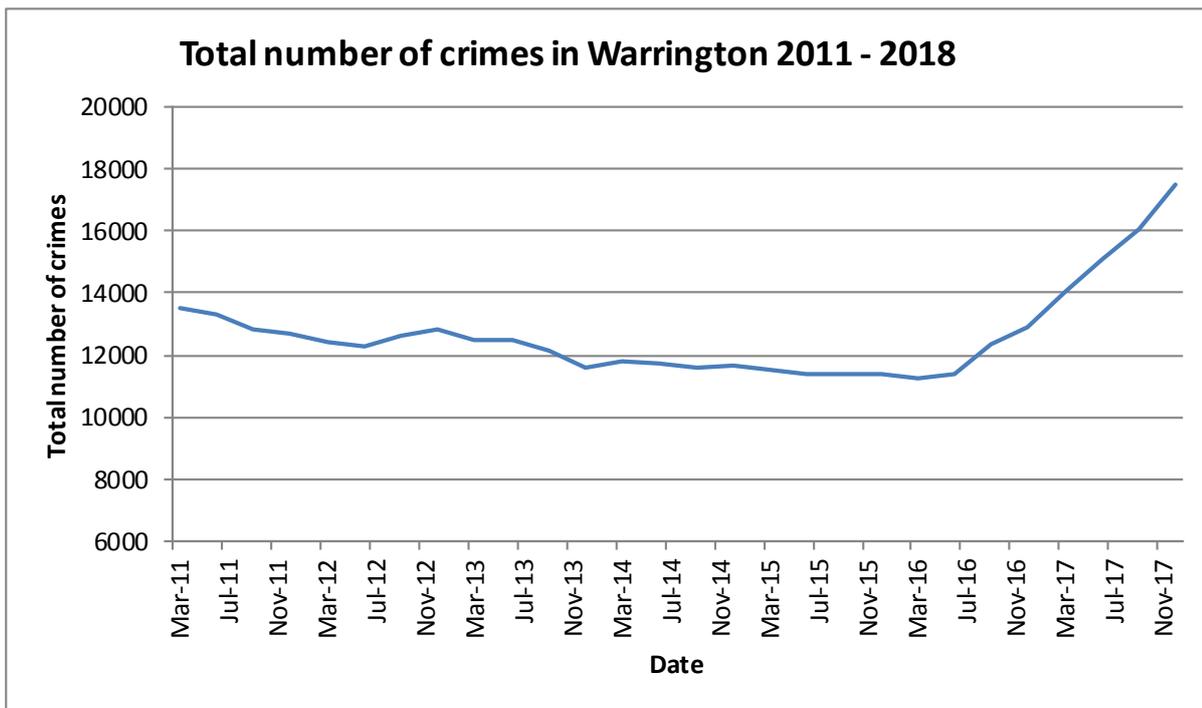
³³ Warrington Borough Council Public Health Intelligence Reports

³⁴ Crime Survey England and Wales (2018)

<https://www.ons.gov.uk/file?uri=/peoplepopulationandcommunity/crimeandjustice/datasets/recordedcrimedatatacommunitysafetypartnershiplocalauthoritylevel/current/prcllocalauthoritytables.zip> (accessed June 2018)

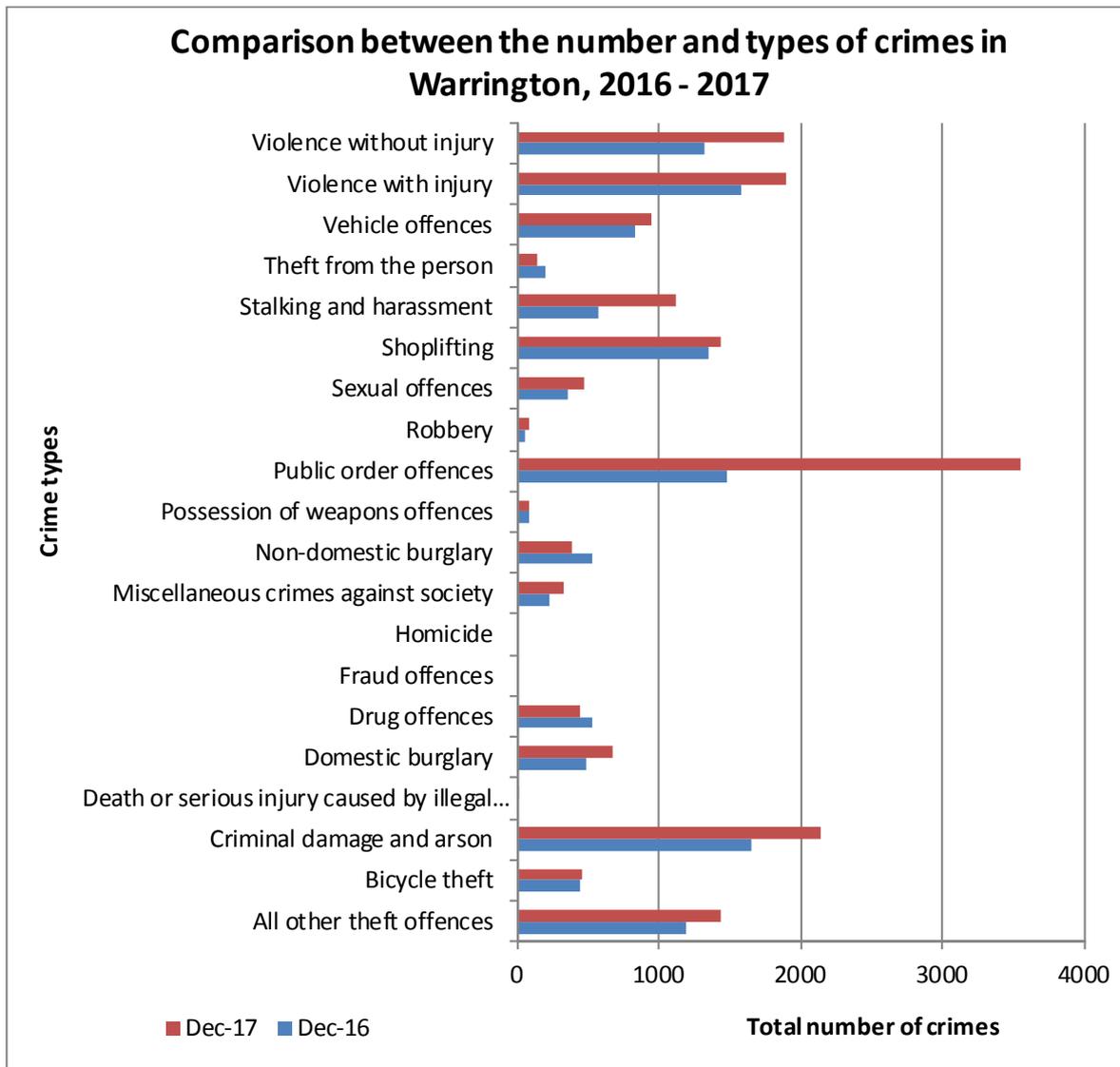
³⁵ Ibid.

Figure 3.4: Crime in Warrington 2011-2018



Source: ONS – Crime Survey England and Wales (2018)

Figure 3.5: Comparison in crime in Warrington from 2016-2017



Source: ONS – Crime Survey England and Wales (2018)

Open space and recreation – Current and projected baseline

The total number of formal open space sites across the borough increased between 2012 and 2015; however variations have been experienced across the typology of sites.

Most of the types of open space sites have increased in number since 2012. The largest increases were experienced with regards to Green Corridors (+62 sites), Parks & Gardens (+40 sites), and Natural/ Semi Natural Green Space and Incidental Space, both of which increased by 30 sites. Equipped Play Sites have experienced a decrease in number, but have countered this by combining the remaining sites, enabling larger facilities. On balance, there was a positive change across the borough which resulted in +145 extra open space sites being made available, equating to 260 hectares³⁶.

Each ward across the Borough has varying access to the types of open space. The largest provisions of allotment space are located in Latchford West (3.91 ha), Lymm (3.68 ha), and Fairfield & Howley (2.66 ha), compared to 14 of the 22 wards which do not have access to any allotment spaces.

³⁶ Open Space Audit 2015, Warrington Borough Council (2016), Available: https://www.warrington.gov.uk/info/200564/planning_policy/1905/evidence_base/3,

Bewsey & Whitecross has the greatest provision of Equipped Play spaces, with 1.38ha, whilst Stockton Heath has the lowest provision at just 0.08ha. With regards to Green Corridors, Westbrook is recorded as the ward with considerably the highest provision (22.28ha), Whittle Hall has the largest amount of Incidental Space (7.70ha), and Burtonwood & Winwick has the largest provision of Informal Play sites (12.35ha).

Predominantly, the overall distribution of all open space sites shows a tendency to be concentrated towards the higher density populations within the center of the Borough, with varying spread depending on the typology of the site.

3.5 Accessibility

Contextual Review

The **NPPF** states that the transport system should be ‘*balanced in favour of sustainable transport*’, with developments to be located and designed to facilitate these modes of travel, in order to minimise journey lengths for employment, shopping, leisure and other activities. Planning policies should also aim for ‘*a balance of land uses*’ and wherever practical, key facilities should be located within walking distance of most properties.

Higher levels of walking and cycling could reduce congestion, improve local environmental quality, improve personal health and reduce transport-related CO₂ emissions³⁷. Plans should therefore ensure that strategic policies support and encourage both walking and cycling³⁸.

The **Transport for the North Strategic Transport Plan**³⁹ sets out a plan for transport infrastructure investment in the North of England with an aim of supporting economic growth through enhanced connectivity and higher productivity.

The **One Warrington: One Future - Local Transport Plan (LTP3)**⁴⁰ sets out the Local Transport Plan Strategy for the period 2011-2030. The objectives of LTP3 are to build and manage a transport network that:

- Is integrated and customer focused and reduces the need to travel by car;
- Enables the regeneration of the Borough and supports economic growth;
- Maintains the highway, minimises congestion for all modes of travel and enables Warrington’s ‘smart growth’;
- Improves everyone’s access to health, employment, education, culture, leisure and the natural environment;
- Improves everyone’s access to the town centre by all modes of travel;
- Enhances accessibility for those in disadvantaged communities or groups;
- Improves neighbourhoods and residential areas;
- Improves safety and security for all modes of travel;
- Enhances the image and profile of the place;
- Improves the quality of public space making Warrington more welcoming;
- Protects and enhances the natural environment;
- Reduces the impact of traffic on air quality in Warrington and helps to reduce carbon emissions and tackle climate change;
- Makes Warrington safer, sustainable and healthier; and

³⁷ Lancaster University, University of Leeds & Oxford Brookes University (2011) Understanding Walking and Cycling: Summary of Key Findings and Recommendations [online] available at: http://www.its.leeds.ac.uk/fileadmin/user_upload/UWCReportSept2011.pdf (accessed 08/2012)

³⁸ National Institute for Health and Care Excellence (2012) Walking and cycling: local measures to promote walking and cycling as forms of travel or recreation, Public Health Guidance PH41 [online] available at: <http://guidance.nice.org.uk/PH41>

³⁹ Transport for the North (2018) Strategic Transport Plan [online] available at: <https://transportforthenorth.com/stp/>

⁴⁰ Warrington Borough Council Local Transport Plan 3 2011-2030

- Integrates with transport networks outside Warrington to enhance the sustainability of cross boundary travel.

Though these objectives will be replaced / updated by the LTP4, it is useful to understand the context within which the new plan is being prepared.

Accessibility: The current and projected baseline

Warrington lies at the hub of the region's communications network. The M6, M56 and M62 motorways intersect within the borough, providing excellent access to all parts of the region and beyond. Warrington also lies on the region's main North-South (West Coast Main Line) and East-West (Trans-Pennine) rail routes. In the longer term, there will be access to the HS2 lines, which should improve access to employment opportunities in particular.

Taken from the 2011 Census and Annual Monitoring Report (2017⁴¹), the following list identifies some key statistics relating to travel in Warrington:

- The percentage of households with no car is lower in Warrington (19.3%) than regionally (28.0%) and nationally (25.6%) (Census 2011);
- The percentage of households with one car is similar in Warrington to the regional and national situation at approximately 41.8% (Census 2011);
- There is a higher percentage of households in Warrington with two or more cars/vans (38.9%) than both regionally (29.5%) or nationally (32.1%) (Census 2011);
- Travel to work data for Warrington shows 59.2% of commuters into Warrington come from within the Warrington Area, followed by St Helens (13.8%), Wigan (13.3%) and Halton (11.8%) (AMR 2017);
- The most popular areas for commuting out of the borough are Halton (13.4%), Manchester (12.1%) and Trafford (9.2%) (AMR 2017);
- Car ownership in Warrington is higher than regional and national levels with higher percentages of households (38.9% compared to 29.5% regionally and 32.1% nationally) owning two or more vehicles and lower percentages owning no car at all (AMR 2017); and
- A lower percentage of residents aged 16 to 74 in employment in Warrington cycle or walk (6.4%) than is the case regionally (7.6%) or nationally (8.2%) (AMR 2014⁴²).

Figure 3.6 illustrates the location of key services and facilities throughout the Borough. As would be expected, the town centre of Warrington is served by the widest range of services and facilities. There is also a good range of essential facilities and good access links from other settlements outside the Warrington urban area including areas such as Lingley Mere, Birchwood and Padgate, which have good train and public transport links.

Other larger settlements such as Lymm and Culceth are served by a range of facilities, but are more likely to be reliant on private car use to access higher order services and employment. Smaller settlements in 'rural' areas such as Appleton Thorn, Burtonwood, Winwick and Croft are served by a lower number of essential services, and rely upon larger service centres to access GPs, secondary schools and other services.

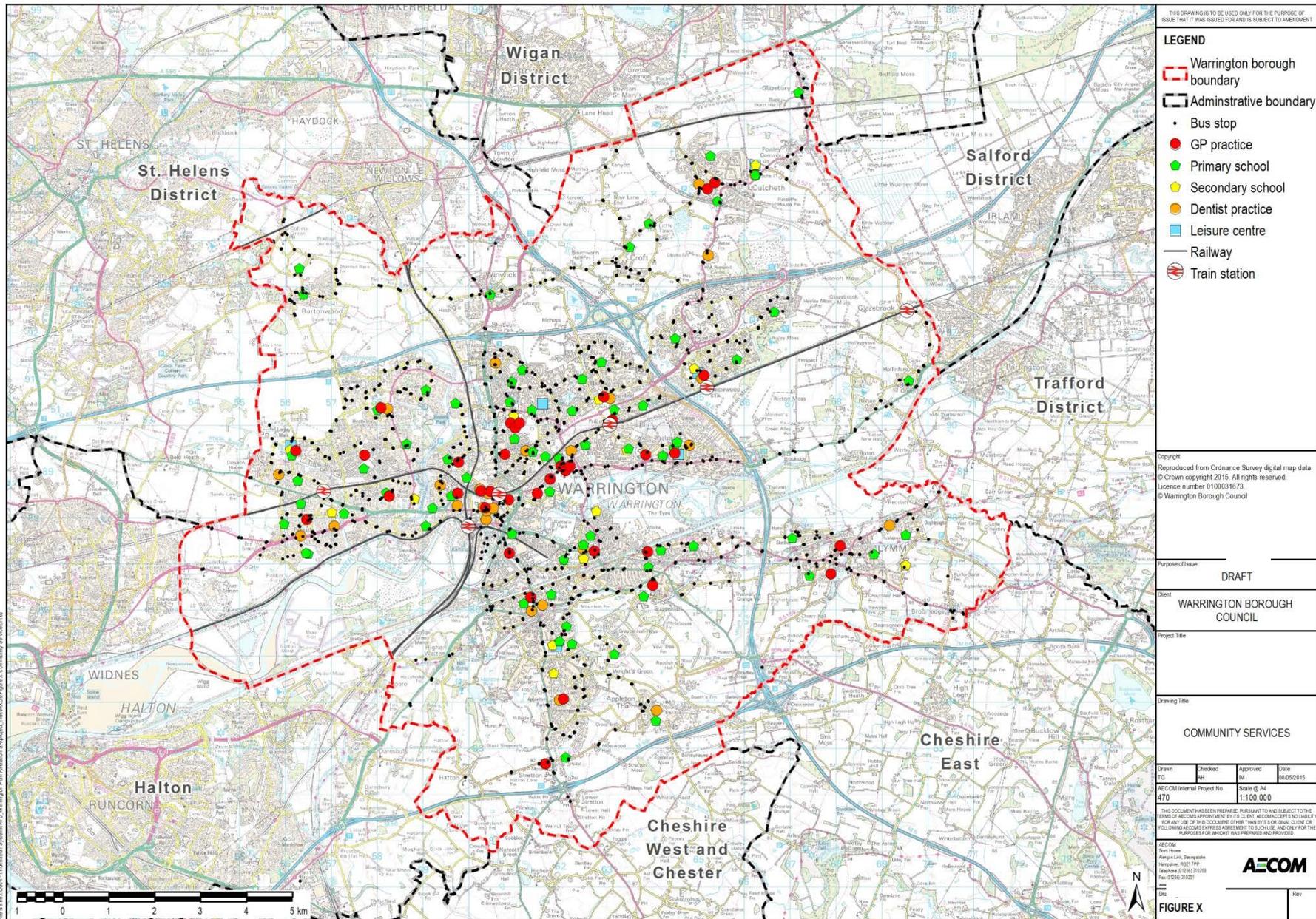
As well as establishing how accessible essential services are in terms of proximity, it is also important to understand whether services are capable of accommodating further growth. This will help to identify where development would need to fund expansions to facilities such as schools and GPs, where this may not be

⁴¹ Warrington Borough Council (2017) Annual Monitoring Report [online] available: https://www.warrington.gov.uk/downloads/file/11831/annual_monitoring_report_-_1_april_2016_-_31_march_2017

⁴² Warrington Borough Council (2014) Annual Monitoring Report.

possible (due to site constraints for example) or where a surplus exists and development would actually make facilities more viable.

Figure 3.6: Community facilities and services



3.6 Housing

Contextual Review

The **NPPF** seeks to significantly boost the supply of new homes. To achieve this it states that local planning authorities should have a clear understanding of housing needs in their area. They should prepare a Strategic Housing Market Assessment (SHMA) to assess their full housing needs, working with neighbouring authorities where housing market areas cross administrative boundaries. The Strategic Housing Market Assessment should identify the scale and mix of housing and the range of tenures that the local population is likely to need over the plan period.

The **NPPF** states that in order to create ‘sustainable, inclusive and mixed communities’ authorities should ensure affordable housing is provided. It is important to ensure that new housing is located in accessible locations and is supported by appropriate transport infrastructure.

DCLG Planning Policy for Traveller Sites (2015) sets the policy context for traveller sites, stating that planning authorities use robust evidence to identify needs; set appropriate targets or criteria based policies; and ensure that traveler sites are sustainable economically, socially and environmentally (which means that sites should be accessible, safe, well integrated with communities and limit effects on the environment).

Housing: The current and projected baseline

In 2016/17, Warrington saw the completion of 492 net additional new dwellings (taken from 521 gross completions minus 29 losses). This compares to 595 net new additional dwellings reported in the last monitoring period (2015/16) and 687 in 2014/15.

Of the 521 gross new dwellings in this period, 509 (98%) were on previously developed land (PDL). 72 of these were affordable housing completions. This percentage is a small increase (4%) on that reported in the previous monitoring period (2015/16).

Warrington Borough Council released their latest SHMA (in conjunction with Halton and St Helens) in January 2016. It provides the information to understand the housing need for Warrington and the ‘Mid Mersey’ HMA as a whole. The 2012 projections estimate that there were 87,981 households in Warrington in 2014, which is anticipated to rise to 106,682 2037. This is an average increase of 840 households per year between 2014 and 2037.

There are currently 20 authorised gypsy & traveler pitches within the Borough. This is a return to the number of pitches in 2013/2014, following a drop in 2014/15 with the expiration of the temporary permission at Two Acre Caravan Park in Walton. There are currently 6 unauthorised pitches at Grappenhall Lodge⁴³.

Over the last 5 years, overall average house prices in Warrington increased by 20% (from £177,990 in 2012 to £213,917 in 2017), there was also an increase of 22% in the North West (from £154,967 in 2012 to £189,103 in 2017) and a 23% increase in England and Wales as a whole (£238,192-£292,889).

Table 3.2: Average House Prices 2017

	Detached (£)	Semi-Detached (£)	Terraced (£)	Maisonette/flat (£)	All (£)
Warrington	335,462	194,911	141,554	117,968	213,917
North West	318,566	181,100	126,323	144,018	189,103
England and Wales	395,717	249,182	237,219	301,057	292,889

Source: Land Registry (2017)

⁴³ Warrington Borough Council (2017) Annual Monitoring Report [online] available: https://www.warrington.gov.uk/downloads/file/11831/annual_monitoring_report_-_1_april_2016_-_31_march_2017

Warrington Borough Council's latest Strategic Housing Land Availability Assessment (SHLAA) findings are contained in the 2017 AMR. The detailed assessment findings stated that a total of 323 sites, covering approximately 2,474 Hectares, were identified for and subsequently included within the 2017 SHLAA. Of the 323 sites, 245 (76%) were rolled forward from the 2016 study and hence 78 sites are new sites.

Of the 323 sites identified, 45 (14%) had a planning approval on the 1st April 2017. 128 (40%) of the 323 sites identified constituted previously developed land, 176 (54%) were on greenfield land and 19 (6%) were considered to be part previously developed/part greenfield.

3.7 Natural Resources

Contextual Review

Water

The **NPPF** states that local planning authorities should produce strategic policies to deliver the provision of a variety of infrastructure, including that necessary for water supply.

The **White Paper, Water for Life** says that authorities should encourage and incentivise water efficiency measures at the demand side⁴⁴.

In most cases, and for most of the time, in North West England, there is adequate water available for abstraction. The regional priorities as set out in the **Water Resources Management Strategy** are to reduce the contribution to climate change and to protect sensitive environmental habitats, predominately in Cumbria⁴⁵.

The Environment Agency guidance **Groundwater Protection: Principles and Practice (GP3)**⁴⁶ describes the Environment Agency's approach to the management and protection of groundwater in England and Wales. It provides a framework to manage and protect groundwater. This framework takes account of the government's sustainable development strategy and the water strategies of Defra.

Air quality

The **NPPF** identifies that 'Planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan'.

The **UK Air Quality Strategy**⁴⁷ sets out air quality objectives and policy options to further improve air quality in the UK. This is supplemented by more recent guidance on how air pollution and climate objectives can be realised together through an integrated policy approach.

The Defra report **Action for air quality in a changing climate**⁴⁸ focuses on the synergies between the two issues of air quality and climate change. In particular, it notes the potential for additional health benefits through the closer integration of climate and air pollution policy. It is suggested that co-benefits can be realised through a variety of means, including promoting low carbon vehicles and renewable energy.

The **Warrington Air Quality Action Plan**⁴⁹ sets out how the council will tackle air quality issues within its control. This includes a series of actions with those relevant to the LTP including working with Highways England to improve air quality along the local motorway, sustainable transport strategies covering walking, cycling and other less emitting forms of transport and improvements to road and rail infrastructures.

Soil and land

In **Safeguarding our Soils: A strategy for England**⁵⁰, a vision is set out for the future of soils in the country.

⁴⁴ Defra (2011) Water for life (The Water White Paper)

⁴⁵ United Utilities, Final Water Resources Management Plan, 2015

⁴⁶ Environment Agency (2013) Groundwater Protection: Principles And Practice (GP3) [online] available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/297347/LIT_7660_9a3742.pdf

⁴⁷ Defra (2007) Air Quality Strategy for England, Scotland, Wales and Northern Ireland [online] available at: <http://www.defra.gov.uk/environment/quality/air/air-quality/approach/>

⁴⁸ Defra (2010) Air Pollution: Action in a Changing Climate [online] available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69340/pb13378-air-pollution.pdf

⁴⁹ Warrington Borough Council (2018) Air Quality Action Plan.

⁵⁰ Defra (2009) Safeguarding our soils:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69261/pb13297-soil-strategy-090910.pdf

An element of this vision is the condition of soils in urban areas, which are to be “sufficiently valued for the ecosystem services they provide and given appropriate weight in the planning system”.

Good quality soils in urban areas are recognised as being “*vital in supporting ecosystems, facilitating drainage and providing urban green spaces for communities*”. It is also important to protect areas of the best and most versatile agricultural land from development.

Preventing the pollution of soils and addressing the historic legacy of contaminated land is another element of the reports vision.

