

**CONNECTING LEEDS TRANSPORT STRATEGY  
STRATEGIC ENVIRONMENTAL ASSESSMENT**

**ENVIRONMENTAL REPORT**

**September 2021**



## CONTENTS

	<b>Page:</b>	
<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
1.1.	Leeds	1
1.2	The legislative framework and purpose of SEA	2
1.3	The Connecting Leeds Transport Strategy	4
1.4	Temporal Scope	6
1.5	Spatial Scope	6
1.6	The Assessment Team	6
<b>2</b>	<b>SCOPING SIGNIFICANT EFFECTS</b>	<b>6</b>
2.1	Other relevant plans, policies, programmes and statutory requirements	6
2.2	The environmental baseline	10
2.3	Identifying environmental problems and opportunities	10
2.4	SEA Objectives	16
2.5	Alternative strategic options	19
2.6	Assessing strategic alternatives	20
2.7	Selection of the preferred strategic scenario	27
2.8	Cumulative effects assessment	27
2.9	Consultation on the proposed scope of the assessment	28
<b>3</b>	<b>ASSESSMENT OF SIGNIFICANT EFFECTS</b>	<b>29</b>
3.1	Proposed assessment approach for potentially significant effects	29
3.2	Assessment methodology	30
3.3	Assessment conclusions and recommendations	45
<b>4</b>	<b>MONITORING</b>	<b>49</b>
<b>5</b>	<b>CONSULTATION ON THE DRAFT ENVIRONMENTAL REPORT</b>	<b>51</b>
<b>6</b>	<b>POST ADOPTION STATEMENT</b>	<b>51</b>