The current and projected baseline

Water

The majority of Warrington is built on the floodplain of the River Mersey, with about three quarters of the urban area lying between 5 and 12 metres above sea level (AOD). The main source of fluvial flooding is the River Mersey and its five key tributaries, which flow through the centre of the borough.

The Manchester Ship Canal plays a vital role in managing fluvial flood risk along the Mersey. Although principally a navigation canal, the canal provides a floodwater bypass channel for Warrington, which significantly reduces the incidence of flooding from fluvial flows.

As a requirement of the Water Framework Directive (WFD) the water quality of rivers and lakes in England must be established in terms of their ecological and chemical quality. Measures must then be put in place to protect and improve water quality. Ecological quality is categorised as; bad, poor, moderate, good or high and chemical quality is assessed as either ‘good’ or ‘fail’ (or does not require assessment). Water quality in Warrington was assessed in 2015 as part of the River Basin Management Plan process. The findings at that time were that:

- The River Mersey’s ecological quality was classed as ‘moderate’, with its’ chemical quality classed as ‘good’;
- The Sankey Canal was classed as having ‘moderate’ ecological quality and a ‘good’ chemical quality;
- Sankey Brook was classed as having poor ecological quality, although the chemical quality was classed as good.

The Water Framework Directive should ensure that there will be no deterioration in the ecological status of Warrington’s rivers from 2009 baseline conditions.

The Water Framework Directive seeks to ensure that the hydromorphology (*the physical form and flow*) of rivers is protected and restored where damage has occurred. The ecology of Warrington’s rivers has suffered greatly due to physical modification, and this is one of the reasons for failure to meet WFD requirements. Channels have been straightened, deepened and over-widened, culverts installed and weirs constructed and this has negatively impacted the ecological status of several rivers in Warrington. By 2027, Warrington’s rivers must either reach “*good ecological status*” or “*good ecological potential*” (the latter for “*heavily modified*” waterbodies).

Good ecological status is defined as conditions slightly lower than those seen in a natural pristine river. Good ecological potential is the best a river can be for ecology whilst still fulfilling a flood risk management, water resource or navigation purpose. There can be no deterioration in the ecological status of Warrington’s rivers from 2009 baseline conditions. Measures have been identified in the River Basin Management Plan to enhance hydromorphology and, therefore, improve river habitats for wildlife and overall ecological status. Some of these enhancement measures may also reduce flood risk in Warrington through increased flood water storage.

Warrington is at risk from many different sources of flooding including; main rivers, ordinary watercourses, surface water runoff, sewer flooding and the residual risks associated with artificial water bodies such as the Bridgewater Canal, the Manchester Ship Canal and reservoirs.

As a result of climate change, flood risk in Warrington is likely to become more of an issue, with an increase in the frequency and depth of flooding of floodplains expected. In addition, more intense storm events as a result of climate change could lead to an increase in surface water flooding and flash flooding across the Borough.

These risks have the potential to be alleviated through Sustainable Urban Drainage Systems. The Adopted Local Plan (Policy QE4) also states that the Council will only support development proposals where the risk of flooding has been fully assessed and justified by an agreed Flood Risk Assessment.

Flood risk has the potential to cause disruption to transport routes as well as affecting accessibility to services.

Air Quality

Warrington Borough Council is responsible for the review and assessment of air quality in the Borough. There are two AQMA designations in Warrington;

- AQMA 1 - A 50m continuous strip on both sides of the M6, M62 and M56 motorway corridors.
- AQMA 4 - Covering the link roads and the town centre ring road.

Both AQMAs are designated due to their levels of Nitrogen Dioxide (NO₂). An Air Quality Action Plan (2017-2022)⁵¹ has been produced and covers both AQMAs, presenting a series of short term and long term actions.

Soil and Land

In Warrington during the 2016/17 monitoring period, the percentage of dwellings completed on previously developed land has remained high at 98%. 2016/17 also saw the completion of 33,463 Sq.M. of new commercial floorspace across 2 sites totalling 8.08 Ha. This was partially achieved on previously developed land.⁵²

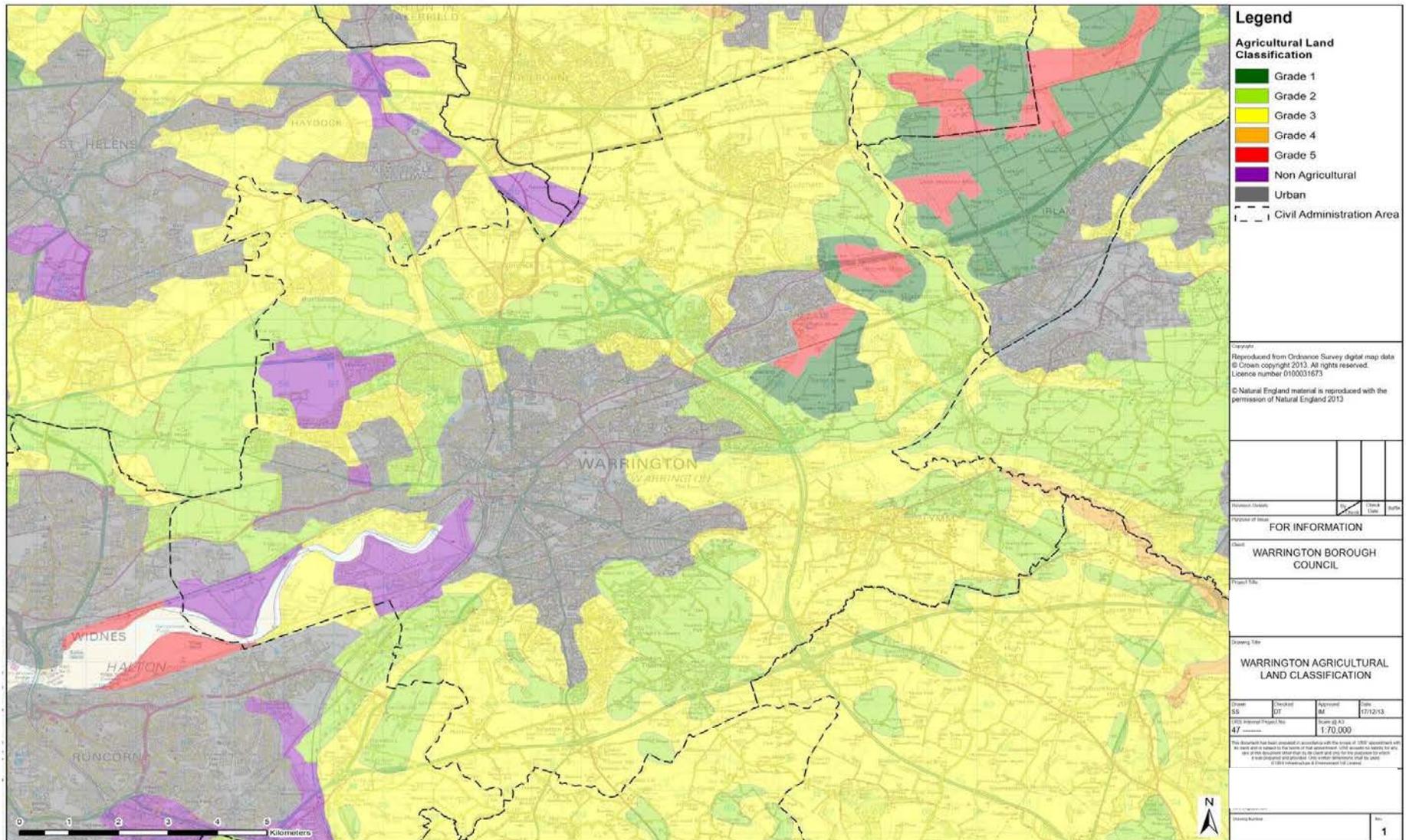
The Agricultural Land in Warrington is predominantly Grade 2 and 3, which is classified as 'the best and most versatile'. There are only two pockets of Grade 1 land, which are located to the east of the Borough, in the fields north of Manchester Road. The Agricultural Land in Warrington is shown in **Figure 3.7**. It should be noted that Grade 3 land is not split between Grade 3a (which is classified as 'best and most versatile' and Grade 3b (which is not).

The Adopted Local Plan Core Strategy prioritises urban regeneration, which will help to minimise effects on agricultural land. However, the Plan could influence the release of greenfield land for transport infrastructure development, which could result in a loss of some agricultural land.

⁵¹ Warrington Borough Council (2018) Air Quality Action Plan.

⁵² Warrington Borough Council (2015) Annual Monitoring Report [online] available: https://www.warrington.gov.uk/dow_nload/dow_nloads/id/10037/amr_2015.pdf

Figure 3.7 - Agricultural Land Classification in Warrington



Minerals

In terms of Geology, Carboniferous Pennine Coal Measures are present in the north-western tip of Warrington, whilst younger, Permo-Triassic rocks cover much more of the Borough. Glaciofluvial Deposits are located predominantly in the central northern areas of the Borough. Sand and gravel has historically been quarried in the Borough, and Southworth Quarry, an active sandstone quarry, is also located near its northern border in Croft Parish. This is the only aggregate producing quarry in Warrington, and has planning permission for operation until 2025.

Coal Bed Methane is extracted within the Borough, whilst clay is extracted at sites in the east (Rixton). There are also sites of secondary and recycled aggregate production at Fiddlers Ferry Power Station, Southworth Quarry and Woolston Deposit Ground Bed No. 1.

According to the Greater Manchester, Merseyside and Halton, and Warrington Joint Local Aggregate Assessment⁵³, the priorities for Warrington with regards to minerals include:

- Prioritise the use of secondary and recycled material
- Safeguard critical transport infrastructure
- Provide for windfall applications appropriately
- Monitor landbank adequacy annually

⁵³ Greater Manchester, Merseyside and Halton, and Warrington, Joint Local Aggregate Assessment (2014), Available: https://www.warrington.gov.uk/info/200564/planning_policy/1905/evidence_base/5, Last Accessed: 20/10/16

3.8 Cultural heritage

Contextual review

At an international level, the **European Landscape Convention (2002)**, seeks to support and promote the protection, management and enhancement of landscapes.

The **European Convention on the Protection of the Archaeological Heritage (1992)** seeks to protect and record the archaeological heritage, which includes all remains and objects and traces of human activity from past times. A key relevant principle within the convention is to ‘*integrate the conservation and archaeological investigation of archaeological heritage in urban and regional planning policies*’.

At the national level, the **Government White Paper: Heritage Protection for the 21st Century (2007)**⁵⁸ seeks to put the historic environment at the heart of the planning system.

The Government’s **Statement on the Historic Environment for England** sets out their vision for the historic environment⁵⁴. It calls for those who have the power to shape the historic environment to recognise its value and to manage it in an intelligent manner in light of the contribution that it can make to social, economic and cultural life. Also of note is the reference to promoting the role of the historic environment within the Government’s response to climate change and the wider sustainable development agenda.

The **NPPF** states that Authorities should set out a positive strategy in their local plan for the ‘*conservation and enjoyment of the historic environment*’, including those heritage assets that are most at risk. Assets should be recognised as being an irreplaceable resource that should be conserved in a manner appropriate to their significance; taking account of the wider social, cultural, economic and environmental benefits that conservation can bring, whilst also recognising the positive contribution new development can make to local character and distinctiveness.

The planning system should protect and enhance valued landscape and townscapes. Particular weight is given to “*conserving landscape and scenic beauty*”⁵⁵.

The Council has prepared a number of **Conservation Area Management Appraisals**, which are discussed below:

The Bewsey Street Conservation Area Appraisal (2007) established that a significant level of progress had been made in improving the declining condition of the area around Bewsey Street.

The document states that of the list of some 13 problem areas identified in the designation report, 9 have been ‘satisfactorily resolved’ and two have been ‘partly resolved’. The appraisal confirms that Bewsey Street’s conservation area status has ‘*undoubtedly helped to restore confidence in the future of the street as a residential and business location*’.

Bridge Street Conservation Area Appraisal (2006) concluded that further changes were required to reflect new issues on the public realm since the implementation of the plan over almost three decades ago.

The appraisal notes the mediocre quality of some of its ground floor frontages on Lower Bridge Street which convey “*an air of neglect and an area which is undervalued*”. The document priorities further enhancement of the scheme in relation to Lower Bridge Street, as well as highways signs and street furniture that are in keeping with local character across the area.

Buttermarket Street Conservation Area Appraisal (2007) identified numerous issues associated with the core of conservation area, including inappropriate design features and other visually intrusive elements of the streetscape along Buttermarket Street and at its junction with Academy Street and Scotland Road. The

⁵⁴ HM Government (2010) The Government’s Statement on the Historic Environment for England [online] available at: http://webarchive.nationalarchives.gov.uk/+http://www.culture.gov.uk/reference_library/publications/6763.aspx

⁵⁵ Council of Europe (2000) The European Landscape Convention [online] available at: <http://conventions.coe.int/Treaty/en/Treaties/Html/176.htm>

document also identifies several development opportunities along Dial Street and Fennal Street along with a proposed revision of the Buttermarket Street Conservation Area boundary line.

Church Street Conservation Area Appraisal (2007) identifies new appropriate design standards for new developments on 'gap sites'. It also indicates that general improvements and the redevelopment of existing 'mediocre' buildings at the western extremity of the conservation area, could form a more visually appealing gateway to the area. The document also provides several objectives associated with revisions to the public realm.

Palmyra Square Conservation Area Appraisal (2007) divides identified issues between public and private sector. The private sector issues comprise of appropriate alterations to architectural features and the aesthetic of private properties, as well as their general upkeep. This is outlined with the intention of establishing a clearer standard for design across the conservation area, which property owners should conform to. The public sector issues are predominantly focused on removing unnecessary signage, renewing street furniture and ensuring the area's upkeep. The document also proposes several strategies of utilising vacant properties including a Technical School, along with confirmation that outside of a few minor amendments, the Conservation Area boundary shall remain largely unaltered.

Town Hall Conservation Area Appraisal (2007) outlines a number of 'short-medium term' and 'medium /longer term' measures to target identified issues from the report. shorter-term measures primarily consist of urban design and public realm improvements along with a regeneration program for the former baths and potentially their adjacent areas too. The longer-term measures set out a plan for the reinstatement of the Town Hall railings flanking the 'Golden Gates' along with their central carriage crossing restoration. It also outlines the desire for a strategy for the use and management of Bank Park.

The Council has also prepared a range of additional documents, which seek to achieve the restoration and regeneration of locations with valued character. These are summarised below:

Bridge Street Management Proposal focuses on the restoration of a variety of historic and locally significant buildings along the street. The proposal also seeks to ensure the character of the area is maintained through the monitoring of the streetscape via the suggestion of photographic studies and an urban design study. These studies would centre on targeting frontage and street aesthetics.

Town Hall Management Proposals seek to form a strategy for the Town Hall building and ground external works, signage and access. The former baths adjacent to the Town Hall are also considered as requiring an urban design and regeneration strategy. There is also emphasis on preserving the character of the area through the investigation of unauthorised works or signage.

Buttermarket Street Conservation Area Management Proposals strives to protect shop frontages on the street that might not have listed building status. The proposal suggests several aesthetic amendments to the streetscape such as tree planting and the repainting of street furniture and roadside barriers.

Church Street Management Proposals proposes infill of development on derelict sites, consideration of design of development within the conservation area, as well as changes/replenishment of street furniture and signage. The proposal suggests that these smaller changes to the street are to be followed up by periodic photographic studies in order to identify and act upon any unauthorised works.

The current and projected baseline

Historic assets and features

In 2017, there were 374 listed buildings recorded in the Borough, of which six are Grade I. There are also 13 Scheduled Monuments (mostly moated halls in the Green Belt) and 16 conservation areas⁵⁶.

⁵⁶ English Heritage (2017) Heritage Counts – Local Authority Profiles available [online] at: <https://historicengland.org.uk/research/heritage-counts/2017-conservation-areas/indicator-data/>

The Council has identified a local list of buildings of community interest. Of the 623 buildings listed, many include local landmarks and buildings that would fail to meet criteria for statutory listing, but add to the character of the local area. This includes numerous farm buildings, cottages, schools, public houses and churches. There are also a scattering of mileposts, mounting blocks and war memorials amongst a range of other features.

There are eight entries (2017) on the Heritage at Risk Register in Warrington, including three conservation areas and two Places of Worship. These are:

- Bewsey Street, Bewsey (Conservation Area);
- Bridge Street, Warrington Town Centre (Conservation Area);
- Church Street, Warrington Town Centre (Conservation Area);
- Bowl Barrow west of Highfield Lane, Winwick (Scheduled Monument);
- Church of St. Oswald, Golborne Road, Winwick (Grade I Listed Building);
- Church of St. Thomas, London Road, Stockton Heath (Grade II* Listed Building);
- Bank Quay Transport Bridge (Scheduled Monument and tGrade II* Listed Building); and
- Gatehouse to Bradlegh Old Hall, Burtonwood and Westbrook (Grade II* Listed Building/Scheduled Monument).

Historic landscape and townscape

A large area of land to the north of Winwick has been registered as the site of the Battle of Winwick on 19 August 1648, which ended the Second English Civil War as a military contest.

There are areas identified within the borough for their potential archaeological value including parts of the town centre and Stockton Heath.

According to The Cheshire Historic Towns Survey⁵⁷, Warrington is split into five archaeological character zones. There are primary and secondary characteristics for each zone, which though not exhaustive contribute to a zone's distinct features.

Table 3.3: *Archaeological character zones within Warrington*

Zone	Primary characteristics
Warrington Zone 1: <i>Roman Wilderspool</i>	Roman roads, cemetery, settlements, industry
Warrington Zone 2: <i>Norman Warrington</i>	St Elphins Church, Motte and Bailey Castle, tenements, market places
Warrington Zone 3: <i>Late Medieval Warrington</i>	Medieval settlement, Warrington Bridge, Market Places, Augustinian Friary
Warrington Zone 4: <i>Bank Quay Industrial Centre</i>	Industrial sites
Warrington Zone 5: <i>Post Medieval Expansion</i>	Industrial estates, domestic expansion
Lymm Zone 1: <i>Medieval Settlement</i>	Settlement, The Cross

The history of the borough is reflected by a range of features that have been identified in the Historic Environment Record for Cheshire. For Example:

- There is evidence of agricultural practices, including ancient field systems at Croft, Moss Side, Moore and around Denow Wood.

⁵⁷ Cheshire County Council & English Heritage (2003) Cheshire Historic Towns Survey [online] at: http://www.cheshirearchaeology.org.uk/?page_id=223

- Medieval 'townfields' can still be traced in the landscape, particularly those around Thelwall Heys, as well as those on either side of 'The Gorse' south of Grappenhall Heys
- There is substantial evidence of Roman activities in the area; with a large settlement at Wildespool, along with evidence of small, unenclosed farmsteads across the borough.
- There are several sites of military origin such as the airfield at Burtonwood and associated facilities, the airfield at Stretton, the Royal Ordnance Factory at Birchwood evidenced by the Bunkers at Birchwood Park and the old reservoirs.

Landscape Character

Warrington's landscape has taken many thousands of years to evolve and develop. Farming has shaped most of the present landscape, which continues to evolve. As farming techniques become ever more efficient and mechanised, it is likely to cause a corresponding impact on the landscape. Another feature of Warrington's landscape is the exploitation of minerals, stone, sand and salt, as well as the deposition of waste materials which will likely have a permanent effect on the landscape.

The landscape is vital for a healthy environment and for providing habitat for a diverse range of flora and fauna. The landscape can also provide leisure and tourism benefits, boosting the rural economy.

The Warrington Borough Council Landscape Character Assessment (2007)⁵⁸ assesses the Borough as having six different character types. Within these character types they include distinctive features. These are listed below.

Character type 1: Undulating enclosed farmland

- Stretton & Hatton;
- Appleton Thorn;
- Winwick, Culcheth, Glazebrook & Rixton;
- Croft;
- Burtonwood; and
- Penketh & Cuerdley.

Character type 2: Mossland Landscape

- Rixton, Woolston & Risley Moss;
- Holcroft & Glazebrook Moss;
- Stretton & Appleton Moss; and
- Pill Moss.

Character type 3: Red Sandstone Escarpment

- Appleton Park & Grappenhall;
- Massey Brook; and
- Lymm.

Character type 4: Level Areas of Farmland and Former Airfields

- Limekilns;
- Former Burtonwood Airfield; and
- Former Stretton Airfield.

Character type 5: River Flood Plain

- River Mersey/Bollin;
- River Glaze; and
- Sankey Brook.

⁵⁸ Warrington Landscape Character Assessment (2007), http://www.warrington.gov.uk/downloads/file/938/landscape_character_assessment_lca_final_report. (Accessed April 2015)

Character type 6: Inter-Tidal Areas

- Victoria Park to Fiddlers Ferry.

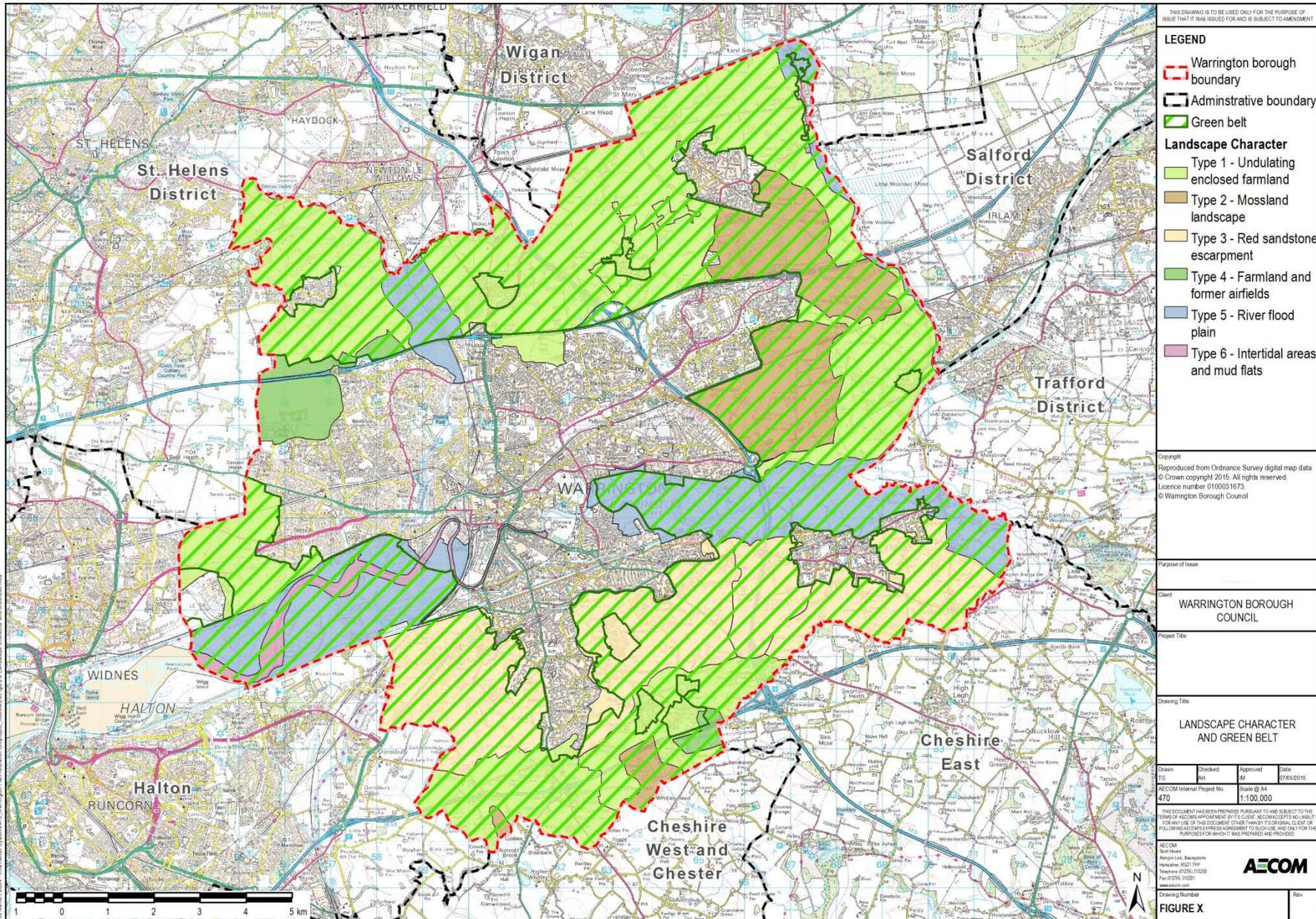
These Character Areas from the Landscape Character assessment will need to be respected as they provide base information on the visual status of the landscapes around Warrington, from which Visual Impact Assessments can be judged. These assessments are required when visually dominant developments are proposed.

Figure 3.8 shows the extent of these character areas across the borough. This figure also illustrates the extent of the Greenbelt, which is drawn fairly tightly around the urban areas and contributes to the protection of landscape character in the countryside.

Alongside these local assessments, there are National Character Areas (produced by Natural England) which cover areas of Warrington. These are Mersey Valley, Lancashire Coal Measures and the Shropshire, Cheshire and Staffordshire Plain.

These National Character Areas provide profiles which can help communities to inform their decision-making about the places that they live in and care for. The information they contain will support the planning of conservation initiatives at a landscape scale, inform the delivery of Nature Improvement Areas and encourage broader partnership working through Local Nature Partnerships. The profiles will also help to inform choices about how land is managed and can change.

Figure 3.8 – Landscape character areas and Green Belt



3.9 Biodiversity and Geodiversity

Contextual Review

The **Natural Environment White Paper** states that there is a need to halt the overall decline in biodiversity and the degradation of ecosystem services; and restore them in so far as feasible and seek to deliver net gains in biodiversity where possible⁵⁹.

The **Biodiversity 2020 Strategy**⁶⁰, published by the government, sets out objectives to deliver: a more integrated large-scale approach to conservation, to put people at the heart of biodiversity policy, to reduce environmental pressures, an overall improvement in the status of species and prevention of further human-induced extinctions and improved public knowledge of biodiversity.

The **NPPF** discusses the importance of healthy well-functioning ecosystems, encourages the 'preservation, restoration and re-creation of priority habitats, ecological networks' and promotes the 'protection and recovery of priority species. It states that there is a need to protect and maximise the value of areas already rich in wildlife; expand, buffer, and create connections and stepping stones between these areas; and make the wider landscape more permeable to wildlife.

The TCPA and Wildlife Trust guidance document, **Planning for a Healthy Environment**, suggests that positive planning for 'green infrastructure' is recognised as part of planning for ecological networks and making the built environment permeable for wildlife⁶¹.

The guidance document **Creating Garden Cities and Suburbs Today**, suggests that 'New development should incorporate green space consisting of a 'network of well-managed, high-quality green/open spaces linked to the wider countryside'⁶². These spaces should be of a range of types (e.g. community forests, wetland areas and public parks) and be multifunctional, for instance as areas that can be used for walking and cycling, recreation and play, supporting of wildlife, or forming an element of an urban cooling and flood management system.

Green infrastructure is defined as being: 'a network of multi-functional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities'.

The Mersey Forest Plan (2014) incorporates the concept of green infrastructure. The purpose of the plan is to achieve environmental, social and economic benefits for local people through the creation of a community forest – in simple terms it seeks to substantially increase tree cover across Merseyside, Warrington and North Cheshire over the next ten years.

⁵⁹ Defra (2012) The Natural Choice: securing the value of nature (Natural Environment White Paper) [online] available at: <http://www.official-documents.gov.uk/document/cm80/8082/8082.pdf>

⁶⁰ Defra (2011) Biodiversity 2020: A strategy for England's wildlife and ecosystem services [online] available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf

⁶¹ The Wildlife Trusts & TCPA (2012) Planning for a healthy environment: good practice for green infrastructure and biodiversity [online] available at: <http://www.wildlifetrusts.org/news/2012/07/06/planning-healthy-and-natural-environment>

⁶² TCPA (2012) Creating garden cities and suburbs today [online] available at: http://www.tcpa.org.uk/data/files/Creating_Garden_Cities_and_Suburbs_Today.pdf

The current and projected baseline

Designated habitats

There are three Special Areas of Conservation (SACs) in Warrington;

- Holcroft Moss (part of Manchester Mosses);
- Risley Moss (part of Manchester Mosses); and
- Rixton Claypits.

There are four Sites of Special Scientific Interest (SSSI) within Warrington's boundary. These are:

- Woolston Eyes (breeding bird assemblage);
- Rixton Clay Pitts (grassland and rare species);
- Risley Moss (mosses, open water habitat and vegetation); and
- Holcroft Moss (peat bogs/mosses).

The conditions of these SSSIs at the time of the latest surveys are as follows⁶³:

Table 3.3: SSSI Condition

SSSI	Condition	Last assessment	Condition risk threat	Sensitivities
Woolston Eyes	100% favourable condition	Dec, 2010	Medium	Important to breeding birds. Recreation along the ship canal and public rights of way through the SSSI could lead to potential disturbance. Improvements to walking/cycling routes here could potentially have effects (either positive or negative).
Rixton Clay Pitts	100% favourable	June, 2015	No identified condition threat	The use of the site by great crested newts is one of its most important features. Water quality is an important issue that needs to be maintained. Of most relevance to the LTP4 would be walking and cycling along PROWs through the site, as well as the potential for pollution from traffic.
Risley Moss	61% unfavourable recovering 40% favourable	April, 2015	Low / No identified condition threat	Reliant on water levels. Transport related effects unlikely. Rights of way nearby but recreational effects unlikely given the nature of the sites (peat bogs).
Holcroft Moss	100% unfavourable recovering	June, 2013	High	The site is unlikely to be affected by recreational pressure or pollution from local sources. However, the M62 runs close by with the potential for effects on air quality. The site could also be affected in the longer term through the construction of HS2 route Phase 2b.

There are four Local Nature Reserves in Warrington; Rixton Clay Pits and Risley Moss (which are also SSSIs), Paddington Meadows and Colliers Moss.

As well as these designated sites, Warrington also has over 50 Sites of Local Importance for Nature Conservation, known as Local Wildlife Sites which represent the best local wildlife sites in the Borough and are vital to the maintenance of biodiversity of the town.

⁶³ Natural England - Condition of SSSI report [online] at: www.sssi.naturalengland.org.uk

During the monitoring period of 2013-14 there was a net gain of 378ha of land recognised for its biodiversity importance within the Borough⁶⁴. This was due to the designation of several new Local Wildlife Sites such as Rixton Moss. Since, there has been no change to the area of biodiversity importance. Further monitoring of habitats is required to determine if there have been net increases in biodiversity, and to identify potential sites that may be suitable for designation.

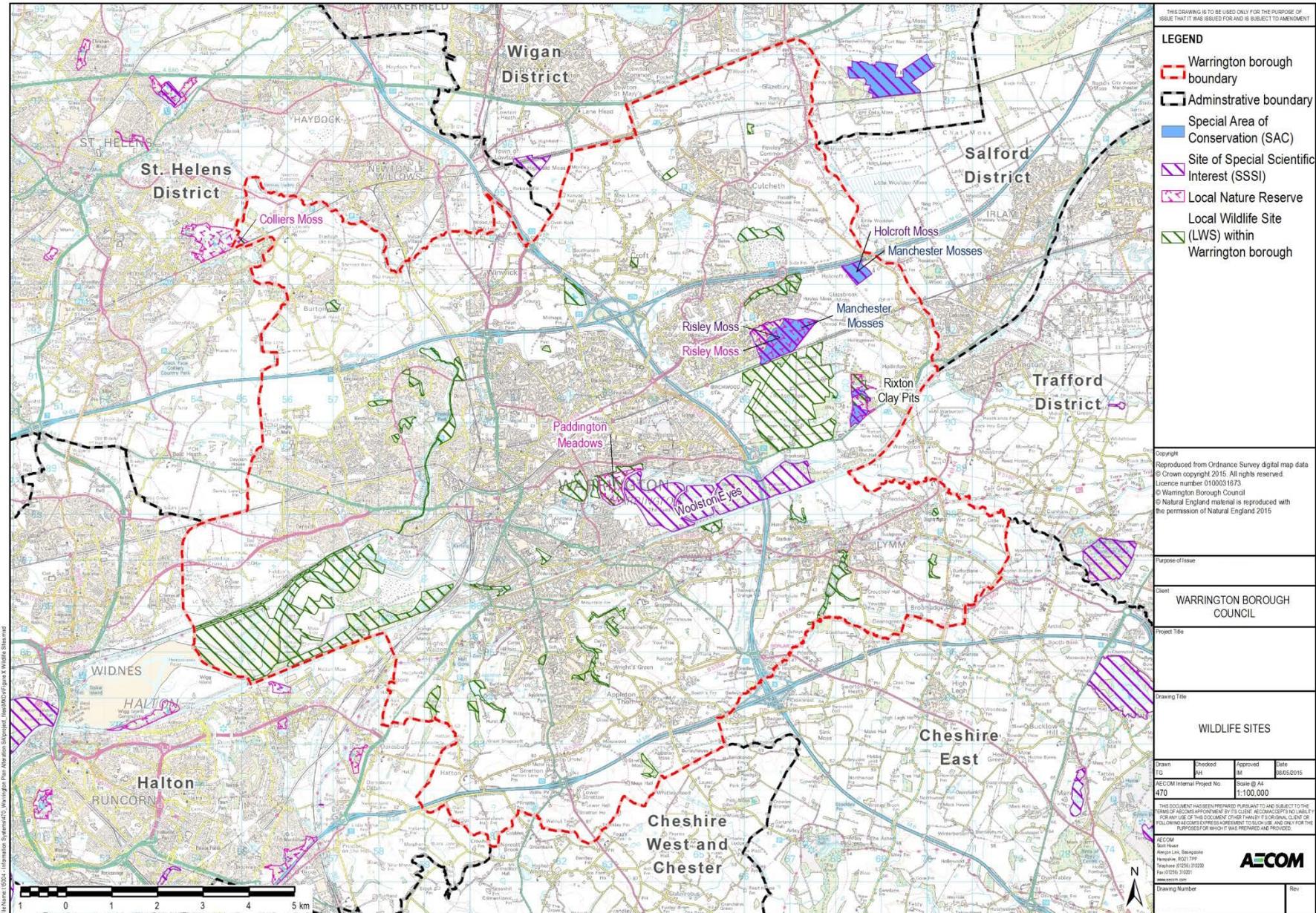
It is assumed that the number of designated sites would be unlikely to alter substantially in the foreseeable future although improvement should continue. The Adopted Core Strategy provides both biodiversity protection and crucially enhancement in Warrington.

The development of further species action plans would provide an improved foundation for the protection of the various species and increase awareness of their locations so measures may be put in place for enhanced protection. With an increase in development and growth of the population, there are potential negative impacts on biodiversity associated with increased access onto sensitive habitats, including designated sites.

Figure 3.9 shows the location of these designated wildlife sites throughout the Borough and in neighbouring authorities.

⁶⁴ Warrington Borough Council (2014) Annual Monitoring Report
http://www.warrington.gov.uk/downloads/file/8187/amr_2014

Figure 3.9 - Designated wildlife sites



3.10 Climate Change and Resource Use

Contextual Review

The Carbon Plan (2011)⁶⁵ sets out the Government's plans for achieving the greenhouse gas emissions reductions committed to in the Climate Change Act 2008 and the first four carbon budgets. The Carbon Plan aims to reduce the UK's greenhouse gas (GHG) emissions by 80% by 2050, relative to levels in 1990.

Domestic transport emissions make up nearly a quarter of the UK's GHG emissions and the plan states that low carbon transport is an essential part of meeting the targets in the Carbon Plan. The Plan notes that by 2027, emissions from transport should be between 17% and 28% lower than 2009 levels.

According to the **NPPF**, the need to '*support the transition to a low carbon future in a changing climate*' is a core planning principle. Planning (and associated transport measures) should also play a key role in securing radical reductions in greenhouse gas (GHG) emissions through planning for new development in locations and ways which reduce GHG emissions in order to meet the targets set out in the Climate Change Act 2008.

The **NPPF** further encourages transport solutions that support reductions in greenhouse gas emissions and reduce congestion; notably through concentrating new developments in existing cities and large towns and/or ensuring they are well served by public transport.

The **NPPF** also states that Planning authorities are encouraged to 'adopt proactive strategies' to adaptation. New developments should be planned so that they avoid increased vulnerability to climate change impacts. Where new development is at risk to such impacts, this should be managed through adaptation measures including the planning of green infrastructure.

Development should also be directed away from areas at highest risk from flooding, and should 'not to be allocated if there are reasonably available sites appropriate for the proposed development in areas with a lower probability of flooding'. Where development is necessary, it should be made safe without increasing levels of flood risk elsewhere.

In the guidance document **How local authorities can reduce emissions and manage climate risk**⁶⁶ it is considered particularly important that local authorities use their powers as follows in relation to transport:

- Reduce transport emissions by concentrating new developments in existing cities and large towns and/or ensuring they are well served by public transport;
- Avoid increasing the area's risk to climate change impacts by locating new development in areas of lowest flood risk; and

The Flood and Water Management Act⁶⁷ sets out the following approaches to flood risk management that are relevant with regards to transportation:

- Utilising the environment, such as management of the land to reduce runoff and harnessing the ability of wetlands to store water; and Identifying areas suitable for inundation and water storage.

The National Adaptation Programme: Making the Country Resilient to a Changing Climate (Defra, 2013) promotes the adoption of measures to improve resilience (for businesses, communities and the built and natural environment) to the likely effects of climate change, including the need to manage flood risk, protect and enhance green infrastructure and urban heating.

⁶⁵ HM Government (2011) Carbon Plan : Delivering our low carbon future [online] available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47613/3702-the-carbon-plan-delivering-our-low-carbon-future.pdf

⁶⁶ Committee on Climate Change (2012) How local authorities can reduce emissions and manage climate risk [online] available at: <https://www.theccc.org.uk/publication/how-local-authorities-can-reduce-emissions-and-manage-climate-risks/>

⁶⁷ Flood and Water Management Act (2010) [online] at: <http://www.legislation.gov.uk/ukpga/2010/29/contents>

The **Climate Change Strategy for Warrington (Jun 2013)** refreshes the Council's pledge to take action on climate change and to lead Warrington toward a sustainable, low carbon future. It identifies three main priorities for action: reducing the Council's own carbon emissions; helping to reduce carbon emissions across the borough as a whole; and adapting Warrington to cope with changing weather. The strategy commits the Council to setting appropriate targets and actions under each of the three priority areas.

The Council's **Flood Risk Management Strategy (March 2011)**: aims to ensure that the Council prioritises its investment in managing the flood risk in Warrington in the best way possible. It identifies where and what the flood risk is, how it can be managed and prioritises the delivery the identified measures.

The Government's **Review of Waste Policy in England (2011)** recognises that environmental benefits and economic growth can be the result of a more sustainable approach to the use of materials. As such, it sets out a vision to move beyond our current 'throwaway society' to a 'zero waste economy'.

The **Waste Management Plan for England (2013)** concludes that from the 2011 review, further policy measures are not needed to meet the key objectives of the revised Waste Framework Directive

The **National Planning Policy for Waste (DCLG, 2014)** states that waste planning authorities 'should prepare Local Plans which identify sufficient opportunities to meet the identified needs of their area for the management of waste streams'. It further sets out a criteria for waste planning authorities to assess the suitability of sites, this includes 'the capacity of existing and potential transport infrastructure to support the sustainable movement of waste, and products arising from resource recovery, seeking when practicable and beneficial to use modes other than road transport'.

The current and projected baseline

Waste

The 2016/17 monitoring period saw a decrease of 2,131 tonnes in the total municipal waste arisings when compared to the previous monitoring period. This resumes the previous downward trend in the total municipal waste arisings after last year's slight increase. There was another decrease of 1,784 tonnes in the amount of recycled/composted waste that was collected (down from 55,255 to 53,471 tonnes). The amount of waste incineration has also decreased by 874 tonnes from 40,761 to 39,797 tonnes.⁶⁸

Whilst, in general terms the 2016/17 monitoring period saw the continued effects of the Council's new municipal waste disposal contract⁶⁹, which has seen a further reduction in the total amount of municipal waste arising when compared to the previous monitoring period (down from 97,795 to 95,664 tonnes), there has been a slight increase in the amount of waste being landfilled when compared to the previous monitoring period (up from 1,869 to 2,396 tonnes).

Energy and carbon emissions

In 2016, the estimate of total carbon dioxide emissions for Warrington was 6.7 tonnes per head. This represents a 1.0 tonne per head decrease compared to 2013⁷⁰.

Warrington is intersected by several Motorways (M56, M62) so it is important to bear in mind where emissions originate, as much of these emissions cannot be directly influenced by local planning policy.

Table 3.4 below shows figures in Warrington between 2005 and 2016. There is a general downward trend from 2005 to 2016 (shown in Figure 3.10) although in some years there was an increase in emissions.

⁶⁸ Warrington Borough Council (2017) Annual Monitoring Report [online] available:

https://www.warrington.gov.uk/downloads/file/11831/annual_monitoring_report_-_1_april_2016_-_31_march_2017

⁶⁹ In 2013/2014 a new municipal waste disposal contract came into effect which now sees non-recyclable municipal waste diverted to an Energy from Waste (EfW) facility as opposed to being landfilled.

⁷⁰ Department for Business, Energy and Industrial Strategy (2017) 2005 to 2016 UK local and regional CO2 emissions – data tables available [online] at: <https://www.gov.uk/government/collections/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics>

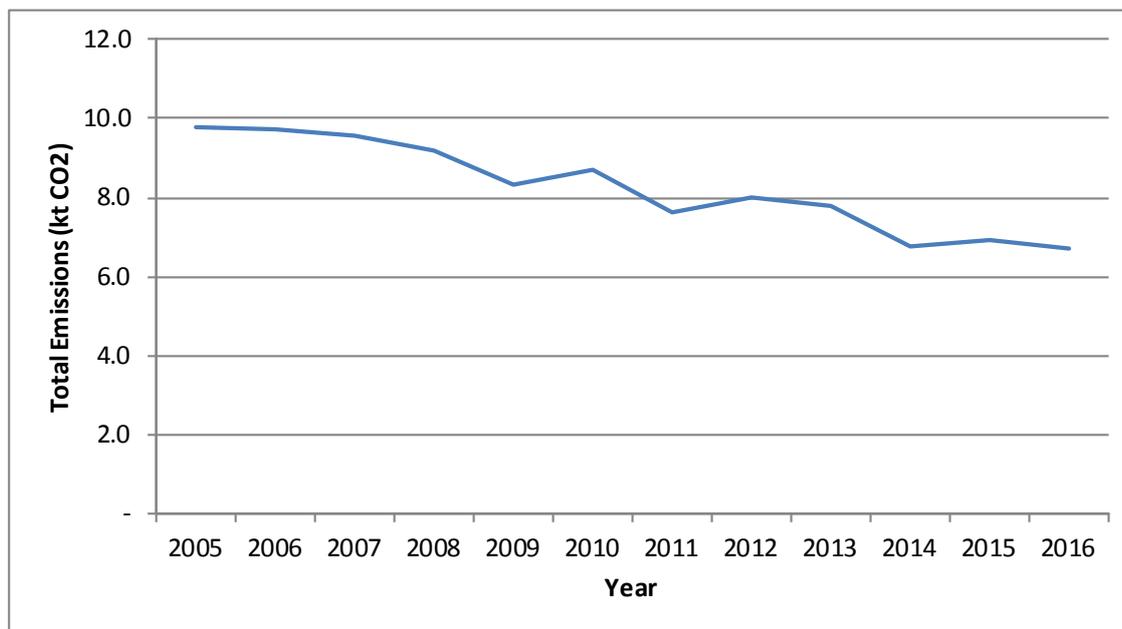
Overall significant progress has been made in the last ten years, with a particular reduction in emissions from the industry and commercial total.

Table 3.4: CO₂ Emissions between 2005 and 2016

Year	Industry and Commercial Total	Domestic Total	Transport Total	Grand Total	Per Capita Emissions (t)
2005	695.3	484.9	681.3	1,873.0	9.7
2006	708.3	480.9	683.4	1,883.9	9.7
2007	689.1	471.2	701.8	1,872.9	9.5
2008	651.8	467.9	674.0	1,804.4	9.1
2009	570.9	429.7	650.3	1,661.7	8.3
2010	634.8	457.8	641.0	1,744.1	8.7
2011	508.2	397.8	624.3	1,540.5	7.6
2012	568.3	425.7	614.2	1,618.1	7.9
2013	559.5	415.7	604.0	1,589.1	7.7
2014	422.8	344.3	611.1	1,387.8	6.7
2015	450.6	334.2	631.0	1,425.3	6.9
2016	419.6	319.2	654.9	1,403.0	6.7

Source: Department for Business, Energy and Industrial Strategy

Figure 3.10 – Warrington CO₂ emissions estimates 2005-2016 (kt CO₂)



Source: Department for Energy and Climate Change

Historically, increased development will result in a greater amount of greenhouse gas emissions. The North West Sustainable Energy Strategy sets a target of at least 20% of North West electricity requirements being met by renewable sources by 2020.

Meeting this target will be dependent upon the successful delivery of a range of carbon reduction activities, including tighter standards for the performance of buildings and an increased provision of low-carbon energy⁷¹.

It is anticipated that emissions will continue to fall over time as emissions targets tighten, the energy efficiency of homes is improved, low carbon energy schemes come on line and vehicle efficiency continues to improve.

An increase in the take-up of electric vehicles would be expected to increase demand for electricity over the Plan period. It will therefore be necessary to ensure that there is adequate capacity within the electricity grid. This includes the need for sufficient energy generation (when it is needed) as well as the ability for substations to accommodate increased loads.

Resilience

The Government's Climate Change Adaptation Strategy outlines the importance of building resilience to the effects of climate change that are already predicted to happen in the future.

A key principle for adaptation is the need to take action early to avoid costly effects in the future (as identified in the 'Stern Report'). The LTP4 has the potential to address resilience in a number of ways including consideration of flood risk and the implications for movement. The introduction of walking and cycling routes / measures could also be implemented as part of green infrastructure enhancements.

Flooding

The Warrington Strategic Flood Risk Assessment Volume 2 (2011) followed on from the 2008 Volume which looked at fluvial, tidal, surface water and sewer flood risk. The report looked at each source of flooding in detail. Warrington is at risk from many different sources of flooding including, main rivers, ordinary watercourses, surface water runoff, sewer flooding and the residual risks associated with artificial water bodies such as the Bridgewater Canal, the Manchester Ship Canal and reservoirs.

The main source of flooding is the River Mersey and its five key tributaries, which flow through the centre of the borough. Flooding can be both fluvial and tidal in nature with the tidal limit of the Mersey located at Howley Weir, central Warrington.

The Environment Agency's June 2011 Flood Map indicated there are 6789 homes, businesses and other buildings within the 1 in 100-year fluvial or 1 in 200-year tidal flood extent (Flood Zone 3) within Warrington. These properties have a 1% (fluvial) or 0.5% (tidal) chance of flooding in any given year. This number rises to 14670 properties when the extreme 1 in 1000-year fluvial and tidal flood event is considered⁷².

Figure 3.11 sets out the Environment Agency flood maps. It can be seen that large parts of the urban area are at risk of flooding, including the potential for disruption to roads within and around the town centre.

Since 2006, the Annual Monitoring Report (2017) confirms that there have been no planning permissions granted contrary to the advice of the Environment Agency on flooding and water quality grounds.

⁷¹ North West Sustainable Energy Strategy (2006), http://www.4nw.org.uk/downloads/documents/aug_06/nw_ra_1156410969_North_West_Sustainable_Energy_.pdf.

⁷² Warrington Strategic Flood Risk Assessment Volume 2 (2011)

4. What are the key issues that should be a focus of the appraisal?

4.1 Key sustainability issues

Drawing on the review of the policy context and baseline position, a range of environmental and sustainability issues have been identified to ensure that the SEA is focused on the most relevant factors. Importantly, this needs to consider the extent to which the LTP4 can influence these issues (i.e. the potential for significant effects to be generated).

Table 4.1 below presents a list of the key issues grouped under a series of environmental / sustainability themes. For each issue / factor, a 'scoping outcome' is provided. Essentially, this is a decision as to whether the LTP4 could lead to significant effects on the issue/factor and should therefore be a focus of the SEA.

Table 4.1: Key sustainability issues identified through scoping

SEA Theme	Key issues and scoping outcome
Economy and regeneration	<ul style="list-style-type: none"> • Pockets of Deprivation – Deprivation across the borough as a whole is below regional and national averages, but there has been a slight worsening in the overall index of deprivation from 2010-2015. However, there are inequalities across the borough with several communities within the inner areas of Warrington falling into the 10% most deprived areas in England. Access to services and jobs is a key factor that can help to address deprivation in such areas. Consequently, this factor is scoped-in to the SEA. • Employment needs – The 2016 Economic Development Needs Assessment identifies a need for an additional 276 hectares of employment land. Transport and access will play an important role in ensuring attractive sites come forward for employment use. Consequently, this factor is scoped-in to the SEA. • Economic Growth – There is a need to continue to promote sustainable economic growth and to support aspirations to transform Warrington from a new town to a 'New City', with corresponding economic growth. There will be a need to support growth with adequate transport infrastructure, with HS2 forming an important catalyst for further growth in the longer term. Consequently, this factor is scoped-in to the SEA.