# 1. INTRODUCTION

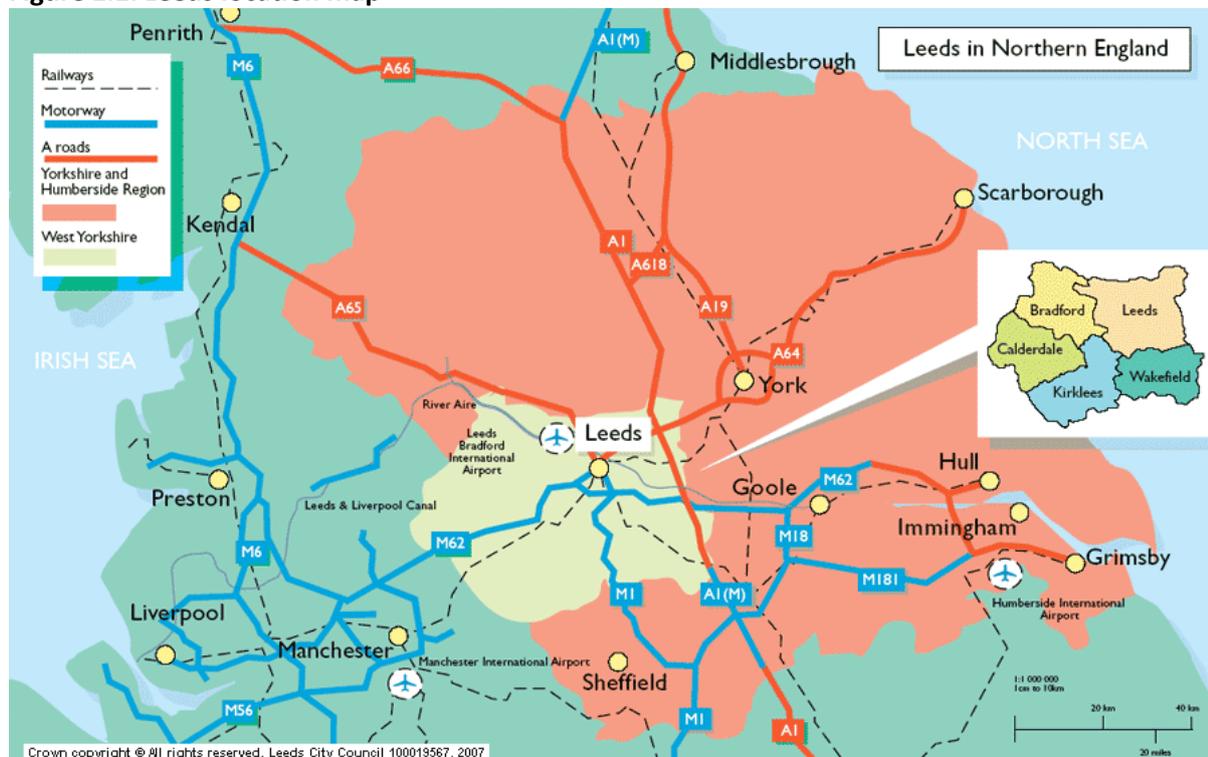
## 1.1 Leeds

Leeds is the regional capital and the main economic centre for Yorkshire and the Humber, and has transformed from a mainly industrial City into a regional capital with a wide economic base with a particularly strong financial and legal sector.

The Leeds Metropolitan District covers an area of 213 square miles (551 km<sup>2</sup>) and benefits from major road, rail and air connections to neighbouring towns and cities, and to national and international networks. The main urban area covers nearly a third of the District, and includes two thirds of the total number of houses. The rural parts of Leeds include larger settlements such as Wetherby and Otley, as well as several smaller towns and villages.

Leeds Rail Station is the busiest station in the north of England, and planned enhancements of existing links and delivery of new ones will provide further benefits, including a new High Speed 2 rail station in the city; improved connectivity with Northern Powerhouse Rail and the planned Trans-Pennine Route Upgrade. The city is also central to the Motorway network with the M1, A1(M) and M62 all converging within the Leeds District, and Leeds Bradford Airport is a significant part of the strategic infrastructure for the City Region and an important economic resource for employment, business development and tourism.

Figure 1.1: Leeds location map



## **1.2 The legislative framework and purpose of SEA**

### *Legislative Framework*

In June 2001 European Union Directive 2001/42/EC – the ‘SEA Directive’ – came into effect, requiring Member States to introduce domestic legislation to interpret the requirements of the Directive into national law. Accordingly, The Environmental Assessment of Plans and Programmes Regulations came into force in England on July 20<sup>th</sup> 2004. Following the UK’s departure from the European Union in 2020 the provisions of the EU Directive have passed over to UK domestic law with no substantive changes.

SEA aims ‘to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development’ (Article 1). The Directive applies to certain plans and programmes, and modifications to them, whose formal preparation or adoption began before 21 July 2006. The environment as defined by the Directive incorporates biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage, landscape and the interrelationship of the above factors.

### *Screening*

SEA is required for the Leeds Transport Strategy as it both relates to the transport sector and sets a framework for individual projects requiring Environmental Impact Assessment under the EIA Directive. SEA is also required if the plan is likely to require an assessment where the plan may damage Sites of Community Importance (namely Special Protection Areas and Special Areas of Conservation) which are designated sites of European ecological importance. Part of the South Pennine Moors Special Protection Area (SPA) / Special Area for Conservation (SAC) lies within the Leeds district boundary at the north-east corner at Ilkley Moor, and therefore potential impacts of the Leeds Transport Strategy on this site need to be considered.

### *Habitat Regulations Assessment*

In order to meet the requirements of regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended) a Habitats Regulations Assessment (HRA) screening assessment has been completed and agreed with Natural England. No likely significant effects were identified for protected habitats sites as a result of the Leeds Transport Strategy implementation. We do however acknowledge the requirement for air quality impacts to be assessed for individual schemes located within 200m of a protected habitats site boundary. The HRA screening assessment is included as an appendix to the Environmental Report.

### *Aims of the SEA*

A summary of the stages involved in the SEA process is shown in figure 1.2. The aim of the SEA is to assess the likely impact of strategic level plans and programmes on the environment, and to inform the decision-making throughout the plan-making programme.