SEA Theme	Key issues and scoping outcome
Health and Wellbeing	<ul style="list-style-type: none"> • Ageing population – There are significant changes to the structure of the population anticipated with projections suggesting there will be a 50% increase in the population aged over 65 years by 2036. There is a need to ensure that evidence based interventions which promote healthy ageing and retain independence are prioritised and promoted. This will include consideration of mobility, movement and accessibility. Therefore, this factor is scoped-in to the SEA. • Fear of Crime and Antisocial behaviour – Household surveys show that fear of crime at night is higher than national figures, and substantially higher in more deprived neighbourhoods. It is important to ensure that people feel safe when travelling, especially if levels of walking and cycling are to be increased. Consequently, this factor is scoped-in to the SEA. • Pockets of Health Deprivation – Health deprivation relative to other boroughs has worsened since 2010, with approximately 32% of the local population living in areas which are ranked amongst the most health-deprived in the country. Inner areas of the borough are affected most severely, but there are pockets across other Warrington neighbourhoods that are ranked amongst the 20% most deprived nationally. Tackling deprivation can be influenced by transport and accessibility and therefore this factor is scoped-in to the SEA. • Green Infrastructure – Green infrastructure provides multi-functional benefits for health and wellbeing and should be protected and enhanced. • Obesity rates amongst adults are rising and currently exceed the average for England, contributing to actual and forecast increases in a number health conditions. Opportunities to maximise physical activity, active travel and healthy eating should be explored. Consequently, this factor is scoped-in to the SEA. • Access to Primary Care: The NHS Strategic Estates Plan has identified that there are areas within the borough that currently have insufficient capacity to accommodate new residents, and will become increasingly more constrained over the plan period with further development. This factor has been scoped-in to the SEA.
Accessibility	<ul style="list-style-type: none"> • Accessibility of Employment – Travel to work by public transport / walking / cycling figures for Warrington are lower than regional or national average. The use of car is high and the problem is exacerbated by the New Town Development pattern. This factor is therefore scoped-in to the SEA. In the long term, the completion of HS2 could have benefits for employment access to and from a wider catchment area. • There are rising traffic volumes and traffic congestion - The scale and distribution of new development is also likely to contribute to further increases in car usage across the Borough. Consequently, this factor is scoped-in to the SEA. • High levels of commuting into and out of the Borough – Patterns of economic growth and housing delivery could potentially help to reduce the amount of commuting in the longer term. This factor is therefore scoped-in to the SEA.
Housing	<ul style="list-style-type: none"> • Housing delivery - There is a pattern of solid housing completions over the last 5 years, with the majority taking place on brownfield land. However, a continued need for housing delivery will mean that greenfield / greenbelt land is likely to be developed on the urban fringes. This will require supporting infrastructure and consideration of patterns of movement. Consequently, this factor is scoped-in to the SEA. • Ageing population - To address the impact of an ageing population here is a need to ensure there are sufficient homes that are accessible, adaptable and support care in the community and independent living despite changing requirements caused by age, disability or illness. The LTP4 could potentially have an influence on this factor and it is therefore scoped-in to the SEA.

SEA Theme	Key issues and scoping outcome
Natural Resources	<ul style="list-style-type: none"> • Pollution, air quality and climate change – Two AQMAs are designated within the Borough. One is related to the motorway network; and one is associated with the town centre ring road and link roads. There is a need to improve air quality in these areas in particular, and therefore this factor is scoped-in to the SEA. • Quality of land and waterways in the Borough – There are a large number of potentially contaminated sites within the Borough and a significant length of Warrington's rivers are graded as having poor chemical and biological quality. Transport measures could potentially involve the consideration of water travel and / or walking and cycling along routes alongside water courses. This factor is therefore scoped-in to the SEA. • Soil quality – Warrington contains considerable areas of Agricultural Land classified as Grade 2 and 3a (i.e. Best and Most Versatile). However, the LTP4 is unlikely to lead to a direct loss of such resources, so this topic is scoped-out of the SEA. • Mineral resources – There is a need to protect mineral resources and supporting infrastructure from sterilisation. Transport schemes can have an effect on minerals through a requirement for construction materials. However, the scope of influence that the LTP4 will have on materials choice is limited. This factor is therefore scoped-out of the SEA.
Cultural heritage	<ul style="list-style-type: none"> • Protection and enhancement of heritage assets – There is a significant number of historic assets in the Borough & a number of buildings / monuments have been identified as being in vulnerable or deteriorating condition. The LTP4 has the potential to have positive or negative effects upon cultural heritage, and this factor is therefore scoped-in to the SEA. • Historic Environment – In addition to designated assets, there is a range of locally important buildings and features with historic and cultural value. This also includes a number of historic field patterns, areas of archaeological potential and the form of the built environment in settlements, which gives them their sense of place. This factor is therefore scoped-in to the SEA. • Landscape character – There is a need to preserve and enhance the character of Warrington's countryside, whilst recognising the need to release Green Belt land. Though this is an important issue, the LTP4 is unlikely to have a significant effect on landscapes as it does not involve large-scale infrastructure schemes and would not lead to a loss of land in the greenbelt or countryside. The potential for positive effects is also considered to be unlikely. Consequently, this factor is scoped-out of the SEA.
Biodiversity and Geodiversity	<ul style="list-style-type: none"> • Protection & Enhancement of Biodiversity and geodiversity Assets – There are significant nature conservation and wider green infrastructure assets in the borough that need to be protected, enhanced and made more resilient. • Water quality and air quality can have a detrimental effect upon certain wildlife habitats and species. • The LTP4 has the potential to have significant effects (either positive or negative), and is therefore scoped-in to the SEA.

SEA Theme	Key issues and scoping outcome
Climate Change and resource use	<ul style="list-style-type: none"> <li data-bbox="379 237 1450 331">• Flood protection in the borough – Flooding throughout the borough has the potential to disrupt transport networks and access to services. Consequently, this factor is scoped-in to the SEA. <li data-bbox="379 353 1450 510">• Renewable energy and energy efficiency – There is a need for a more pro-active approach to energy production and usage. An increased use of electric vehicles could put increasing pressure on the electricity grid. However, it is unlikely that the LTP4 can have a significant influence upon energy infrastructure. Therefore, this factor is scoped-out of the SEA. <li data-bbox="379 533 1450 654">• Amount of waste entering land fill – There are European and National targets for waste reduction and an increase in reuse, recycling and composting. However, the LTP4 is unlikely to have a significant influence upon waste and recycling. Therefore, this factor is scoped-out of the SEA.

4.2 The SEA Framework

The sustainability issues identified through scoping have been used to establish eighteen environmental sustainability objectives, which have been grouped under eight ‘SEA themes’ in **Table 4.2** below.

Taken together; the SEA themes, objectives and supporting criteria make-up the ‘SA Framework’, which provides the basis for undertaking appraisals.

Table 4.2: The ‘SEA framework’

SEA Theme	SEA objectives	Sub criteria / supporting questions
Economy and regeneration	1. Support the growth of a modern economy which helps to address inequalities and deprivation.	<ul style="list-style-type: none"> - Will it support the release of employment land by ensuring land suitable for employment uses have good transport connectivity? - Will it improve connections between Warrington town centre and the M62 corridor to the north of the town centre to areas further afield? - Will it improve connectivity with the rest of the region? - Will it help to manage parking whilst ensuring access to the town centre?
	2. Reduce poverty, deprivation and social exclusion and secure economic inclusion	<ul style="list-style-type: none"> - To what extent will new transport infrastructure be accessible to people on low incomes? - Will it improve the affordability of public transport services? - Will it improve access to public transport services for the elderly and/or those with a disability?
Health and Wellbeing	3. Improve community safety and reduce the fear of crime and disorder.	<ul style="list-style-type: none"> - Will it improve the overall safety of the Borough and help reduce road traffic accidents? - Will it reduce transport related crime, anti-social behavior and the fear of crime?
	4. Provide, protect or enhance leisure opportunities, recreation facilities, green infrastructure and access to the countryside	<ul style="list-style-type: none"> - Will it improve access to open space, sport and recreational facilities? - Will it help to protect and enhance a network of multi-functional green infrastructure that encourage active travel and recreation?
	5. Ensure good access to health services.	

SEA Theme	SEA objectives	Sub criteria / supporting questions
Accessibility	6. Support sustainable patterns of economic growth by; securing improvements to transport networks, ensuring good access to jobs and services, and enabling sustainable modes of travel.	<ul style="list-style-type: none"> - Will it support the interconnectivity of transport modes? - Will it extend walking paths, cycle ways and public transport services to key facilities, housing and employment sites? - Will it improve highways infrastructure to employment, key facilities and services? - Will it improve access to services, facilities and employment for those living in rural parts of the Borough? - Will it reduce private car mileage? - Will it encourage the use of alternatives to car travel? Such as walking, cycling and public transport?
Housing	7. Support sustainable patterns of housing growth.	<ul style="list-style-type: none"> - Will it help to ensure that housing developments are supported by strong public transport, walking and cycling routes?
Natural Resources	8. Protect, manage and improve water quality. 9. Protect, manage and improve air quality.	<ul style="list-style-type: none"> - Will it help to address air quality problems, particularly within Warrington's AQMAs. - Will it reduce transport related air pollutants? - Will it improve the quality of water in the Borough?
Historic environment	10. Conserve and enhance the historic environment, heritage assets and their settings.	<ul style="list-style-type: none"> - How will it affect designated heritage assets? - How will it affect locally important heritage assets? - How will it affect archaeological assets (designated and non designated)?
	11. Ensure high quality and sustainable design for transport infrastructure, spaces and the public realm that is appropriate to the locality.	<ul style="list-style-type: none"> - How will it affect the character of townscapes? - Will it encourage high quality design? - Will it enhance the public realm? - Will it help to preserve and create a sense of place? - Will it contribute to better management of cultural heritage assets?

SEA Theme	SEA objectives	Sub criteria / supporting questions
Biodiversity	12. Protect, maintain and enhance biodiversity habitats and species.	<ul style="list-style-type: none"> - Will there be a net gain in biodiversity? - Will it reduce the levels of disturbance to species and habitats? - Will it protect or enhance habitat corridors and linking routes? - Will it continue to protect nationally and locally designated sites? - To what extent can any effects be mitigated?
Climate Change: Flooding and resilience	13. Ensure the Borough is prepared for climate change, particularly the risks of flooding.	<ul style="list-style-type: none"> - Has the extent to which flooding could affect transport routes been considered? - Will it help to improve the resilience of the public realm to climate change?

5. Appraisal methods

5.1 Introduction

This chapter sets out the methods and assumptions for undertaking the appraisals. The SEA Framework set out in **Table 4.2** is at the heart of the appraisal process and forms the basis for structuring the assessments.

5.2 Appraisal methods

The appraisals identify and evaluate 'likely significant effects' on the baseline / likely future baseline associated with the draft Plan (and any reasonable alternatives), drawing on the sustainability topics and objectives as a methodological framework.

It is important to note that effects have been predicted based upon the criteria presented within the SEA Regulations. So, for example, account is taken of the nature of effects (including magnitude, spatial coverage and duration), the sensitivity of receptors, and the likelihood of effects occurring as far as possible.

The potential for 'cumulative' effects has also been considered. The effect 'characteristics' are described within the appraisal as appropriate under each sustainability theme / objective. A table is also presented for each topic, summarising the predicted effects and their characteristics (i.e. namely whether they are significant or not).

To aid in the communication of findings, the effects of the Plan (and reasonable alternatives) have been illustrated by using the following symbols, which highlight whether effects are significant or not. The nature of uncertain effects have also been identified, for example, an uncertain negative or an uncertain positive effect

++	The policy is likely to have a significant positive effect .
+	The policy is likely to have a minor positive effect .
0	The policy is likely to have a neutral effect .
-	The policy is likely to have a minor negative effect .
--	The policy is likely to have a significant negative effect .
?	There are uncertainties with regards to the predicted effects.

5.3 Assumptions

When undertaking the appraisals, the following factors have been considered:

- The effects associated with the Plan should be considered in the context of what would occur in the absence of the Plan (i.e. the projected baseline position). In the absence of a new transport plan for Warrington, there would still be national and local policy, programmes and schemes to consider. Therefore the effects of the LTP4 should be predicted in the context of how the LTP4 is likely to lead to a more positive or negative effects when compared to a less proactive approach.
- Significant effects will only be identified if there is likely to be a tangible change to the projected baseline.
- It is assumed that detailed effects associated with specific transport schemes would be dealt with at the Planning stage through appropriate assessments (which might include EIA). The appraisal of LTP4 is focused on strategic matters.
- Where routine mitigation measures could be implemented to reduce potential negative effects, this will be taken into account in the appraisals.

5.4 Consultation on the Scope

The 'SEA Regulations' require that: "When deciding on the scope and level of detail of the information that must be included in the report, the responsible authority shall consult the consultation bodies".

In England, the consultation bodies are Natural England, The Environment Agency and English Heritage.

Engagement with the statutory consultees at the Scoping Stage helps to ensure that the SA is wide ranging in its consideration of the appropriate issues which should be the subject of the assessment.

The Scoping Report was consulted upon in line with the procedures set out in Chapter 1 of this report. This involved a 5 week consultation period starting from August 1st 2018.

Following-on from the consultation process, the scope was updated as necessary, to reflect the responses received (See Appendix A).

6. Consideration of reasonable alternatives

6.1 Introduction

A key part of the SA process is to consider whether there are different ways in which the vision and objectives of the Plan can be achieved. In this case, the Plan seeks to achieve a well-connected place with high quality walking, cycling and public transport networks. There is also a need to support economic growth.

A large number of policies have been developed to help deliver this vision and objectives. In the main, these policies are not mutually exclusive strategic approaches, and so there are no reasonable alternative approaches to test in relation to individual policies. For example, policies that seek to improve safety do not have any strategic alternatives, nor do policies that seek to improve awareness of services, to support cleaner fuels and so on.

However, there are strategic decisions to make about what form of transport measures to focus efforts and funding towards. In this regard, three reasonable options have been identified as follows:

1. Focus on a mix of sustainable travel (walking, cycling and improvement of existing public transport networks) and traffic management measures.
2. A new mass transit system to be implemented alongside traffic management measures and sustainable travel. For this option, there would be a need for substantial investment in a new transit system, which could mean that there is less (but still some) investment in traffic management and sustainable travel

Sole focus on sustainable modes of travel. This would involve greater investment sustainable modes of travel such as walking and cycling infrastructure and supporting measures (awareness raising, training, technological improvements to public transport etc.).

6.2 Appraisal findings

Each of the three strategic options has been appraised against the SEA framework and the findings are included in detail within **Appendix B**.

The effects are summarised below:

- Option 2 generates the most significant positive effects overall. In particular, this option best supports economic growth and housing development, which are crucial elements of the emerging Local Plan for Warrington. This option is also most positive in terms of improving accessibility for a wider range of communities and achieving improvements in air quality and contributing to climate change mitigation.
- However, this option does have the potential to generate some minor negative effects which would not occur for the other two options. These are related to the potential effects of the physical infrastructure needed to support a mass transit system.
- Whilst Option 3 would have no negative effects upon environmental factors, the positive effects are not significant for any factors. This approach may also not help to support the growth of housing that is required to support the population of Warrington.

- Option 2 does generate significant positive effects for health, wellbeing, air quality and climate change. However, there is a degree of uncertainty. Whilst it does not generate the minor negative effects that Option 2 could create, Option 2 is less positive with regards to accessibility improvements and support for housing and employment growth.

6.3 Rationale for the preferred approach

The Councils preferred approach is broadly reflective of Option 2, in the sense that it involves the inclusion of a broad range of policy measures to deliver the vision and objectives of the Plan. Of particular note is the commitment to the development of a mass transit system and the intention to explore options for its development.

The reasons why the Council has adopted this approach are outlined below:

- To have a transformative effect on the town so that the car is not the dominant mode of travel there is a need to deliver improvements to the walking and cycling network. An approach that does not include a strategy for increasing the uptake and experience of walking and cycling is therefore considered to be inappropriate.
- To achieve ambitious targets in the use of public transport networks, there is a need to transform the public transport network. The Council commissioned a study to explore how such improvements could be achieved, and a potential mass transit network has been identified as an appropriate way of achieving this.
- There is also a need to manage demand for private car travel and improve the efficiency and connectivity of networks. An approach that does not involve such measures would make it more difficult to achieve sustainable economic growth. Demand management also works hand-in-hand with measures to improve public transport and active modes of travel.

7. Appraisal of the draft Plan

7.1 Introduction

This section presents an appraisal of the Plan against the SEA Framework. Effects have been identified taking into account a range of characteristics including: magnitude, duration, frequency, and likelihood. Combined, these factors have helped to identify the significance of effects, whether these are positive or negative.

To give the appraisal a clear structure but avoid repetition and duplication, the findings are presented in a series of summary tables for each SEA Topic. The tables set out all the policies within the Plan, and identify the effects that different elements (groups of similar policies) of the Plan would have.

Finally, the effect of the Plan 'as a whole' is identified, which considers cumulative effects, synergistic effects and how the different plan policies interact with one another. This is important as Plan policies should be read in the context of the whole Plan and not in isolation.

A score is given to reflect the significance of effects as follows:

++	The policy is likely to have a significant positive effect .
+	The policy is likely to have a minor positive effect .
0	The policy is likely to have a neutral effect .
-	The policy is likely to have a minor negative effect .
--	The policy is likely to have a significant negative effect .
?	There are uncertainties with regards to the predicted effects.

7.2 Economy and Regeneration (SEA Objective 1): Support the growth of a modern economy which helps to address inequalities and deprivation.

Active Travel	AT1	AT2	AT3	AT4	AT5	AT6	AT7	AT8	AT9
<i>Effects</i>	+	+	+	0	+	0	+	+	0

The use of the car in Warrington is high and the problem is exacerbated by the New Town development pattern. In addition there are high levels of traffic volumes and traffic congestion along with high levels of commuting. Policy AT1 seeks to develop Active Travel infrastructure with AT2 seeking to target walking and cycling investment. AT3 seeks to design and build active travel facilities in an equitable way.

AT1, AT2 and AT3 will assist in improving connections between Warrington town centre and the M62 corridor and further afield. The policies will potentially assist in managing parking whilst ensuring access to the town centre. The policies will also assist in improving connectivity with the rest of the region as AT2 seeks to invest in links to rail stations. These policies will have positive effects. The policies could be strengthened by identifying what types of active travel infrastructure will be encouraged.

Policy AT4 focuses on monitoring Active Travel patterns and will have a neutral effect.

AT5, AT7, and AT8 will lead to positive effects as it will be likely to improve connectivity for the borough and further afield. AT5 would encourage further Active travel connections are created through the development control process for new development .

AT6 will lead to uncertain positive effects due to the way the policy is worded. It states that active travel will be considered which means that it may not always be used in every aspect. Government guidelines would have to be followed inevitably as it is national legislation which, as AT6 states that it will follow government guidelines and best practice.

Overall, the policies for active travel are likely to result in **minor positive effects** in terms of supporting the growth of a modern economy which helps to address inequalities and deprivation.

Smarter Travel Choices	STC1	STC2	STC3	STC4	STC5	STC6	STC7	STC8	STC9	STC10	STC11
<i>Effects</i>	+	+	+	+	+	+	+	+	+	+	+

STC1 is likely to have a positive effect and will make sure new environments being created encourage active travel. However, it does not mean individuals will all use active travel modes. The policy would be strengthened by seeking to reduce the need to travel by encouraging a balanced mix of land uses along with other measures.

Policy STC2 would help to manage parking whilst ensuring access to the town centre and would lead to positive effects.

Policy STC3 seeks to establish a city centre car club and bike sharing scheme. This will assist in ensuring that land suitable for employment uses has good transport connectivity, it will improve connections within Warrington centre and assist in managing parking.

Policies STC4, STC5, STC6, STC7, STC9, STC10 and STC11 are more likely to have positive effects due to the enhanced accessibility they give. These policies support active travel which are cheaper for individuals, therefore, encouraging walking and cycling to employment and services including communities within deprived areas.

Policy STC8 is similar to Policy AT1 and will lead to positive effects.

Overall, a **minor positive effect** is predicted as a result of the smarter travel choice policies. These would all support improved accessibility, which helps to support economic growth and social inclusion.

Safer Travel	RS 1	RS 2	RS 3	RS 4	RS 5	RS 6	RS 7	RS 8	RS 9	RS 10	RS 11	RS 12	RS 13	RS 14	RS 15	RS 16	RS 17	RS 18
Effects	0	0	0	0	0	0	0	0	0	0	0	0	0	+	+	+	0	0

The majority of policies are predicted to have neutral effects as they relate to specific safety measures, behaviors and procedures that do not relate directly to economic growth.

Policy RS14 and RS15 seek to promote safer road behavior for vulnerable users. Often vulnerable users of transport can be from deprived areas as they may use cheaper forms of transport such as walking cycling and bus travel. Demographics of these groups who could be most vulnerable will be older people, children and disabled people. Addressing these matters should therefore be helpful.

Policy RS16 seek to ensure that highway traffic uses appropriate routes in making journeys through and within the borough. The policy therefore will potentially improve connections within Warrington, which is necessary if modern economic growth is to be supported.

Overall, a **minor positive effect** is predicted, mainly relating to the benefits that could arise for deprived communities as a result of safer travel.

Passenger Transport	PT 1	PT 2	PT 3	PT 4	PT 5	PT 6	PT 7	PT 8	PT 9	PT 10	PT 11	PT 12	PT 13	PT 14	PT 15	PT 16	PT 17	PT 18	PT 19
Effects	++	+	+	+	+	+	+	+	+	+	+	+	+	++	++	++	++	++	+

Policy PT1 seeks to review the core strategic bus network which can potentially ensure that employment uses have good transport connectivity and can improve connections in Warrington and manage parking and will have significant positive effects.

Policies PT2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13 and 19 will have positive effects as they focus on the improvement of public transport facilities and options for individuals in Warrington. The policies particularly focus on improving transport within Warrington which should help to support business growth in these areas.

Policies PT14-PT18 identify specific rail infrastructure development opportunities including HS2 and Northern Powerhouse Rail which would significantly assist in releasing employment land and improve transport connections within Warrington and improve connectivity with the rest of the region.

The overall score for Passenger Transport policies against the SEA objective is a **significantly positive effect**.

Cleaner Fuel	CF1	CF2	CF3	CF4
Effects	+	+	+	+

CF1, CF2, CF3 and CF4 will support the uptake of low emissions vehicles, which will become a necessary feature of a modern transport network. Consequently, **minor positive effects** are predicted overall.

Network Management	NM1	NM2	NM3	NM4	NM5	NM6	NM7	NM8	NM9	NM 10	NM 11	NM 12	NM 13
Effects	+	+	+	+	+	+	+	+	+	+	+	+	+

NM1 will have a positive effect however it is part of the transport act therefore it would be a government requirement for a local authority to do this anyway.

Policies NM2-NM13 are likely to have a positive effect as they will improve connectivity throughout the borough and promote sustainable transitions to new transport systems. To support a modern economy, these enhancements will be necessary, which is acknowledged by policy NM13 in particular.

Policies NM5,6,7 and 8 seek to manage parking whilst ensuring access to the town centre. This will help to ensure that there is appropriate access to town centre jobs, retail and leisure.

The overall score for the network management policies against the SEA objective 1 is a **minor positive effect**.

Asset Management	AM1	AM2	AM3	AM4	AM5	AM6
<i>Effects</i>	+	+	+	+	+	+

Transport systems managed well can have significant financial savings, which could help to benefit groups from a lower income band. AM2, AM3, and AM4 are policies that will help the cost of transport not to be inflicted on the consumer including communities of greatest need. Therefore positive effects are predicted.

AM1 and AM2 are likely to have positive effects as they are management procedures based policies and AM,4,5 and 6 are likely to have a positive effect as they are policies that will try and make the negative externalities of transport have minimum impact in terms of emissions, costs and transport efficiency.

Policy AM3 seeks to maximise opportunity for investment in the transport network which has the potential to improve connections within Warrington (which is beneficial for business).

The overall effect of the Asset management policies on SEA objective 1 is a **minor positive effect**.

Freight Management	FM 1	FM 2	FM 3	FM 4	FM 5	FM 6	FM 7	FM 8	FM 9	FM 10	FM 11	FM 12	FM 13	FM 14	FM 15	FM 16
<i>Effects</i>	+	0	0	0	+	+	+	+	+	+	+	+	0	0	+	+

Policies FM2, 3, 4, 13 and 14 relate to air quality, construction logistics plans and information for freight operators for loading bays. These are beneficial measures with regards to business efficiency, but are unlikely to lead to benefits beyond the baseline position. Therefore, neutral effects are predicted.

FM1,5,6,7,8,9,10,11,15 and 16 are likely to have positive effects as they focus on managing freight transport infrastructure, which would support the growth of a modern economy. In particular it will allow the Borough to take advantage of regional growth opportunities such as the Liverpool Superport.

Overall, a **minor positive effect** is predicted.

Cumulative effects of the plan policies for SEA Objective 1

Taking these policy themes and combining overall scores allows for the cumulative effects of the Plan to be established. These effects are represented visually in the table below, with a summary of effects provided also.

Policy groups	ATP	STCP	RS	PTP	CFP	NMP	AMP	FMP
<i>Significance of effects</i>	+	+	+	++	+	+	+	+

Overall a **significant positive effect** is predicted as improvements to the transport network are critical to support a modern economy. In particular measures to; reduce car usage, improve accessibility, strengthen and expand public transport network, enable more environmental friendly travel, and freight management will help to transform the way that people and goods are transported. A number of policies also seek to ensure that deprived communities are supported.

7.3 Economy and Regeneration (SEA Objective 2): Reduce poverty, deprivation and social exclusion and secure economic inclusion

Active Travel	AT1	AT2	AT3	AT4	AT5	AT6	AT7	AT8	AT9
<i>Effects</i>	+	+	+	0	+	0	+	0	0

Deprivation across the borough as a whole is below regional and national averages, but there has been a slight worsening in the overall index of deprivation from 2010-2015. However, there are inequalities across the borough with several communities within the inner areas of Warrington falling into the 10% most deprived areas in England. Access to services and jobs is a key factor that can help to address deprivation in such areas.

Policies AT1,2,3,5 and 7 are likely to have positive effects as they focus on making transport accessible to everyone including people on low incomes.

Policy AT4 focuses on monitoring active travel patterns, which is a procedural matter and unlikely to lead to notable impacts in terms of social inclusion.

Similarly, Policy AT6 encourages the use of Best Practice and Government Guidance, and Policy AT8 focusing on the specific needs of equestrians, neither of which is directly related to addressing economic inclusion.

Overall, a **minor positive effect** is predicted as improvements in walking and cycling links will help to support accessibility for a range of communities, particularly those that do not have access to a private vehicle.

Smarter Travel Choices	STC1	STC2	STC3	STC4	STC5	STC6	STC7	STC8	STC9	STC10	STC11
<i>Effects</i>	+	+	0	+	+	0	+	+	+	+	+

Policies STC1, 2,4,5,7,8 and 9 are likely to have positive effects as they will give greater travel options for people in Warrington to use and they should cater to all income groups as well.

Policy STC3 relates to promoting of a car club and bike sharing scheme and is likely to have a **neutral effect**.

it is unclear if adult cycle training courses (SC6) will be easily accessed by people on low incomes, and certain groups such as those with disabilities would not benefit from such schemes. Therefore, this policy is also likely to have a **neutral effect**.

STC10 and 11 particularly focus on allowing transport cost assistance for jobseekers which contributes to reducing poverty and social inclusion, which are positive effects.

The overall score for Smarter Travel Choices policies is **minor positive effects**.

Safer Travel	RS1	RS2	RS3	RS4	RS5	RS6	RS7	RS8	RS9	RS10	RS11	RS12	RS13	RS14	RS15	RS16	RS17	RS18
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	+	+	0	0	0

Policies RS1,2,3,4,5,6,7,8,9,10,11,12,13,16,17 and 18 will have a neutral effect. These policies promote the Safe Systems approach and road safety measures and will not directly contribute to reducing poverty, deprivation and social exclusion and securing economic inclusion.

Policy RS14 and RS15 seek to promote safer behaviour for vulnerable road users, encouraging walking and cycling, which would improve access to public transport for the elderly and those with a disability. These

policies are therefore likely to have positive effects.

Overall the safer travel policies will have broadly neutral effects, but RS14 and RS15 contribute **minor positive effects**.

Passenger Transport	PT 1	PT 2	PT 3	PT 4	PT 5	PT 6	PT 7	PT 8	PT 9	PT 10	PT 11	PT 12	PT 13	PT 14	PT 15	PT 16	PT 17	PT 18	PT 19
<i>Effects</i>	++	++	+	++	+	+	++	++	++	+	+	+	+	++	++	++	++	++	+

Policies PT1, PT2, PT4, PT7 - PT9, and PT14-PT18 are seeking to improve access to public transport and will improve access to such services for people on low incomes and/or for the elderly or people with a disability. Policies PT14 - PT18 in particular could generate significant positive effects.

Policies PT3, PT5, PT6, PT10-PT13 and PT19 either generally seek to improve access to public transport or set out specific improvements which would be potentially beneficial to all. These policies are likely to have positive effects.

These policies are likely to have **significant positive effects** in combination.

Cleaner Fuel	CF1	CF2	CF3	CF4
<i>Effects</i>	+ [?]	+ [?]	+ [?]	+ [?]

CF1, CF2, CF3 and CF4 will lead to potential positive effects as the use of cleaner fuels should help to improve environmental quality in the longer term, with benefits for human health. Deprived communities often suffer disproportionately by such issues, and so such changes are positive.

The overall score for Cleaner Policies against SEA objective 2 is a **potential minor positive effect**.

Network Management	NM1	NM2	NM3	NM4	NM5	NM6	NM7	NM8	NM9	NM 10	NM 11	NM 12	NM 13
<i>Effects</i>	0	+	+	0	0	0	+	0	0	0	0	+ [?]	+ [?]

Policies NM1, NM4, NM5, NM6, NM8, NM8, NM9, NM10 and NM11 are thematic policies which are unlikely to contribute to making transport infrastructure more accessible to people on low incomes. These policies will therefore have neutral effects. Policy NM12 could help fund improvements to transport that benefit a wide range of communities.

Policy NM2, NM3 and NM7 likely to have positive effect due to them working towards the improvement of the transport services in Warrington which will lead to potential long-term savings which means that transport can be at a lower cost for the consumer.

NM13 will help to ensure that economic growth is supported in the long term through the delivery of necessary major infrastructure. This is positive, but the effects are uncertain as it will be linked to a Local Plan Review.

The overall score for Network Management Policies on objective 2 is a **minor positive effect**.

Asset Management	AM1	AM2	AM3	AM4	AM5	AM6
<i>Effects</i>	+	+	+	+	+	+

Transport systems managed well can have significant financial savings therefore these costs will not be inflicted on the consumer. Policies AM1, AM2, AM3, AM4, AM5 and AM6 are policies that will help the cost of transport not to be inflicted on the consumer including communities.

AM1 and AM2 are likely to have positive effect as they are management procedures based policies and AM3,4,5 and 6 are likely to have a positive effect as they are policies that will try and make the negative externalities of transport have minimum impact in terms of emissions, costs and transport efficiency.

The overall effect of the Asset management policies on SEA objective 2 is a **minor positive effect**.

Freight Management	FM 1	FM 2	FM 3	FM 4	FM 5	FM 6	FM 7	FM 8	FM 9	FM 10	FM 11	FM 12	FM 13	FM 14	FM 15	FM 16
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Policy FM1-FM16 relate to air quality, construction logistics plans and information for freight operators for loading bays, managing freight and associated infrastructure. These are likely to have **neutral effects** on SEA objective 2.

The overall effect of the Freight Management Policies on SEA objective 2 is a **neutral effect**.

Cumulative effects of the Plan on SEA Objective 2

Taking these policy themes and combining overall scores allows for the cumulative effects of the Plan to be established. These effects are represented visually in the table below, with a summary of effects provided also.

Policy groups	ATP	STC	RS	PTP	CFP	NMP	AMP	FMP
<i>Significance of effects</i>	+	+	0	++	+?	+	+	0

Overall a **significant positive effect** is predicted in relation to SEA Objective 2. This is largely due to the significant effects generated by the passenger transport policies which could help to improve access for disadvantaged groups. Positive effects are also generated from a range of other policies.

7.4 SEA Objective 3 Health and Wellbeing: Improve community safety and reduce the fear of crime and disorder.

Active Travel	AT1	AT2	AT3	AT4	AT5	AT6	AT7	AT8	AT9
<i>Effects</i>	+	+	+	0	+	0	0	0	0

Fear of Crime and antisocial behaviour remains a sustainability issue for the Borough. Household surveys show that fear of crime at night is higher than national figures, and substantially higher in more deprived neighbourhoods.

It is important to ensure that people feel safe when travelling, especially if levels of walking and cycling are to be increased. Policies in the Local Transport Plan have the potential to improve the overall safety of the Borough and help reduce road traffic accidents and reduce transport related crime, anti-social behaviour and the fear of crime.

Policies AT1, 2, 3 and 5 are likely to have some positive effect as investment in active travel infrastructure will improve the overall safety for users.

Policies AT4, AT6, AT7, AT8 and AT9 relate to monitoring, reviews, application of best practice and government guidance and improvements for disabled users and meeting the needs of equestrians and therefore are not directly related to community safety or fear of crime. These policies will have a neutral effect.

The overall effect of the Active Travel Policies on SEA objective 3 is a **minor positive effect**.

Smarter Travel Choices	STC1	STC2	STC3	STC4	STC5	STC6	STC7	STC8	STC9	STC10	STC11
<i>Effects</i>	+	+	0	+	+	+	0	0	++?	0	0

Policy STC1 is likely to have positive effects as new developments could potentially be built and have a safer environment with active travel designed within the development from the beginning.

Policy STC9 seeks to expand the choice of travel which would reduce the need to travel by car which in turn could reduce road traffic accidents.

Policy STC5 will support the rollout of new infrastructure for Active Travel which should improve the safety for such road users.

Policy STC4 and STC6 seeks to support child training courses and the use of adult cycle training courses which can potentially improve safety and reduce traffic accidents.

These policies will therefore all have a positive effect. These are unlikely to be significant but they will make a small contribution towards improved safety.

Policy STC9 seeks to support a safer travelling environment around Warrington and this policy could also help to reduce transport related crime, anti-social behaviour and the fear of crime. This policy could therefore have a **significant positive effect** in the longer term (in combination with other policies).

Policy STC3, STC7, STC8, STC10 and STC11 relate to other policy themes and are therefore likely to have a neutral effect with regards to community safety.

The overall effect of the Smarter Travel Choices Policies on SEA objective 3 is **significantly positive**. This relates mostly to Policy STC9, which explicitly seeks to support safer traveling. However, several other policies also contribute to an overall culture of improved safety for pedestrians, road users and on public safety. The effects are significant in combination, though it should be noted that other 'non-travel' environments would not be likely to benefit from improvements. The Warrington Local Plan could help to

address such issues though.

Safer Travel	RS 1	RS 2	RS 3	RS 4	RS 5	RS 6	RS 7	RS 8	RS 9	RS 10	RS 11	RS 12	RS 13	RS 14	RS 15	RS 16	RS 17	RS 18
<i>Effects</i>	+	+	+	+	+	+	+	0	0	0	+	+	+	+	+	+	+	+

Policies RS1,RS2,RS3,RS4,RS5,RS13,RS14,RS16 and RS17 are likely to have positive effects due to making road safety a cultural priority. This could help to change peoples attitudes, and embed road safety behaviours as second nature.

Policies RS6,RS7,RS11,RS12,RS15 and RS18 will likely have positive effects as they will help to reduce casualties on the road; thereby improving community safety when traveling around Warrington. Many of the policies relate to enforcement measures with regards vehicle speeds, which have been evidenced to have a positive effect with regards to road safety.

Policies RS8, RS9 and RS10 will have neutral effects as they relate to monitoring, data and governance. The overall effect of the Smarter Travel Choices Policies on SEA Objective 3 is a **significant positive effect**.

A wide range of measures are proposed that will each contribute positively towards improvements in travel safety. In combination, the effects are likely to be **significant**.

Passenger Transport	PT 1	PT 2	PT 3	PT 4	PT 5	PT 6	PT 7	PT 8	PT 9	PT 10	PT 11	PT 12	PT 13	PT 14	PT 15	PT 16	PT 17	PT 18	PT 19
<i>Effects</i>	0	0	0	0	0	+	0	0	+	0	0	0	0	0	0	0	0	0	0

The majority of policies relate to measures to seek to encourage more users to use passenger bus and rail transport modes. Increased patronage of such services could help to foster improved feelings of safety, but there is no direct link towards community safety and crime matters, and so effects are predicted to be broadly neutral.

Policies PT6 and PT9 are likely to have a minor positive effect as these policies seek to review transport infrastructure to maximise safety and security and promote better integration between different modes.

The overall effect of the Passenger Transport Policies on SEA Objective 3 is a **minor positive effect**.

Cleaner Fuel	CF1	CF2	CF3	CF4
<i>Effects</i>	0	0	0	0

The cleaner Fuel policies will have a **neutral effect** on community safety because they are focused on cleaner emission vehicles and they do not directly relate to community safety with regards to reducing crime and accidents.

Network Management	NM1	NM2	NM3	NM4	NM5	NM6	NM7	NM8	NM9	NM10	NM11	NM12	NM13
<i>Effects</i>	+	+	+	+	0	0	0	0	0	0	0	0	0

Policies NM1, NM2, NM3 and NM4 are likely to have positive effects as they seek to change the organisation of the transport system to make sure it is safe for users to use.

Policies NM5 – NM13 relate largely to car parking and other strategic matters which do not directly relate to safety or crime.

The policies could perhaps be enhanced by referring to a need for car parks to be designed so that they are safe, and perhaps achieve accreditation to a recognised standard such as 'Park Mark' (though control of such matters may need to be established in relation to town planning policy to be effective).

Overall the likelihood of effects for the Network Management policies is a **minor positive effect**.

Asset Management	AM1	AM2	AM3	AM4	AM5	AM6
<i>Effects</i>	0	0	0	0	0	0

Policies AM1-AM6 are likely to have neutral effects as they concentrate on managing assets, with no direct reference to safety.

Overall the Asset Management Policies will have a **neutral effect** in terms of community safety.

Freight Management	FM 1	FM 2	FM 3	FM 4	FM 5	FM 6	FM 7	FM 8	FM 9	FM 10	FM 11	FM 12	FM 13	FM 14	FM 15	FM 16
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Freight Management policies are likely to have a **neutral effects** as the focus us upon the transport of business goods rather than community safety.

Cumulative effects upon SEA Objective 3

Taking these policy themes and combining overall scores allows for the cumulative effects of the Plan to be established. These effects are represented visually in the table below, with a summary of effects provided also.

Policy groups	ATP	STCP	RS	PTP	CFP	NMP	AMP	FMP
<i>Significance of effects</i>	++	+	++	+	c	0	0	0

Overall a **significant positive effect** is predicted in relation to SEA Objective 3. This is largely due to the significant effects generated by the active travel policies and road safety policies. The Plan is likely to encourage greater usage of services, which can contribute to improved perceptions of safety with regards to crime. There are also direct measures to improve road safety.

7.5 Health and Wellbeing (Objective 4): Provide, protect or enhance leisure opportunities, recreation facilities, green infrastructure and access to the countryside

Active Travel	AT1	AT2	AT3	AT4	AT5	AT6	AT7	AT8	AT9
<i>Effects</i>	+	+	+	0	+	+	+	+	0

Most types of open space have increased in number since 2012. The largest increases were experienced with regards to Green Corridors, Parks & Gardens, and Natural/ Semi Natural Green Space and Incidental Space.

Equipped Play Sites have experienced a decrease in number, but have countered this by combining the remaining sites, enabling larger facilities. On balance, there was a positive change across the borough which resulted in extra open space sites being made available, equating to 260 hectares.

Predominantly, the overall distribution of all open space sites shows a tendency to be concentrated towards the higher density populations within the centre of the Borough, with varying spread depending on the typology of the site.

Policies AT1, AT2, AT3, AT5, AT6, AT7, AT8 and AT9 have positive effects as they encourage active travel which should improve access to leisure and recreation opportunities by walking or cycling. If active travel is integrated into green infrastructure corridors this should help to ensure that benefits for health are more pronounced.

Policies AT4 relate to monitoring active travel and will have a neutral effect.

The overall effect of the Active Travel Policies on SEA objective 4 is a **minor positive effect**.

Smarter Travel Choices	STC 1	STC 2	STC 3	STC 4	STC 5	STC 6	STC 7	STC 8	STC 9	STC 10	STC 11
<i>Effects</i>	+	+	0	0	+	0	0	+	0	+	0

Policy STC1, STC 2, STC5, STC8 and STC10 will encourage people to walk and cycle along by supporting the rollout of new infrastructure. This will provide opportunities for leisure and recreation. These policies are therefore likely to have positive effects.

Policies STC3, STC4, STC6, STC7, STC9 and STC11 are policies that relate to bike sharing schemes and training programmes and are not directly related to improving access to open space, sport and recreation facilities. Therefore, neutral effects are predicted.

Overall the Smarter Travel Choices policies are predicted to have **minor positive effects**.

Safer Travel	R S1	R S2	R S3	R S4	R S5	R S6	R S7	R S8	R S9	RS 10	RS 11	RS 12	RS 13	RS 14	RS 15	RS 16	RS 17	RS 18
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

The above policies relate to measures which encourage safer travel. This is unlikely to directly improve access to open space, sport and recreational facilities, but could perhaps encourage more active forms of travel. The policies are unlikely to do much with regards to protecting and enhancing networks of multi-functional green infrastructure. Consequently, **neutral effects** are predicted for each policy both individually and in combination.

Passenger Transport	PT 1	PT 2	PT 3	PT 4	PT 5	PT 6	PT 7	PT 8	PT 9	PT 10	PT 11	PT 12	PT 13	PT 14	PT 15	PT 16	PT 17	PT 18	PT 19
<i>Effects</i>	+ [?]	0	0	0	0	0	0	0	0										

An improvement in passenger transport is positive with regards to accessibility, but this will not necessarily improve access to open space and recreation locally. In particular, rail travel is less likely to be used to access local recreation, access to the countryside and open space. Therefore, policies PT12-PT18 are predicted to have broadly neutral effects (though together could have some positive implications).

Similarly, bus services are also unlikely to lead to better access to open space and recreation at a neighbourhood level. However, given that buses serve a wider range of communities, improvements to these services are more likely to serve access to wider leisure opportunities. As a result, minor uncertain positive effects are predicted for PT1-PT11.

Overall, the passenger transport policies ought to generate **minor positive effects** as they support improved accessibility in general (which could include access to leisure, recreation and health facilities).

Cleaner Fuel	CF1	CF2	CF3	CF4
<i>Effects</i>	0	0	0	0

These policies are predicted to have **neutral effects** as they bare no relation to accessibility or green infrastructure.

Network Management	NM1	NM2	NM3	NM4	NM5	NM6	NM7	NM8	NM9	NM10	NM11	NM12	NM13
<i>Effects</i>	0	+	0	0	0	0	0	0	0	0	0	0	0

Policies NM1 and NM3-NM13 are likely to have neutral effects as these policies directly relate to the management of the transport network and parking matters. Whilst this can improve the efficiency of travel (and thus reduce travel times), the influence upon recreational activities is minimal.

NM2 is likely to have positive effects as it seeks to provide facilities for pedestrians and cyclists which would improve access to open space, sport and recreational activities.

Overall, the network management policies are predicted to have **neutral effects** when it comes to accessibility to recreation, leisure and other facilities.

Asset Management	AM1	AM2	AM3	AM4	AM5	AM6
<i>Effects</i>	0	0	0	0	0	0

Policies AM1 – AM6 would have **neutral effects** both individually and in combination as they do not directly relate to improving access to open spaces and leisure opportunities.

Freight Management	FM 1	FM 2	FM 3	FM 4	FM 5	FM 6	FM 7	FM 8	FM 9	FM 10	FM 11	FM 12	FM 13	FM 14	FM 15	FM 16
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Policies FM1 – FM do not directly relate to improving access to open spaces and leisure opportunities. Each policy both individually and in combination is therefore predicted to have **neutral effects** with regards to the baseline position for SEA Objective 4.

Cumulative effects of the Plan

Taking these policy themes and combining overall scores allows for the cumulative effects of the Plan to be established. These effects are represented visually in the table below, with a summary of effects provided also.

Policy groups	ATP	STCP	RS	PTP	CFP	NMP	AMP	FMP
<i>Significance of effects</i>	+	+	0	+	+	0	0	0

The overall effect of the Plan with regards to SEA Objective 4 is a **minor positive effect**. This relates to policies which seek to improve active travel and accessibility on public transport. The effects are not predicted to be significant as there is no explicit goal to improve access to green infrastructure. No negative effects are identified as measures to improve the range of transport choices on offer throughout the Borough improves accessibility, which can only be a good thing in terms of accessing open space. Should open space be affected by new transport infrastructure it is more than likely that this would be compensated for through the application of the Warrington Local Plan policies.

7.6 Health and Wellbeing: Objective 5: Ensure good access to health services.

Active Travel	AT1	AT2	AT3	AT4	AT5	AT6	AT7	AT8	AT9
<i>Effects</i>	+	+	+	+	+	+	+	0	0

AT1, 2, 3,4,5,6 and 7 are likely to generate some positive effects as they will put in place infrastructure that could make health services more accessible via active travel. They would generally improve people's health as well as people would presumably be using active travel as a form of exercise.

AT8 is likely to have a neutral effect as it refers to active travel infrastructure for equestrian purposes. This is very specific to horse riders who would do this activity regardless, but the infrastructure allows them to do it on the highway instead of a field for example.

AT9 commits to a review of the PROW improvement plan, the outcome of which is not known.

Overall, a **minor positive effect** is predicted.

Smarter Travel Choices	STC1	STC2	STC3	STC4	STC5	STC6	STC7	STC8	STC9	STC10	STC11
<i>Effects</i>	+	+	0	0	0	0	+	+	+	+	0

Several policies will contribute towards a general improvement in the awareness of, ease of access to and take-up of active travel and public transportation usage. This should have positive effects with regards to accessibility to health services. However, the effects are minor given that the location of health facilities (and their capacity to support communities) would not be influenced by these policies.

Policies STC1 and STC2 ought to ensure that access to health facilities is a consideration in the siting of new development, but this will be dependent upon liaison with planning officers.

Several policies are predicted to have neutral effects as they have no relation to health facilities (For example, training to use cycles, and the use of school travel plans).

Overall, a **minor positive effect** is predicted, as improved awareness of smarter travel choices, and better facilities could help improve physical access to health facilities for certain people.

Safer Travel	R S1	RS 2	RS 3	RS 4	RS 5	RS 6	RS 7	RS 8	RS 9	RS 10	RS 11	RS 12	RS 13	RS 14	RS 15	RS 16	RS 17	RS 18
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

These policies are primarily concerned with the improvement of road safety, for all kinds of road users. This is not likely to have a direct effect upon accessibility to health facilities.

Whilst people are generally willing to access health facilities regardless of road safety levels, improvements in travelling environments could potentially help to encourage a greater use of alternative modes to the private car. These effects would be indirect though and are uncertain, so **neutral effects** are predicted overall.

Passenger Transport	PT 1	PT 2	PT 3	PT 4	PT 5	PT 6	PT 7	PT 8	PT 9	PT 10	PT 11	PT 12	PT 13	PT 14	PT 15	PT 16	PT 17	PT 18	PT 19	
<i>Effects</i>	+	+	+	+	+	+	+	+	+	+	++ ?	+	+	+	+	+	+	+	0	0

In combination, the passenger transport policies should help to improve the quality, ease of access, geographical spread and usage of public transport services. Each policy is likely to contribute minor positive effects individually. However, in combination there may be significant positive effects.

In particular, should policy PT11 lead to the establishment of a mass transit system, this could have major benefits with regards to accessibility. There is uncertainty about the effects at this stage though due to lack of firm proposals.

It is recommended that the optioneering process involves an assessment of environmental impacts to help guide a preferred approach.

Overall, a **minor positive effect** is predicted.

Cleaner Fuel	CF1	CF2	CF3	CF4
<i>Effects</i>	0	0	0	0

Though cleaner fuels would benefit health by reducing emissions of pollutants; this would not have an effect upon access to health care facilities. Consequently, **neutral effects** are predicted for SEA Objective 5.

Network Management	NM1	NM2	NM3	NM4	NM5	NM6	NM7	NM8	NM9	NM 10	NM 11	NM 12	NM 13
<i>Effects</i>	0	0	+ [?]	+ [?]	0	0	0	0	0	0	0	0	0

Policies NM3 and NM4 could contribute a positive effect towards accessibility to health facilities as they seek to reduce congestion and improve traffic management. This ought to help people get to places within Warrington easier and quicker, which is positive with regards to the objective.

Overall a **minor positive effect** is predicted to reflect these factors, but there is a degree of uncertainty given the high level nature of the policies.

Asset Management	AM1	AM2	AM3	AM4	AM5	AM6
<i>Effects</i>	+ [?]					

Collectively these policies seek to achieve better management of the highway network and assets. Should this lead to a successful programme of improvements to the network, then it could help people to travel to health care facilities easier and quicker.

These are **minor positive effects**, but given the high level nature of the policies a degree of uncertainty exists.

Freight Management	FM 1	FM 2	FM 3	FM 4	FM 5	FM 6	FM 7	FM 8	FM 9	FM 10	FM 11	FM 12	FM 13	FM 14	FM 15	FM 16
<i>Effects</i>	+ [?]	0	0	0	+ [?]	0	0	+ [?]	+ [?]	+ [?]	0	0	0	0	0	0

The majority of policies are predicted to have neutral effects as they are unlikely to affect accessibility. For example, some policies focus on moving towards more environmentally friendly practices with regards to freight, whilst others seek to achieve better facilities for freight transport with regards to parking and operations.

Minor positive effects are predicted with regards to policies FM1, FM5, FM8, FM9 and FM10. These policies seek to improve the management of freight so as to reduce congestion and impacts upon other road users. This should help to improve accessibility in general, though the implications are relatively minor when considered in isolation.

Overall, **minor positive effects** are predicted.

Cumulative effects of the Plan

Taking these policy themes and combining overall scores allows for the cumulative effects of the Plan to be established. These effects are represented visually in the table below, with a summary of effects provided also.

Policy groups	ATP	STCP	RS	PTP	CFP	NMP	AMP	FMP
<i>Significance of effects</i>	+	+	0	+	0	+ [?]	+ [?]	+ [?]

The overall effect of the Plan with regards to SEA Objective 5 is a **minor positive effect**. Though there are no specific measures relating to access to health facilities, the plan will lead to a general improvement in accessibility, which would likely include better access to health facilities.

7.7 Accessibility (Objective 6): Support sustainable patterns of economic growth by; securing improvements to transport networks, ensuring good access to jobs and services, and enabling sustainable modes of travel.

Active Travel	AT1	AT2	AT3	AT4	AT5	AT6	AT7	AT8	AT9
<i>Effects</i>	+	+	+	+	+	+	+	+	+?

The active travel policies are all likely to have positive effects as they support transport that is available to a wide range of people at little cost. Walking and cycling are sustainable forms of travel (for those that are able), and so improvement of these networks, awareness and engagement with active travel could lead to **significant positive effects** with regards to accessibility.

Smarter Travel Choices	SC1	SC2	SC3	SC4	SC5	SC6	SC7	SC8	STC9	STC10	STC11
<i>Effects</i>	+	+	+	+	+	+	+	+	+	+	+

All the smarter travel choice policies are likely to have positive effects as they each seek to encourage sustainable and active modes of travel. For a range of communities this is positive with regards to accessibility, especially where there is a reliance on such services and networks.

With regards to services and jobs, policies STC1 and STC11 are particularly positive, as they seek to ensure new developments are accessible (STC1) and to provide assistance for jobseekers to help people into employment (STC11).

In combination, **significant positive effects** are predicted.

Safer Travel	RS 1	RS 2	RS 3	RS 4	RS 5	RS 6	RS 7	RS 8	RS 9	RS 10	RS 11	RS 12	RS 13	RS 14	RS 15	RS 16	RS 17	RS 18	
<i>Effects</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

The policies are likely to have some positive effect on accessibility, as they seek to make traveling environments safe. They particularly focus on reducing fatalities and changing driver behaviour to increase safety of transport in Warrington.

Whilst this does not improve accessibility with regards to distance to services, and the efficiency of networks, congestion and so on, it does remove barriers to the take-up of cycling, walking and public transport.

Overall, **minor positive effects** are predicted.

Passenger Transport	PT 1	PT 2	PT 3	PT 4	PT 5	PT 6	PT 7	PT 8	PT 9	PT 10	PT 11	PT 12	PT 13	PT 14	PT 15	PT 16	PT 17	PT 18	PT 19
<i>Effects</i>	+	+	+	++	+	+	++	++	+	+	++?	+	+	+	+	+	+	0	0

The passenger transport policies focus on accessibility and ensuring that there will be sustained and enhanced services for users. Overall, the policies should encourage more people to use facilities (which promotes sustainable travel); should improve the experience and efficiency of travel using passenger transport (which improves access to services and jobs); and specifically targets disadvantaged groups who might otherwise not have the same access (Policies PT4, PT7 and PT8 are significantly positive in this respect).

In combination **significant positive effects** are predicted for accessibility. There could also be significant effects in relation to specific individual policies in relation to groups with protected characteristics.

Cleaner Fuel	CF1	CF2	CF3	CF4
<i>Effects</i>	+	+	+	+

The effects of these policies with regards to accessibility are limited in respect of groups that cannot currently afford electric vehicles. Similarly, there is no effect in terms of the speed in which trips take.

What is positive though is the move towards more sustainable modes of travel that will allow people to take up electric vehicles more readily without it being an inconvenience to charge their vehicles. This advance in technology should help to drive sustainable economic growth in the borough.

Overall, **minor positive effects** are predicted.

Network Management	NM 1	NM 2	NM 3	NM 4	NM 5	NM 6	NM 7	NM 8	NM 9	NM 10	NM 11	NM 12	NM 13
<i>Effects</i>	0	0	+	+	?	?	+	+	0	+	+	+	+

Policies NM1, NM2 and NM9 are broadly a continuation of current actions, and so neutral effects are predicted.

Policies, NM3, NM4, NM8, NM10-NM13 are all predicted to contribute minor positive effects in terms of accessibility. If networks are more efficient and traffic is better managed, then this is beneficial for users regardless of the mode of transport. The use of technology (NM4) will also help people to better plan their journeys and have greater confidence in the reliability of services.

Policies NM5 and NM6 are predicted to have uncertain effects. Whilst parking provision and management is positive in respect of sustainable travel, it could worsen 'accessibility' for those wanting to (or requiring) use of a private vehicle.

Policy NM8 could have significant positive effects for those with a disability.

NM13 will ensure that the longer term requirements of the transport network are well-planned, which is a positive effect.

Overall, the policies are predicted to have **significant positive effects**.

Asset Management	AM1	AM2	AM3	AM4	AM5	AM6
<i>Effects</i>	+	+	+	+	+	+

The policies are likely to have **minor positive effects**, as the management and improvement of transport infrastructure will contribute towards improved accessibility.

Freight Management	FM 1	FM 2	FM 3	FM 4	FM 5	FM 6	FM 7	FM 8	FM 9	FM 10	FM 11	FM 12	FM 13	FM 14	FM 15	FM 16
<i>Effects</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Overall, in combination, the freight management policies could have a **significant positive effect** with regards to the sustainable movement of goods. This is beneficial in terms of carbon emissions reductions, but could also relieve some pressure off the road networks, with knock on benefits for other users in terms of accessibility.

Cumulative effects of the Plan

Taking these policy themes and combining overall scores allows for the cumulative effects of the Plan to be established. These effects are represented visually in the table below, with a summary of effects provided also.

Policy groups	ATP	STCP	RS	PTP	CFP	NMP	AMP	FMP
<i>Significance of effects</i>	++	++	+	++	+	++	+	++

Unsurprisingly, the Plan is predicted to have **significant positive effects** upon accessibility. There are some key benefits likely to arise:

- Specific community groups should benefit in terms of improved access to services.
- Active modes of travel will be supported and barriers to their use ought to be addressed.
- New development will need to be well served by a range of transport modes and local services.
- There should be a modal shift in the movement of freight from roads to rail and water.
- A reduction in carbon emissions related to technological improvements.

Though certain elements of the Plan could encourage increased car trips (for example increased parking provision / improvements to road networks), these are offset significantly by the host of positive measures.

7.8 Housing (SEA Objective 7): Support sustainable patterns of housing growth

Active Travel	AT1	AT2	AT3	AT4	AT5	AT6	AT7	AT8	AT9
<i>Effects</i>	+	+	+	0	+	0	0	0	0

Several policies seek to improve cycling and walking links, including to new developments. This will help to support sustainable patterns of residential development, but will be dependent upon the application of parallel planning policies.

The policy also seeks to focus investment in areas where the greatest benefits could be achieved such as links to rail stations. This ought to help support new residential development in the town centre areas (which are a key element of the emerging Warrington Local Plan).

Overall, a **minor positive effect** is predicted, reflecting these factors.

Smarter Travel Choices	STC1	STC2	STC3	STC4	STC5	STC6	STC7	STC8	STC9	STC10	STC11
<i>Effects</i>	+	+	0	0	0	0	0	+?	+?	+?	+?

Several policies actively seek to encourage and enable sustainable patterns of housing and employment development (STC1 and STC2), and so positive effects are predicted.

Policies STC8-STC11 are predicted to have potential positive effects also, but there is a greater degree of uncertainty as they involve factors that contribute to attractive housing locations rather than supporting housing provision directly.

Policies STC3-STC7 are predicted to have neutral effects as they are focused upon training and awareness raising, which do not relate to housing provision or surrounding environments.

Overall, a **minor positive effect** is predicted.

Safer Travel	RS1	RS2	RS3	RS4	RS5	RS6	RS7	RS8	RS9	RS10	RS11	RS12	RS13	RS14	RS15	RS16	RS17	RS18
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

The safer travel policies are predicted to have broadly neutral effects upon housing delivery. This is because they focus on behaviours, managing speed and procedural issues in tackling safety issues. However, in combination, a **minor positive effect** could be achieved with regards to sustainable residential development

For example; safer travel behaviour from motorists and the removal of psychological barriers into other modes of transport such as cycling should help to connect residential areas with services and jobs.

Passenger Transport	PT1	PT2	PT3	PT4	PT5	PT6	PT7	PT8	PT9	PT10	PT11	PT12	PT13	PT14	PT15	PT16	PT17	PT18	PT19
<i>Effects</i>	+	+	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0

Policies PT1, PT2 and PT9 are each predicted to have positive effects upon housing as they explicitly seek to link residential areas with key services and jobs, improve the existing transport networks and seek contributions towards infrastructure enhancements.

New developments are typically built around areas with good transport links, so these policies ought to help

support new housing growth in sustainable locations.

Policies that seek to improve the usage and quality of passenger transport services will also be positive in terms of creating well connected residential areas. However, the effects are less direct and more uncertain.

Overall, a **minor positive effect** is predicted.

Cleaner Fuel	CF1	CF2	CF3	CF4
<i>Effects</i>	0	0	0	0

The policies are predicted to have **neutral effects** on housing development as they are closely focused upon enabling cleaner fuel uptake rather than changes to the built environment or efficiency of transportation networks.

Network Management	NM1	NM2	NM3	NM4	NM5	NM6	NM7	NM8	NM9	NM10	NM11	NM12	NM13
<i>Effects</i>	+	+	+	+	+	+	+	+	+	+	+	+	+

NM1,4,6,9-11 are likely to have positive effects as they focus on providing better transport infrastructure in Warrington which is necessary to support sustained housing growth.

NM2,3,5,7 and 8 are also likely to have a positive effects as they are likely to make residential developments more attractive with regards to accessibility and the quality of the environment.

NM12 is likely to have positive effects with regards to housing as It will help to support continued growth by facilitating transformational transport schemes. Likewise, policy NM13 will help to identify what is needed to support growth aspirations in the longer term.

In combination, **significant positive effects** are predicted, as without such improvements, it may be difficult to support the housing that is needed to accommodate needs.

Asset Management	AM1	AM2	AM3	AM4	AM5	AM6
<i>Effects</i>	+	+	+	+	+	+

AM1,4 and 6 are likely to have positive effects as attractive housing developments rely upon well-maintained transport assets.

AM2,3 and 5 is likely to lead to some positive effect on objective 7 as they focus on cutting co2 emissions continued maintenance and investment in transport assets. This is positive particularly where public transport routes and transport networks link to residential areas which are expected to grow.

Overall, **minor positive effects** upon housing are predicted.

Freight Management	FM1	FM2	FM3	FM4	FM5	FM6	FM7	FM8	FM9	FM10	FM11	FM12	FM13	FM14	FM15	FM16
<i>Effects</i>	0	0	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	0	0	

FM1, 2,15 and 16 are likely to have neutral effects on objective 7 due them focusing upon air quality improvement, freight transport routes and freight parking which does not directly relate to sustained housing growth.

FM3- 14 are all policies that directly effect freight transport in Warrington.

There is some focus on increasing rail freight transport particularly in FM8. This could have uncertain positive effects for sustained housing growth (objective 7) as the increase in this business sector could attract people to come and live and work in Warrington.

The increase in transport such as rail freight could result in less congestion from motor vehicle freight being on the roads, which would allow easier commuting patterns from people living in residential areas to services and jobs. These are **minor and uncertain positive effects** though.

Cumulative effects of the Plan

Taking these policy themes and combining overall scores allows for the cumulative effects of the Plan to be established. These effects are represented visually in the table below, with a summary of effects provided also.

Policy groups	ATP	STCP	RS	PTP	CFP	NMP	AMP	FMP
Significance of effects	+	+	+	+	0	++	+	+ [?]

The Plan is predicted to have **significant positive effects** upon housing. Without the measures in place to support economic and housing growth, there would be a danger of the Local Plan Strategy failing. Therefore, the LTP4 and subsequent schemes is of critical importance. Additionally, the Plan seeks to secure sustainable patters of growth and movement, both of which are important with regards to the delivery of new homes.

7.9 Natural Resources (Objective 8): Protect, manage and improve water quality.

Active Travel	AT1	AT2	AT3	AT4	AT5	AT6	AT7	AT8	AT9
<i>Effects</i>	?	?	?	?	?	?	?	?	?

The policies seek to encourage and promote Active Travel. This is likely to encourage a decrease in road traffic which in turn could lead to a reduction in water pollutants from surface runoff.

While the delivery of bridges to support active travel could potentially have an impact on Warrington waterways this is largely dependent on how this infrastructure is delivered.

In addition, whilst measures that encourage active travel may reduce the level of road traffic and associated surface water-runoff, the extent of this potential benefit is questionable. Overall effects would be indirect and are uncertain, so neutral effects are predicted overall.

Smarter Travel Choices	STC1	STC2	STC3	STC4	STC5	STC6	STC7	STC8	STC9	STC10	STC11
<i>Effects</i>	?	?	?	?	?	?	?	?	?	?	?

Policies STC1-STC11 relate largely to encouraging smarter travel choices seeking to encourage people to walk, cycle and use public transport. This is unlikely to have a direct impact on water quality. However, an overall reduction in car travel ought to help reduce pollutants being washed off roads. Effects would be indirect and are uncertain, so neutral effects are predicted overall.

While encouraging active travel may reduce the need for other car based transport infrastructure such as bridges (which could potentially have an impact on Warrington waterways) this is largely dependent on how this infrastructure is delivered. Overall effects would be indirect and are uncertain, so neutral effects are predicted overall.

Safer Travel	RS 1	RS 2	RS 3	RS 4	RS 5	RS 6	RS 7	RS 8	RS 9	RS 10	RS 11	RS 12	RS 13	RS 14	RS 15	RS 16	RS 17	RS 18
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Policies RS1-RS18 relate largely to encouraging road safety and are therefore unlikely to have a direct impact on water quality. Consequently, neutral effects are predicted overall.

Passenger Transport	PT 1	PT 2	PT 3	PT 4	PT 5	PT 6	PT 7	PT 8	PT 9	PT 10	PT 11	PT 12	PT 13	PT 14	PT 15	PT 16	PT 17	PT 18	PT 19
<i>Effects</i>	?	?	0	?	0	0	0	?	?	?	?	0	?	?	?	?	0	0	0

Policies PT1, PT2, PT4, PT8- PT11 and PT13-PT16 seek to encourage and promote bus and rail services in Warrington. This is likely to encourage a decrease in road traffic which in turn could lead to a reduction in water pollutants from surface runoff. However, effects would be indirect and are uncertain, so neutral effects are predicted overall.

Policies PT3, PT5, PT6, PT7, PT12 and PT17 relate to specific measures which seek to improve bus and rail services such as bus journey times. The policies are unlikely to have a direct impact on water quality. Despite, improved public transport potentially reducing pollution from car trips, the effects would be indirect and are uncertain, so neutral effects are predicted.

Overall, **minor positive effects** are predicted as a result of these policies, reflecting the potential reductions in the amount of emissions/pollutants being deposited on road networks as a result of improved passenger transport services.

Cleaner Fuel	CF1	CF2	CF3	CF4
<i>Effects</i>	?	?	?	?

Policies CF1-CF4 relates to specific measure which seeks to encourage the use of low emission vehicles. The policies are unlikely to have a direct impact on water quality, but would help to reduce diffuse pollution from vehicles being carried into watercourses. Overall effects would be indirect and are uncertain, but could be positive in combination

Network Management	NM1	NM2	NM3	NM4	NM5	NM6	NM7	NM8	NM9	NM10	NM11	NM12	NM13
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	0

Policies NM1 – NM13 directly relate to the management of the highways and parking and are unlikely to have a direct impact on water quality. Overall effects would be indirect and are uncertain, so **neutral effects** are predicted overall.

Asset Management	AM1	AM2	AM3	AM4	AM5	AM6
<i>Effects</i>	0	0	0	0	0	0

Policies AM1 - AM6 relate to asset management of the transport network. Specific measures to improve highways assets could include improving highway drainage, but effects on water quality are unlikely to be significant.

Freight Management	FM1	FM2	FM3	FM4	FM5	FM6	FM7	FM8	FM9	FM10	FM11	FM12	FM13	FM14	FM15	FM16
<i>Effects</i>	0	0	0	0	0	0	0	+	-	-	0	0	0	0	0	0

Policy FM8 seeks to promote rail freight. Promoting alternative forms of freight transport such as rail may reduce pollutant run off from vehicles and therefore may have a marginal positive effect overall on water quality. It is predicted that this policy will have a positive effect.

While policy FM9 and FM10 also seek to promote other forms of freight, the use of the Manchester Ship Canal and development of Port Warrington could (depending of implementation) negatively impact on water quality.

Policies FM1 – FM7 and FM9 - FM16 relate to more detailed matters of road freight. These policies are predicted to have neutral effects overall.

Overall, mixed effects are predicted. On one hand, better management of road freight ought to reduce diffuse pollution from surface water run-off. However, an increased usage of water-based freight could potentially lead to disturbances on Warrington's waterways. On balance, an **uncertain minor negative** effect is predicted. Ensuring that freight movements on waterways are made in a sustainable manner ought to be promoted as a key principle to ensure that this modal change does not have negative effects.

Cumulative effects of the Plan

Taking these policy themes and combining overall scores allows for the cumulative effects of the Plan to be established. These effects are represented visually in the table below, with a summary of effects provided also.

Policy Groups	ATP	STCP	RS	PTP	CFP	NMP	AMP	FMP
<i>Significance of effects</i>	?	0	0	?	?	0	0	-?

The overall effect of the Plan with regards to SEA Objective 8 is **mixed**. Broadly speaking, the Plan is likely to have **neutral effects** upon water quality. This is because the majority of policies would not generate a direct link with water quality. Some policies could potentially lead to a reduction in pollutants in surface water run-off by reducing car trips and promoting alternative modes of travel. However, the effects are indirect and uncertain, so unlikely to be significant. However, in combination, these could be **minor positive effects**.

Minor negative effects are also possible in relation to policies that support an increase in water based freight movements.

7.10 Natural Resources Objective 9: Protect, manage and improve air quality.

Active Travel	AT1	AT2	AT3	AT4	AT5	AT6	AT7	AT8	AT9
<i>Effects</i>	+	+	0	0	+	+	+	0	0

Whilst the majority of Warrington has good air quality, there are areas close to major roads where nitrogen dioxide levels are high and exceed national standards. Two AQMAs are designated within Warrington. One is related to the motorway networks; and one is associated with the town centre ring road and link roads. There is a need to improve air quality in these areas in particular.

The Warrington Air Quality Action Plan sets out how the council will tackle air quality issues within its control. This includes a series of actions with those relevant to the LTP including working with Highways England to improve air quality along the local motorway, sustainable transport strategies covering walking, cycling and other less emitting forms of transport and improvements to road and rail infrastructures.

Policies AT1, AT2, AT5-AT7 seek to encourage active travel and the provision of associated infrastructure. Increasing the accessibility of active travel is likely to encourage modal shift and can potentially reduce private vehicle use on the network. This would contribute a positive effect in terms of air quality.

Policies AT3, AT4 and AT8 relate to how active travel infrastructure is built, monitoring and the needs of equestrians. AT9 is a procedural commitment to review rights of way improvement. In light of this neutral effects are predicted with regard to air quality for these policies.

Overall, the active travel policies contribute a **minor positive effect** towards the improvement of air quality, the effect is unlikely to be significant.

Smarter Travel Choices	STC 1	STC 2	STC 3	STC 4	STC 5	STC 6	STC 7	STC 8	STC 9	STC 10	STC 11
<i>Effects</i>	+	+	+	0	+	0	+	+	0	+	0

Policy STC1-STC3, STC5, STC7, STC8 and STC10 seek to encourage active travel and encourage the provision of associated infrastructure including a city centre car club and bike sharing scheme. Increasing the accessibility of active travel is likely to encourage modal shift and can potentially reduce private vehicle use on the network resulting in a potential positive effect on air quality.

Policies STC4, STC6, STC9 and STC11 relate to funding for training programmes for active travel. These measures are not directly linked to a reduction in private vehicles on the road network. Therefore, the policies will result in a neutral effect.

Overall, the policies contribute a **minor positive effect** towards air quality improvement.

Safer Travel	RS 1	RS 2	RS 3	RS 4	RS 5	RS 6	RS 7	RS 8	RS 9	RS 10	RS 11	RS 12	RS 13	RS 14	RS 15	RS 16	RS 17	RS 18
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0

The safer travel policies focus on ways to make transport around the city physically safer. This will help to improve the experience of people that use the network, and could potentially encourage a greater take-up of cycling (should safety be a significant barrier at present). However, these effects are uncertain and indirect. Consequently, Policies RS1-RS15 and RS17 and RS18 are predicted to have neutral effects.

Policy RS16 seeks to ensure that highway traffic uses appropriate routes within the borough to minimise the impact of traffic on sensitive areas. This has the potential to improve traffic flows and reduce traffic volumes within Air Quality Areas, which is a positive effect.

Overall, a **minor positive effect** is predicted, reflecting the benefits of RS16 in particular.

Passenger Transport	PT 1	PT 2	PT 3	PT 4	PT 5	PT 6	PT 7	PT 8	PT 9	PT 10	PT 11	PT 12	PT 13	PT 14	PT 15	PT 16	PT 17	PT 18	PT 19	
<i>Effects</i>	+	+	+	+	+?	+?	+?	+	+	+	+	+	+	+	+	+	+	+?	+?	+

Policy PT1 – PT4 and PT8 – PT16 aim to increase public transport use and decrease individual car usage. Increasing the accessibility of public transport is likely to encourage modal shift and can potentially reduce private vehicle use on the network resulting in a potential positive effect on air quality (due to reduced congestion). However, to ensure that an increase in buses does not contribute towards worsening air quality, there should be a focus on the use of low emissions vehicles.

Policy PT5, PT6 and PT7 relate to improving bus information, bus stops and upgrading public transport infrastructure. These policies do not directly increase accessibility of public transport, but could encourage greater use and more efficient services.

Policies PT17 and PT18 are positive, but are partly reliant on the inclusion of stations within more strategic rail networks (HS2 and Northern Powerhouse). Therefore, there is an element of uncertainty.

Overall the passenger transport policies are predicted to contribute a **positive effect** with regards to air quality, particularly in the town centre areas.

Cleaner Fuel	CF1	CF2	CF3	CF4
<i>Effects</i>	++?	++?	++?	++?

Policies CF1 – CF4 seek to increase the number of low emission vehicles and the use of cleaner fuels. These measures will directly help to improve air quality problems, particularly within Warrington’s two AQMAs and will reduce transport related air pollutants.

This could generate **significant positive effects** in the longer term, but the policy will need to be supported by physical improvements to infrastructure (charging points etc), which are not within the remit of the current version of the Plan. There is therefore uncertainty about the significance of these plan policies alone.

Network Management	NM1	NM2	NM3	NM4	NM5	NM6	NM7	NM8	NM9	NM 10	NM 11	NM 12	NM 13
<i>Effects</i>	0	0	+	+	0	+	+	0	0	+	0	+	?

Policies NM1 and NM2 relate to the Network Management Duty, which would need to be met anyway. Therefore, additional effects are considered unlikely as a result of these policies.

Increasing parking could possibly encourage more car-based travel, but this is likely to be offset by the strong focus on other modes of transport throughout the Plan. Furthermore, NM12 could help to discourage car travel to workplaces, NM6, NM7 and NM10 seek to manage parking to encourage alternative modes of travel. These policies together should all help to reduce the overall emissions from car travel.

Policy NM3 seeks to encourage traffic management measures and reduce the impact of vehicle emissions on health. This will have a minor positive effect in relation to air quality. Likewise, the implementation of technological solutions to help improve traffic management should help to reduce congestion, which is a contributor to poor air quality, especially in urban areas.

Policy NM13 seek to deliver infrastructure to support the aspirations for growth for Warrington. Such growth will result in additional vehicles and associated emissions within Warrington.

This could have a negative impact on air quality, but modelling for the Local Plan suggests that overall air quality should improve due to a switch towards cleaner fuels and other measures. In any case, the LTP4

itself is not driving the growth, and so the effects are not apportioned as such. Furthermore, without supporting infrastructure, the effects on air quality could potentially be significantly negative, as there would be increased congestion. NM13 also relates to longer term requirements for infrastructure, so there is an element of uncertainty.

The remaining policies are more procedural in nature (for example, committing to a review of parking), and so neutral effects are predicted.

Overall the network management policies are predicted to have a **minor positive effect** on air quality. Policies that support car parking could arguably encourage continued car based travel in the town centre. However, several policies seek to reduce car based travel through a management of car parking, which outweighs any negatives.

Asset Management	AM1	AM2	AM3	AM4	AM5	AM6
<i>Effects</i>	0	0	0	0	+	0

Policies AM1- AM4 and AM6 are likely to have neutral effect on air quality as they relate to asset management. The resulting actions (such as improvements to potholes etc) would not necessarily improve air quality.

Policy AM5 seeks to reduce the amount of greenhouse gases produced during the maintenance of transport assets which will have a positive impact on Air Quality.

Overall the asset management policies will have a **minor positive effect** upon air quality.

Freight Management	FM 1	FM 2	FM 3	FM 4	FM 5	FM 6	FM 7	FM 8	FM 9	FM 10	FM 11	FM 12	FM 13	FM 14	FM 15	FM 16
<i>Effects</i>	+	+	+	+	+	0	0	+	+	+	0	0	0	0	0	0

Several policies seek to improve the management of freight traffic. This has the potential to improve air quality within the town centre.

Policies FM8, FM9 and FM10 seek to encourage rail and other types of freight movements, which would reduce the amount of road based trips. This should therefore help to protect and possibly improve air quality in sensitive locations such as the town centre and strategic transport routes.

Other policies FM6, FM7 and FM11 – FM16 relate more to the management of freight including local lorry parking facilities. These policies are less likely to affect air quality.

Overall, the policies contribute a **positive effect** towards the management of air quality.

Cumulative effects of the Plan

Taking these policy themes and combining overall scores allows for the cumulative effects of the Plan to be established. These effects are represented visually in the table below, with a summary of effects provided also.

Policy groups	ATP	STCP	RS	PTP	CFP	NMP	AMP	FMP
<i>Significance of effects</i>	+	+	+	+	++ [?]	+	+	+

The overall effect of the Plan with regards to air quality is a **significant positive effect**. This relates to; the strong drive to achieve modal shift to active modes of travel, support and encouragement for the use of public transport, the management of road networks to reduce congestion, and the support for cleaner / low emissions transport.

7.11 Historic Environment: Objective 10: Preserve and where possible enhance the significance of historic assets and their settings.

Active Travel	AT1	AT2	AT3	AT4	AT5	AT6	AT7	AT8	AT9
<i>Effects</i>	0	0	0	0	0	0	0	0	0

Policies AT1-A9 are likely to have a neutral effect on the historic environment as they are focussed on active travel. The resulting actions would not have any significant adverse or positive effects upon the historic environment directly.

While active travel infrastructure could impact on the historic environment this is dependent on its implementation. Similarly, active travel could improve access to heritage and archaeological assets however this is also dependent on implementation.

On balance, **neutral effects** are predicted overall.

Smarter Travel Choices	STC 1	STC 2	STC 3	STC 4	STC 5	STC 6	STC 7	STC 8	STC 9	STC 10	STC 11
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0

Policies STC1- STC11 are likely to have a neutral effect on heritage as smarter travel choices are not directly affect the condition or setting of heritage assets or the build environment.

On balance, **neutral effects** are predicted overall.

Safer Travel	RS 1	RS 2	RS 3	RS 4	RS 5	RS 6	RS 7	RS 8	RS 9	RS 10	RS 11	RS 12	RS 13	RS 14	RS 15	RS 16	RS 17	RS 18
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Policies RS1- RS18 are likely to have a neutral effect on heritage as safer travel has no direct relationship with the condition, setting or experience of the historic environment.

Policies RS7, RS11, RS16 and RS18 relate to camera enforcement, highway improvements with regard to speed limits and transport measures to reduce opportunities for terrorism, crime and anti-social behaviour. Such installations and measures could negatively affect archaeology and the setting of built heritage however this is largely related on how such schemes are implemented (and routine mitigation ought to be possible). Therefore, overall these policies are also likely to have a **neutral effect**.

Passenger Transport	PT 1	PT 2	PT 3	PT 4	PT 5	PT 6	PT 7	PT 8	PT 9	PT 10	PT 11	PT 12	PT 13	PT 14	PT 15	PT 16	PT 17	PT 18	PT 19
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

The passenger transport policies will have a neutral effect on the historic environment as an improvement public transport does not relate directly to the condition or setting of heritage. Though improved public transport could allow more people to experience heritage assets in the town centre, the effects are not significant. Therefore, overall these policies are also likely to have a **neutral effect**.

Cleaner Fuel	CF1	CF2	CF3	CF4
<i>Effects</i>	0	0	0	0

There is a weak link between the condition of heritage assets and air pollution (which can damage assets visually). Therefore, an improvement in air quality could have indirect benefits in this respect. However, there is considerable uncertainty about these effects, and the magnitude of impacts would be small. Therefore, **neutral effects** are predicted overall.

Network Management	NM1	NM2	NM3	NM4	NM5	NM6	NM7	NM8	NM9	NM 10	NM 11	NM 12	NM 13
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	?

Policies NM1 – NM13 are likely to have a neutral effect on the historic environment, as management of the network ought not to lead to any changes in the condition or setting of heritage assets or the built environment. Overall, **neutral effects** are predicted.

Major infrastructure improvements that are identified such as the Western Link and the Garden Suburb Strategic Link could potentially have impacts upon historic assets. However, these are not attributed wholly to the LTP4. At this stage, uncertain effects are predicted for NM13.

Asset Management	AM1	AM2	AM3	AM4	AM5	AM6
<i>Effects</i>	0	0	0	0	0	0

The asset management policies do not directly relate to heritage as they focus on the management of transportation property and infrastructure (and ways to fund further development in transportation). Therefore **neutral effects** are predicted.

Freight Management	FM 1	FM 2	FM 3	FM 4	FM 5	FM 6	FM 7	FM 8	FM 9	FM 10	FM 11	FM 12	FM 13	FM 14	FM 15	FM 16
<i>Effects</i>	0	0	0	0	0	0	0	0	?	?	0	0	0	0	0	0

The freight management policies focus on managing freight transport for businesses in Warrington. In the main, this relates to operational issues and would not have effects on the historic environment. However, policies that seek to encourage increased rail and water freight could potentially have effects upon heritage assets such as the Warrington Transporter Bridge. These effects could be potentially positive though, if there is potential to improve the condition of the bridge in association with development of freight facilities.

On balance, **neutral / uncertain effects** are predicted with regards to heritage assets.

Cumulative effects of the Plan

Taking these policy themes and combining overall scores allows for the cumulative effects of the Plan to be established. These effects are represented visually in the table below, with a summary of effects provided.

Policy groups	ATP	STCP	RS	PTP	CFP	NMP	AMP	FMP
<i>Significance of effects</i>	0	0	0	0	0	0	0	0

None of the Plan policies relate strongly and directly to protection and enhancement of the historic environment. Whilst some measures could lead to slight improvements in the environment (cleaner fuels for example), the magnitude of impacts is very low. Therefore, **neutral effects** are predicted overall. Certain infrastructure schemes may have negative effect, but it is presumed these would be dealt with through a detailed assessment alongside planning (and mitigated accordingly).

7.12 Historic Environment Objective 11: Ensure high quality and sustainable design for transport infrastructure, spaces and the public realm that is appropriate to the locality.

Active Travel	AT1	AT2	AT3	AT4	AT5	AT6	AT7	AT8	AT8
<i>Effects</i>	0	+	0	0	0	0	0	0	0

The majority of these policies would have neutral effects, as they seek to change behaviors relating to travel. Whilst this may involve some positive changes to the built environment and improvement to the public realm (such as high quality infrastructure for Policy AT2) the overall effects are likely to be **neutral**.

Smarter Travel Choices	STC 1	STC 2	STC 3	STC 4	STC 5	STC 6	STC 7	STC 8	STC 9	STC 10	STC 11
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0

The smarter travel choice policies are mostly focused on engagement with communities to encourage alternative, safer and more inclusive modes of travel. There wouldn't be any direct effects upon the built environment as a result of such measures, and so **neutral effects** are predicted.

Safer Travel	RS 1	RS 2	RS 3	RS 4	RS 5	RS 6	RS 7	RS 8	RS 9	RS 10	RS 11	RS 12	RS 13	RS 14	RS 15	RS 16	RS 17	RS 18
<i>Effects</i>	0	0	0	0	0	0	-?	0	0	0	-?	0	0	0	0	-?	0	-?

The majority of policies are predicted to have neutral effects as they focus on safety behaviours rather than changes to the physical environment.

Policy RS7, RS11, RS16 and RS18 relate to camera enforcement, highway improvements with regard to speed limits and transport measures to reduce opportunities for terrorism, crime and anti-social behaviour. Such installations and measures could negatively affect townscape and public realm (for example, bollards, road alignments, cameras etc). However this is largely related to how such schemes are implemented, and with sensitive design, negative effects ought to be possible to avoid.

Overall, an **uncertain negative effect** is predicted to reflect these potential issues. However, the effects would not be anticipated to be significant.

Passenger Transport	PT 1	PT 2	PT 3	PT 4	PT 5	PT 6	PT 7	PT 8	PT 9	PT 10	PT 11	PT 12	PT 13	PT 14	PT 15	PT 16	PT 17	PT 18	PT 19
<i>Effects</i>	0	0	0	0	0	+	0	0	0	0	?	0	0	0	0	0	0	0	0

Only policies PT6 and PT11 have some relevance to the quality of the built environment and the public realm. The remaining policies are focused on improving passenger transport services and the use of such services, which is unlikely to have an effect on the environment.

Policy PT6 could potentially have positive effects in terms of a sense of place, by seeking to ensure that public transport stops are safe and attractive places to wait. The effects are minor and uncertain though.

A mass transit system could potentially involve segregated lanes, redesigning junctions, new stations/stops and other infrastructure changes. These could all have a potential effect on the character of the built environment, either positively or negatively (in fact, public realm improvements could be designed into infrastructure). Whilst policy PT11 commits to exploring a mass transit option, the effects would need to be determined through detailed options appraisal. At this stage, an **uncertain effect** is predicted.

Cleaner Fuel	CF1	CF2	CF3	CF4
<i>Effects</i>	0	0	0	0

These policies are predicted to have a **neutral effect** on the public realm overall. Whilst cleaner vehicles could help to create more attractive public spaces (which is positive for the townscape), the effects would be very small in magnitude when considered in isolation.

Network Management	NM1	NM2	NM3	NM4	NM5	NM6	NM7	NM8	NM9	NM10	NM11	NM12	NM13
<i>Effects</i>	0	0	0	0	0	?	0	0	0	0	0	0	0

The majority of policies are likely to have a **neutral effect** as they focus on the management of the road networks and their operation. However, policies that look to review parking provision and other built environment elements could possibly lead to changes in the appearance of the townscape. New car parks (Policy NM7) could lead to changes in the appearance of the built environment, but this is unlikely to be significant given the locations in question are already highly influenced by development and vehicles.

Asset Management	AM1	AM2	AM3	AM4	AM5	AM6
<i>Effects</i>	0	0	0	0	0	0

These policies focus on the management of transport property and infrastructure, and ways to fund further development in transport. As such, there is limited scope for effects upon the public realm, townscape and design. **Neutral effects** are predicted.

Freight Management	FM1	FM2	FM3	FM4	FM5	FM6	FM7	FM8	FM9	FM10	FM11	FM12	FM13	FM14	FM15	FM16
<i>Effects</i>	+?	+?	+?	0	0	0	0	0	0	0	0	0	0	0	+?	+?

The majority of freight management policies are likely to have neutral effects, as they focus on modal shift, the efficiency of freight and particular management arrangements. However, policies FM1-FM3 could have minor positive effects on town centre environments by re-routing traffic and seeking to improve air quality. This ought to help preserve a sense of place and protect the experience of the public realm.

Policies FM15 and FM16 relate specifically to the management of on-road freight parking, which can negatively affect the townscape. These policies could therefore have minor positive effects too.

Overall, a **minor positive effect** is predicted.

Cumulative effects of the Plan

Taking these policy themes and combining overall scores allows for the cumulative effects of the Plan to be established. These effects are represented visually in the table below, with a summary of effects provided.

Policy groups	ATP	STCP	RS	PTP	CFP	NMP	AMP	FMP
<i>Significance of effects</i>	0	0	0	-?	0	0	0	+

The overall effect of the Plan with regards to high quality design, townscape and the public realm is a **neutral effect**. The majority of policies do not directly relate to the character of the townscape and public realm in Warrington. Whilst some policies could encourage positive effects these would be minor, and on the other hand, physical infrastructure measures could potentially have impacts on townscape.

7.13 Biodiversity (SEA Objective 12):

Active Travel	AT1	AT2	AT3	AT4	AT5	AT6	AT7	AT8	AT9
<i>Effects</i>	+	+	+	0	+	+	+	0	0

Policies AT1-AT3 and AT5 - AT7 encourage active travel which can improve air quality; potentially having a minor positive effect on biodiversity in the longer term.

Policies AT4 and AT8 relate to monitoring active travel and the needs of equestrians and will therefore have neutral effects.

Overall, **minor positive effects** are predicted, as a reduction in car based travel can help to improve air quality, but not significantly.

Smarter Travel Choices	STC 1	STC 2	STC 3	STC 4	STC 5	STC 6	STC 7	STC 8	STC 9	STC 10	STC 11
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0

These policies would not lead to physical changes in the environment and so **neutral effects** are predicted.

Safer Travel	RS 1	RS 2	RS 3	RS 4	RS 5	RS 6	RS 7	RS 8	RS 9	RS 10	RS 11	RS 12	RS 13	RS 14	RS 15	RS 16	RS 17	RS 18
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0

The majority of policies are predicted to have neutral effects upon biodiversity and geodiversity, as they are focused upon the safety of people. The measures that are likely to be used would not be likely to lead to any direct effects upon wildlife species or habitats.

RS16 discusses highway traffic using appropriate routes for transport. The policy seeks to minimise the impact of traffic on the environment in 'sensitive areas'. This could potentially have a positive effect by reducing speeds and the potential for collisions with wildlife for example. The effects are uncertain though.

Overall, a **neutral effect** is predicted given that the majority of policies will have no effect upon biodiversity, and those that may involve uncertainty.

Passenger Transport	PT 1	PT 2	PT 3	PT 4	PT 5	PT 6	PT 7	PT 8	PT 9	PT 10	PT 11	PT 12	PT 13	PT 14	PT 15	PT 16	PT 17	PT 18	PT 19
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	?	0	0	0	0	0	0	0	0

The majority of policies will have neutral effects upon biodiversity and geodiversity as they focus on the improvement of passenger transport services rather than physical changes to the built environment.

The indirect effects of these measures could be an improvement in air quality, but this would be unlikely to generate notable effects in isolation. PT11 supports the exploration of options for mass transit network. Depending on the type, routes and other factors there is potential for effects to occur. However, there is a lack of detail at this stage to determine what these would be accurately, so uncertain effects are predicted.

Overall, the effects are broadly **neutral**, but the environmental effects of specific schemes should be tested to support the delivery of the LPT4 Action Plan.

Cleaner Fuel	CF1	CF2	CF3	CF4
<i>Effects</i>	+	+	+	+

The cleaner fuel policies are all likely to have some positive effect as they focus on reducing carbon emissions in motorised transport. This should have a positive effect due upon biodiversity by contributing to better air quality. However, the contribution made is unlikely to be significant so minor positive effects are predicted overall.

Network Management	NM1	NM2	NM3	NM4	NM5	NM6	NM7	NM8	NM9	NM10	NM11	NM12	NM13
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	?

The Network Management policies will likely have a **neutral effect** as they do not directly relate to biodiversity and the enhancement of habitats. They focus on how to improve transport around Warrington with infrastructure, management and technological advances.

The support for major infrastructure improvements could lead to negative effects upon biodiversity assets, and these will need to be addressed through scheme specific assessments. With regards to further infrastructure, there will be a need for different options for growth to be tested as part of a Local Plan review and LTP update.

Asset Management	AM1	AM2	AM3	AM4	AM5	AM6
<i>Effects</i>	0	0	0	0	0	0

The Asset management policies will likely have **neutral effects** as they focus on investing and maintaining transport assets with limited consideration of biodiversity implications. A reduction in greenhouse gases (AM5) could contribute towards improved air quality, but these effects would be limited.

Freight Management	FM1	FM2	FM3	FM4	FM5	FM6	FM7	FM8	FM9	FM10	FM11	FM12	FM13	FM14	FM15	FM16
<i>Effects</i>	0	+	+	+	0	0	0	0	0	0	0	0	0	0	0	0

Policies FM 2-4 could have indirect positive effects in combination with one another (and other plan policies) with regards to an improvement in air quality. This could have some benefit to certain habitats and species that are sensitive to air quality.

The remaining policies are predicted to have neutral effects as they are more concerned with detailed arrangements for freight management.

Overall, an **uncertain minor positive** effect is predicted reflecting the benefits that could arise in relation to air quality improvements.

Cumulative effects of the Plan

Taking these policy themes and combining overall scores allows for the cumulative effects of the Plan to be established. These effects are represented visually in the table below, with a summary of effects provided.

Policy groups	ATP	STCP	RS	PTP	CFP	NMP	AMP	FMP
<i>Significance of effects</i>	+	0	0	0	+	0	0	+

Broadly speaking, the Plan is predicted to have mostly **neutral effects** with regards to biodiversity. This is because many of the policies are unlikely to involve physical changes to the built environment that would affect wildlife species and habitats. However, there are multiple policies in the plan that would contribute to better air quality that could have **minor positive effects** for specific species and habitats (for example mosses). There are also potential effects that would arise in relation to a mass transit system, but these are uncertain at this stage.

7.14 Climate Change, Flooding and Resilience Objective 13

Active Travel	AT1	AT2	AT3	AT4	AT5	AT6	AT7	AT8	AT9
<i>Effects</i>	0 [?]								

These policies focus on encouraging people to use active modes of travel, which would not directly affect the risk of flooding or resilience to climate change. Therefore neutral effects are predicted.

However, active travel infrastructure could (if linked to green infrastructure), help to mitigate flood risk and provide shade / address other potential issues. These links should be made with the emerging Local Plan for Warrington to ensure that an increase in active travel does not increase people's exposure to hazards caused by climate change (e.g. hot, dry weather and flooding).

Overall **neutral effects** are predicted, but uncertainty is recorded to account for the potential to address resilience matters.

Smarter Travel Choices	STC 1	STC 2	STC 3	STC 4	STC 5	STC 6	STC 7	STC 8	STC 9	STC 10	STC 11
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0

Overall these policies are predicted to have **neutral effects**. There are no direct links to flooding and climate change resilience, and effects would be uncertain and minor.

Safer Travel	RS 1	RS 2	RS 3	RS 4	RS 5	RS 6	RS 7	RS 8	RS 9	RS 10	RS 11	RS 12	RS 13	RS 14	RS 15	RS 16	RS 17	RS 18
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

These policies focus on improving the safety of transport through infrastructure improvements, maintenance works, technological advances, monitoring and awareness raising. There is no direct relation to climate change or flooding resilience. This is why **neutral effects** are likely to occur.

Passenger Transport	PT 1	PT 2	PT 3	PT 4	PT 5	PT 6	PT 7	PT 8	PT 9	PT 10	PT 11	PT 12	PT 13	PT 14	PT 15	PT 16	PT 17
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

The passenger transport policies focus on increasing the frequency and quality of public transport services in Warrington; enhancing transport options for people that live and work in Warrington. These are unlikely to have effects with regards to flooding or wider adaptation to climate change, so neutral effects are predicted.

Cleaner Fuel	CF1	CF2	CF3	CF4
<i>Effects</i>	0	0	0	0

These policies do not relate to flooding or climate change resilience, so **neutral effects** are predicted.

Network Management	NM1	NM2	NM3	NM4	NM5	NM6	NM7	NM8	NM9	NM 10	NM 11	NM 12	NM 13
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	0

The Network Management policies will have a neutral effect as they do not directly relate to climate change and the risk of flooding. They focus on how to improve transport around Warrington with infrastructure, management and technological advances.

Asset Management	AM1	AM2	AM3	AM4	AM5	AM6
<i>Effects</i>	?	?	?	?	0	?

With the exception of AM5, the policies are predicted to have uncertain effects. Each relates to the maintenance of highways and actions are prioritised in terms of risks to road users. The measures taken are not seeking to address flooding or climate change resilience explicitly. However, it is possible that upgrades and maintenance could help to reduce the risks of flooding, and resilience to changing climate (for example, roads that are resistant to hotter summers). To provide a greater degree of certainty, it is recommended that an additional policy is included that seeks to ensure that assets are managed so that flood risk is managed (for example, through clearing of drains, the use of permeable materials as appropriate), and infrastructure is resilient to potential changes in climate change.

AM5 relates to climate change mitigation (carbon emissions) rather than resilience and so neutral effects are predicted.

Overall, **uncertain effects** are predicted.

Freight Management	FM 1	FM 2	FM 3	FM 4	FM 5	FM 6	FM 7	FM 8	FM 9	FM 10	FM 11	FM 12	FM 13	FM 14	FM 15	FM 16
<i>Effects</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Management of freight is not likely to have notable effects with regards to flooding or adaptation to climate change. Therefore, **neutral effects** are predicted.

Cumulative effects of the Plan

Taking these policy themes and combining overall scores allows for the cumulative effects of the Plan to be established. These effects are represented visually in the table below, with a summary of effects provided also.

Policy groups	ATP	STCP	RS	PTP	CFP	NMP	AMP	FMP
<i>Significance of effects</i>	0?	0	0	0	0	0	?	0

The overall effect of the Plan with regards to flooding and resilience to climate change is **neutral**. The policies are not directly related to flood risk or adaptation to climate change.

8. Mitigation and enhancement

8.1 Introduction

The SEA of the draft Warrington Local Transport Plan (4) has been an iterative process, in which proposals for mitigation and enhancement have been considered at different stages.

Draft versions of each plan policy have been appraised through the SA process, and recommendations have been made for improvements.

Table 8.1 below sets out how the recommendations that have been made and how the SA findings would be affected by subsequent changes to policies. The Council will consider the recommendations of the SA before finalising the Plan following Consultation.

Table 8.1 *Mitigation and enhancement measures*

SA Recommendations	Implications for the SA findings
The Active Travel policies could be strengthened by identifying what types of active travel infrastructure will be encouraged.	Minor improvements with regards to accessibility and health and wellbeing.
The safer travel policies could perhaps be enhanced by referring to a need for car parks to be designed so that they are safe, and perhaps achieve accreditation to a recognised standard such as 'Park Mark'.	Amendments would be beneficial with regards to health and wellbeing / community safety. However, significant effects would not occur.
It is recommended that the options exploration process for a mass transit system involves an assessment of environmental impacts to help guide a preferred approach.	There are different options for how a mass transit scheme could be delivered. It is when such detail is provided that an informal SEA can add value with regards to the assessment of options.
Ensuring that freight movements on waterways are made in a sustainable manner ought to be promoted as a key principle to ensure that this modal change does not have negative effects.	There would be greater certainty that potential negative effects upon water quality would be avoided and / or mitigated.
The passenger transport policies seek to support an increase in bus uses. To ensure that an increase in buses does not contribute towards worsening air quality, there should be a focus on the use of low emissions vehicles.	This may already be covered through the cleaner fuel policies, but an explicit commitment to the reduction of emissions from all forms of transport (<i>including public transport which can contribute to poor air quality</i>) would help to achieve more positive effects with regards to air quality. The change would not be significant though.
To provide a greater degree of certainty, it is recommended that an additional asset management policy is included that seeks to ensure that assets are managed so that flood risk is managed (for example, through clearing of drains, the use of permeable materials as appropriate), and infrastructure is resilient to potential changes in climate change.	Would achieve positive effects with regards to climate change resilience.

9. Monitoring

9.1 Introduction

At this stage there is a requirement to outline the measures envisaged to monitor the predicted effects of the Plan. In particular, there is a need to focus on the significant effects that are identified. It is important to track predicted effects to ensure that positive effects are actually realised and to identify any unforeseen negative effects that may occur.

Table 9.1 below sets out monitoring measures under each SA topic which are intended to be used to monitor any significant effects and to track the baseline position more generally.

At this stage the monitoring measures have not been finalised, as there is a need to confirm the feasibility of collecting information for the proposed measures. Wherever possible, measures have been drawn from the Local Transport Plan monitoring framework to reduce duplication.

The monitoring measures will be finalised once the Plan is adopted, and will be set out in an SEA Statement in accordance with the SEA Regulations.

Table 9.1: Monitoring the effects of the Plan

Summary of effects	Proposed monitoring measures
<p>Economy and Regeneration: Modern Economy</p> <p>Significant positive effects are predicted as the Plan will help to improve accessibility for a range of communities, continue to support regeneration within Warrington and lead to more sustainable modes of transport that are required for modern economic growth.</p>	<ul style="list-style-type: none"> - Proportion of freight transport by road, rail and water. - Levels of unemployment. - Employment growth by sector.
<p>Economy and Regeneration: Equality and inclusion</p> <p>Overall a significant positive effect is predicted. This is largely due to the significant effects generated by the passenger transport policies which could help to improve access for disadvantaged groups. Positive effects are also generated from a range of other policies</p>	<ul style="list-style-type: none"> - Walking and cycling routes accessible to deprived communities. - Focus group meetings with community groups with protected characteristics to determine what aspects of active travel could be improved from their perspective.
<p>Health and Wellbeing: Community Safety</p> <p>Overall a significant positive effect is predicted. This is largely due to the significant effects generated by the active travel policies and road safety policies. The Plan is likely to encourage greater usage of services, which can contribute to improved perceptions of safety with regards to crime. There are also direct measures to improve road safety.</p>	<ul style="list-style-type: none"> - Transport related crime and anti-social behaviour reported. - Number of road traffic accidents.

Summary of effects	Proposed monitoring measures
<p>Health and Wellbeing: Recreation and healthy lifestyles</p> <p>Minor positive effects are predicted as the Plan encourages and facilitates active travel and improved accessibility in general. The effects are not predicted to be significant as there is no explicit goal to improve access to green infrastructure.</p> <p>No negative effects are identified as measures to improve the range of transport choices on offer throughout the Borough improves accessibility, which can only be a good thing in terms of accessing open space.</p>	<p>No significant effects are likely. It may be beneficial to track trends though, such as:</p> <ul style="list-style-type: none"> - Length of improved walking and cycling routes.
<p>Health and Wellbeing: Access to health care</p> <p>The overall effect of the Plan is a minor positive effect. Though there are no specific measures relating to access to health facilities, the plan will lead to a general improvement in accessibility, which would likely include better access to health facilities.</p> <p>Improving active travel options within the borough should also contribute to improving people's health and lifestyle if more places are accessible through walking and cycling.</p>	<p>No significant effects are likely. It may be beneficial to track trends though, such as:</p> <ul style="list-style-type: none"> - Public transport access to health facilities. - Proximity of residential development to health facilities.
<p>Accessibility</p> <p>Significant positive effects are predicted with regards to accessibility, as the Plan will help to better manage transport networks, encourage and enable active and sustainable modes of travel, and improve access for groups with barriers to travel.</p>	<ul style="list-style-type: none"> - Travel to work trends - Public transport usage. - Frequency and reliability of public transport - Changes in peak level congestion levels
<p>Housing</p> <p>To support sustainable housing growth, there is a need to maintain and enhance the infrastructure that will enable people to move around Warrington effectively and sustainably. The Plan should have positive effects in this respect as it seeks to promote links between residential areas, services and jobs, reduce pressure on the transport networks, and encourage active and sustainable modes of travel.</p> <p>Without such measures, it may be difficult to accommodate increased housing sustainably. Consequently, significant positive effects are predicted.</p>	<p>Distance of new residential development from a range of facilities and public transport services.</p> <ul style="list-style-type: none"> - Schools - GP - Bus / train stop - Community facilities - Walking and cycling networks.

Summary of effects	Proposed monitoring measures
<p>Natural Resources: Water quality</p> <p>Broadly speaking, the effects of the Plan are predicted to be neutral as they do not relate directly to water quality. Whilst some policies could potentially lead to a reduction in pollutants in surface water run-off, the effects are indirect and uncertain, so unlikely to be significant.</p> <p>Minor negative effects are also possible in relation to policies that support an increase in water based freight movements.</p>	<p>No significant effects are likely. It may be beneficial to track trends though, such as;</p> <ul style="list-style-type: none"> - Water quality along relevant sections of the Manchester Ship Canal and River Mersey.
<p>Natural Resources: Air quality</p> <p>Overall the Plan is likely to generate significant positive effects upon air quality by;</p> <ul style="list-style-type: none"> - Increasing the proportion of trips made by sustainable and active modes of travel; - Managing congestion on road networks; - Supporting technological improvements such as low emissions transport. - Reducing road freight. 	<ul style="list-style-type: none"> - Nitrogen dioxide levels at key monitoring locations. - Particulate matter concentrations at key monitoring locations. - Number of electric charging points installed.
<p>Historic environment: Heritage assets</p> <p>On balance neutral effects upon heritage assets are predicted.</p>	<p>No monitoring measures have been identified.</p>
<p>Historic environment: Townscape</p> <p>On balance, neutral effects are predicted with regards townscape, public realm and high quality design.</p>	<p>No monitoring measures have been identified.</p>
<p>Biodiversity</p> <p>Broadly speaking, the Plan is predicted to have mostly neutral effects with regards to biodiversity.</p> <p>However, there are multiple policies in the plan that would contribute to better air quality that could have minor positive effects for specific species and habitats (for example mosses).</p>	<p>No significant effects are likely. It may be beneficial to encourage and monitor the extent to which biodiversity considerations are taken into account in the delivery of new infrastructure though. For example:</p> <ul style="list-style-type: none"> - The use of permeable surfaces - The use of SUDs - Number of trees planted alongside new infrastructure
<p>Climate Change: Flooding and resilience</p> <p>On balance, the plan is predicted to have neutral effects with regards to flooding and resilience.</p>	<p>No significant effects are likely. It may be beneficial to track trends though. For example, by monitoring disruption to traffic as a result of flooding (identifying locations and the magnitude of impacts).</p>

Appendix A: Scoping Consultation Representations

	Comments	Response
Natural England	<p>Natural England have specified that water quality and air quality are not just human health issues as they also affect wildlife and plants. Issues like air and water quality impacting on designated site features and severing connectivity between designated sites and other ecological assets should be considered.</p> <p>The information detailing Warrington's designated sites (not habitats) is incorrect. The SAC's should read Manchester Mosses SAC and Rixton Clay Pits SAC.</p> <p>There is very little detail provided on the features of the designated sites and which activities resulting from the LTP may cause damage to them.</p> <p>The SA should discuss the implications of HS2 with regards to Warrington LTP.</p> <p>It is important to factor in the use of indicators in the approach to SEA. The use of indicators will monitor the success of the SEA objectives.</p> <p>We recommend that consideration be given to carrying out a Habitats Regulations Assessment (HRA) at an early stage in the development of the Plan so that the assessment influences the evolution of the Plan.</p>	<p>The SA has been amended to acknowledge the effects on air and water quality that could occur.</p> <p>Factual errors corrected.</p> <p>Information added with regards to the features of designated sites</p> <p>Updates provided relating to HS2.</p> <p>Monitoring measures will be identified in the SEA Report.</p> <p>The Council will consider the need for HRA.</p>

<p>Historic England</p>	<p>Historic England have made the following comments :</p> <p>The contextual review needs to be more comprehensive and certain elements clarified.</p> <p>Undesignated heritage assets should be identified.</p> <p>Cheshire historic landscape characterization should be referred to and relevant information drawn out.</p> <p>The definition of built heritage should correlate with the NPPF definition.</p> <p>The SA theme should be changed from Built Heritage to Cultural Heritage so it covers historic and natural historic environments.</p> <p>Additional criteria should be added to objective 11 that refers to the historic and local character.</p> <p>Objective 10 should be amended to <i>Conserve and enhance the historic environment, heritage assets and their settings</i>.</p> <p>Additional objectives suggested covering townscape, local distinctiveness and sense of place.</p> <p>A list of wording amendments has been recommended for page 29.of the SA Scoping Report</p>	<p>The SA will add the NPPF definition of Built Heritage.</p> <p>Information added relating to undesignated assets and the historic landscape characterisation.</p> <p>Definition of built heritage amended.</p> <p>The topic Built Heritage has been renamed as Cultural Heritage.</p> <p>Additional criteria included.</p> <p>Wording for SA Objective 10 has been amended.</p> <p>It is considered that the current objectives (amended) make sufficient provision for considrration of townscape and local sense of place.</p> <p>Amendments made accordingly.</p>
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Appendix B: Appraisal of strategic options

Option 1: <i>Traffic management and Sustainable travel</i>	Option 2 <i>Traffic management, Sustainable travel + Mass Transit</i>	Option 3. <i>Great focus on Sustainable modes of transport only</i>
Biodiversity and Geodiversity		
+	+	- ?
<p>Certain habitats and species are sensitive to changes in air quality, and so measures that reduce air pollution would have positive effects.</p> <p>The improvement of cycling and walking infrastructure will likely have some positive effect on biodiversity due to these modes of transport helping to improve air quality. Likewise, improvements in traffic management may also help to reduce congestion, adding further benefits.</p> <p>Measures that include new pathways and routes that cut through areas of green space could potentially increase disturbance to certain species and habitats, but it ought to be possible to mitigate effects and ensure that multi-functional green infrastructure corridors are secured.</p> <p>Traffic management that reduces speeding and improves safety (such as lighting) could also have benefits in terms of reduced collisions with animals. However, this is an uncertain effect and unlikely to be of significant magnitude.</p> <p>Overall, minor positive effects are predicted for Option 1.</p> <p>For Option 2, there would be additional positive effects in terms of reduced air pollution as a result of a mass transit system. However, a new transit system would require new infrastructure and may involve road widening and new stops / stations. The indicative routes for a mass transit system are not likely to be in close proximity to any notable biodiversity habitats. However, there could be localised loss of green infrastructure, with some minor negative effects. A route through the proposed Garden Suburb could have negative implications though depending on routes and mitigation measures. Consequently, the effects are mixed for Option 2.</p> <p>For option 3, the effects are similar to option 1, but could potentially be less certain, because there would be less focus on traffic management. Whilst there would be greater direction of effort into sustainable travel (which can also help to address air quality issues), the impacts from traffic management are more likely to help reduce air quality issues relating to congestion, and minimise disturbance to species in terms of walking and cycling routes. Therefore, the positive effects are uncertain.</p>		

Built up and Natural Heritage		
Option 1: <i>Traffic management and Sustainable travel</i>	Option 2 <i>Traffic management, Sustainable travel + Mass Transit</i>	Option 3. <i>Great focus on Sustainable modes of transport only</i>
+	+	0
<p>There is no direct relationship between transportation / accessibility and the historic environment. However, a reduction in traffic congestion could potentially help to improve the experience of cultural heritage and the peacefulness of tranquil / rural locations. An improvement in air quality may also help to reduce pollution that can cause degradation to the surface of historic buildings. In this respect, the policy ought to have minor positive effects.</p> <p>The infrastructure and systems put in place to manage traffic will likely be building on existing road systems, and so the implications for townscape are not anticipated to be significant. However, changes could potentially be positive or negative depending upon scheme designs. It is assumed these issues could be dealt with adequately through the planning system though.</p> <p>Overall, a minor positive effect is predicted for Option 1.</p> <p>The mass transit system will likely be serviced predominantly on existing infrastructure, but with more regular services and better management. There could be some infrastructure improvements though, which could potentially change the nature of the built environment. The implications are unclear. However, high quality design could help to improve current stops/stations, and reduce congestion; having a positive effect on the built environment and public realm. Overall the effects are minor positives.</p> <p>Option 3 is likely to have similar effects to Option 1, but it is less certain that there would be a take-up in walking and cycling and so the improvements in air quality may be less pronounced compared to options 1 and 2, which would also address management of the dominant modes of travel. Consequently, neutral effects are predicted.</p>		

Economy and Regeneration		
Option 1: Traffic management and Sustainable travel	Option 2 Traffic management, Sustainable travel + Mass Transit	Option 3. Great focus on Sustainable modes of transport only
+	++	+ [?]
<p>The improvement of road traffic systems would contribute to sustainable economic growth. If networks are not managed then there could be implications for business such as the costs of travel, and strategic sites would be less attractive for investment / development if the surrounding transport infrastructure was not capable of accommodating such growth.</p> <p>With regards to active travel, this too should help to manage the effects on traffic that an increase in population can have. It should also support people from poorer backgrounds that do not rely on private car usage to access jobs and services. An increase in active travel would also help to improve the health of the population, with potential benefits regarding work attendance. Overall, minor positive effects are predicted.</p> <p>In addition to the effects identified for option 1, option 2 would involve a mass public transit system. This would provide better access to key employment areas and educational facilities, which is beneficial for the economy. Furthermore, a mass transit network ought to help reduce traffic, and make the road networks more attractive for businesses. There would be capital costs of implementing a transit scheme, but this would also create jobs for local people in the highways sector. Overall, this option could have a potentially significant effect in terms of economic growth and regeneration.</p> <p>For Option 3 there are positive implications to be felt with regards to an increase in sustainable travel. In the main, this relates to improved health, and an increase in the amount of trips made by non-car modes. However, it is not likely that a major shift towards cycling and walking would be achieved in the short term, because the dominant mode of travel is by car, and then public transport. Warrington has been developed in the context of car-based travel, and so there is also a need to address network management issues and public transport improvements. Consequently, the positive effects of this option are less certain.</p>		

Health and Wellbeing			
Option 1: <i>Traffic management and Sustainable travel</i>	Option 2 <i>Traffic management, Sustainable travel + Mass Transit</i>		Option 3. <i>Great focus on Sustainable modes of transport only</i>
++ [?]	++	-	+
<p>Supporting sustainable and active travel in particular can be positive for health in a number of ways. Firstly, it leads to more active lifestyles, which has proven health benefits. Secondly, it contributes to better air quality, and help to reduce traffic, which is good in terms of access to facilities and services.</p> <p>The improvement of the highways network should also improve road safety and users may feel more comfortable, positively affecting wellbeing.</p> <p>Overall, a potential significant positive effect is predicted.</p> <p>There is uncertainty whether or not the uptake of active travel modes would be widespread though given the dominance of the car at present.</p> <p>Option 2 would also involve a mass transit system, which should significantly improve travel around the borough. This should help to increase accessibility for all groups, and those who cannot switch to active modes of travel (for example due to a disability). Furthermore, a mass transit system ought to improve air quality and reduce congestion in the longer term. Overall, a significant positive effect is predicted. There may be temporary disruptions to the network whilst upgrades are made to support a mass transit system. This could cause negative effects in terms of congestion, disruption to travel and amenity. These effects would only be temporary though, and minor in nature.</p> <p>Option 3 is focused entirely on sustainable modes of travel (mainly walking and cycling), and could have more pronounced effects in terms of encouraging more people to live healthier lifestyles. However, in terms of accessibility and traffic management, the effects would be more limited. Therefore, improvements to air quality, congestion and access to services and jobs would not be anticipated to be as significant. This approach also does little to target access to health care and services for those that cannot walk or cycle. Overall, this balances to a minor positive effect in terms of health and wellbeing for option 3.</p>			

Accessibility		
Option 1: <i>Traffic management and Sustainable travel</i>	Option 2 <i>Traffic management, Sustainable travel + Mass Transit</i>	Option 3. <i>Great focus on Sustainable modes of transport only</i>
+	++	+?
<p>Each option is likely to have positive effects (to differing degrees) as the primary focus is on the improvement of transport and travel choices.</p> <p>Option 1 is predicted to have a minor positive effect. Management of traffic is positive in relation to accessibility, as it should help to reduce travel times, improve safety and improve routes. An improvement in walking and cycling links would also be positive in terms of supporting improved access to services from active travel. A minor positive effect is predicted.</p> <p>For option 2 the addition of a mass transit system would generate significant positive effects as it would serve a wider range of people, improve travel times and frequency and provide better access for people without access to a car.</p> <p>For option 3, the positive effects are less certain. Improved walking and cycling would benefit some members of the community and improve access to local services. However, it would do less to address transport issues relating to roads, it would not have benefits for all members of the community, and may be slow to facilitate a large scale shift in behaviours.</p>		

Climate Change and resource use		
Option 1: <i>Traffic management and Sustainable travel</i>	Option 2 <i>Traffic management, Sustainable travel + Mass Transit</i>	Option 3. <i>Great focus on Sustainable modes of transport only</i>
++?	++	-
<p>Increased use of sustainable travel such as walking and travel would reduce emissions from car-based travel. The reduction would be dependent upon uptake of such measures though; which would not be anticipated to be significant given that the dominant mode of travel is car based. Without further measures to reduce car-based travel, the benefits would likely be minor (Option 3).</p> <p>With additional measures to manage traffic, this will not necessarily result in a decrease in emissions. Reduced congestion and an increase in infrastructure could arguably support increased car traffic, as it would be more attractive. In this respect, emissions would not be anticipated to reduce substantially, and so a minor positive effect is also predicted for Option 1.</p> <p>The introduction of a mass transit system has the potential to significantly decrease carbon emissions in the long term, as it should lead to a more notable reduction in car use compared to improvements in walking and cycling. However, the need for infrastructure provision to support a system would require natural resources (e.g. construction materials and energy) which would generate minor negative effects in the short term that would not occur for options 1 and 3.</p>		

Natural Resources : Air quality

Option 1: Traffic management and Sustainable travel	Option 2 Traffic management, Sustainable travel + Mass Transit	Option 3. Great focus on Sustainable modes of transport only
++?	++	+

All three options are predicted to have positive effects upon air quality to differing extents.

A shift to walking and cycling will reduce car based travel, and therefore the release of emissions. In the town centre this is particularly beneficial given the presence of the AQMA.

Improving traffic management is also beneficial. Whilst the overall level of usage might remain similar, the efficiency of the network would help to reduce congestion, which is a contributor to poorer air quality in the town centre for example. Major improvements that divert traffic from sensitive locations should also help to improve air quality. The Western Link is a good example.

In combination, traffic management and sustainable modes of transport would therefore create the potential for significant positive effects for Option 1. For Option 3, the lack of traffic management measures would mean that effects on air quality are entirely reliant on a shift to sustainable travel. This is unlikely to be substantial over the plan period, and so only minor positive effects are predicted.

The introduction of a mass transit system in addition to these measures (as per Option 2) would help to further reduce emissions due to car use and congestion. However, buses can generate harmful emissions themselves, and an increase in the town centre could be negative. With the use of low / zero carbon vehicles though, these impacts would not occur. Overall, a significant positive effect is predicted.

Natural Resources : Water quality

Option 1: Traffic management and Sustainable travel	Option 2 Traffic management, Sustainable travel + Mass Transit	Option 3. Great focus on Sustainable modes of transport only
+?	+	+

A reduction in car usage could potentially have some minor benefits relating to water quality due to a decrease in pollutants being washed off roads into watercourses.

However, the effects are uncertain and not likely to be significant. The benefits are perhaps most likely to occur for Options 2 and 3 that would be most likely to reduce the numbers of car trips across the borough.

Natural Resources : Land and Soil		
Option 1: Traffic management and Sustainable travel	Option 2 Traffic management, Sustainable travel + Mass Transit	Option 3. Great focus on Sustainable modes of transport only
?	+?	0
<p>Measures to increase walking and cycling would not affect best and most versatile land unless new routes were established that passed directly through farmland. This is unlikely to occur, and so neutral effects are predicted.</p> <p>Traffic management would not be likely to affect soil or land resources if the measures are related to existing infrastructure. New major infrastructure schemes could potentially affect soil and land, but this is unclear at this stage.</p> <p>A mass transit system would most likely not affect large areas of land and soil as in the main it would build upon existing networks and would be in the urban areas. However, some new infrastructure and routes could sever agricultural land. In particular, new routes through the Garden Suburb location, which is predominantly Grade 3a and 2 land. Therefore, a potential minor negative effect is predicted.</p>		

Housing		
Option 1: Traffic management and Sustainable travel	Option 2 Traffic management, Sustainable travel + Mass Transit	Option 3. Great focus on Sustainable modes of transport only
+	++	-
<p>There is a need for housing development to be supported by a strong transport network so that residents can access work and other facilities. A lack of such infrastructure would also lead to congestion and other accessibility issues.</p> <p>Option 1 will have some positive effect on housing as it supports traffic management improvements, which will be necessary to accommodate increased housing. Furthermore, there would be a degree of switching to more active modes of travel which would work hand in hand with network management measures. Consequently a minor positive effect is predicted on housing.</p> <p>Option 2 would generate similar benefits to Option 1, but the development of a mass transit system in theory should help to relieve car based traffic on the network. In turn, this would have positive effects on housing as new development would be less likely to lead to an adverse effect on an already pressured network. There would also likely be stronger links between housing developments and employment areas. This approach may therefore better help support the delivery of housing development, particularly large scale sites that need to demonstrate that the highway network can accommodate growth. Consequently, a potentially significant positive effect is predicted.</p> <p>Option 3 is less likely to support housing growth, as it does not involve improvements to the highways network or substantial improvements in passenger transport. It may therefore be more difficult to demonstrate that strategic housing growth could be delivered. The housing growth proposed in the Draft Warrington Local Plan would be unlikely to be accommodated through a focus on walking and cycling and other sustainability measures only. Therefore, the effects are minor negatives.</p>		

Summary

	Option 1: Traffic management and Sustainable travel	Option 2 Traffic management, Sustainable travel + Mass Transit	Option 3. Great focus on Sustainable modes of transport only
Biodiversity and Geodiversity	+	+ - ?	+ ?
Built and natural heritage	+	+	0
Economy and regeneration	+	++	+ ?
Health and Wellbeing	++ ?	++ -	+
Accessibility	+	++	+ ?
Climate Change and Resource Use	++ ?	++ -	+
Natural Resources: Air quality	++ ?	++	+
Natural Resources: Water quality	+ ?	+	+
Natural Resources: Soil and Land	?	- ?	0
Housing	+	++	-

Option 2 generates the most significant positive effects overall. In particular, this option best supports economic growth and housing development, which are crucial elements of the emerging Local Plan for Warrington.

This option is also most positive in terms of improving accessibility for a wider range of communities and achieving improvements in air quality and contributing to climate change mitigation.

However, this option does have the potential to generate some minor negative effects which would not occur for the other two options. These are related to the potential effects of the physical infrastructure needed to support a mass transit system.

Whilst Option 3 would have no negative effects upon environmental factors, the positive effects are not significant for any factors. This approach may also not help to support the growth of housing that is required to support the population of Warrington.

Option 2 does generate significant positive effects for health, wellbeing, air quality and climate change. However, there is a degree of uncertainty. Whilst it does not generate the minor negative effects that Option 2 could create.

Option 2 is less positive with regards to accessibility improvements and support for housing and employment growth.