**Table 1.1: Stages in the SEA Process** (taken from ODPM, 2004)

SEA Stages	Purpose
<b>STAGE A: SETTING THE CONTEXT AND ESTABLISHING THE BASELINE</b>	
Identifying other relevant plans, programmes and environmental protection objectives.	To document how the plan/programme is affected by outside factors and suggest ideas for how any constraints can be addressed. Help to identify SEA objectives.
Collecting baseline information.	To provide an evidence base for environmental problems, effects prediction and monitoring. Also helps in the development of SEA objectives.
Identifying environmental problems.	To help focus the SEA and streamline the subsequent stages including baseline information analysis, setting of the SEA objectives, prediction of effects and monitoring.
Developing SEA objectives.	To provide a means by which the environmental performance of the plan or programme can be assessed.
<b>STAGE B: DECIDING THE SCOPE OF SEA AND DEVELOPING STRATEGIC ALTERNATIVES</b>	
Testing the plan or programme objectives against the SEA objectives.	To ensure that the overall objectives of the plan or programme are in accordance with the SEA objectives and provide a suitable framework for developing options.
Appraising strategic alternatives.	To assist in the development and refinement of the strategic alternatives by identifying potential environmental impacts of alternatives for achieving the plan or programme objectives.
Consulting on the scope of SEA.	To ensure the SEA covers the key environmental issues.
<b>STAGE C: ASSESSING THE EFFECTS OF THE PLAN OR PROGRAMME</b>	
Predicting the effects of the plan or programme, including alternatives.	To predict the significant environmental effects of the plan or programme and its alternatives.
Evaluating the effects of the plan or programme, including alternatives.	To evaluate the predicted effects of the plan or programme and its alternatives and assist in the refinement of the plan or programme.
Mitigating adverse effects.	To ensure all potential mitigation measures are considered and as a result residual effects are identified.
Proposing measures to monitor the environmental effects of plan or programme implementation.	To detail the means by which the environmental performance of the plan or programme can be assessed.
Preparing the environmental report.	To provide a detailed account of the SEA process, including the findings of the environmental assessment and how it influenced the development of the draft plan or programme, in a format suitable for public consultation and decision-makers.
<b>STAGE D: CONSULTING AND DECISION-MAKING</b>	
Consulting on the draft plan or programme and the Environmental Report.	To provide the public and Consultation Bodies with an opportunity to express their opinions on the findings of the Environmental Report. Also helps to identify preferred alternatives and gather baseline information.
Assessment of significant changes.	To ensure that any significant changes to the draft plan or programme are assessed for their environmental implications and influence the revision of the draft plan or programme.
Decision-making and provision of information.	To provide information on how the Environmental Report and consultees opinions were taken into account in preparing the plan or programme.
<b>STAGE E: MONITORING IMPLEMENTATION OF THE PLAN OR PROGRAMME</b>	
Developing aims and methods for monitoring.	To measure the environmental performance of the plan or programme in order to determine whether its effects are as anticipated, and thereby inform future revisions.
Responding to adverse effects.	Ensure that adverse effects can be identified and appropriate responses developed.

## *SEA Guidance*

The following guidance has been consulted during the production of this scoping report:

- Strategic Environmental Assessment Guidance for Transport Plans and Programmes – WebTag Tag Unit 2.1 (Department for Transport, 2004).
- The Strategic Environmental Assessment Directive: Guidance for Planning Authorities: Practical guidance on applying European Directive 2001/42/EC "on the assessment of the effects of certain plans and programmes on the environment" to land use and spatial plans in England (Office of the Deputy Prime Minister, 2003).
- A Draft Practical Guide to the Strategic Environmental Assessment Directive (Office of the Deputy Prime Minister, 2004).
- Strategic Environmental Assessment and Biodiversity: Guidance for Practitioners (Countryside Council for Wales, English Nature, Environment Agency and RSPB, 2004).
- Strategic environmental assessment (SEA) and climate change: Guidance for Practitioners (Environment Agency, 2011).
- Sustainability Appraisal and Strategic Environmental Assessment: Historic England Advice Note 8 (Historic England, 2016).

In addition to the Environmental Report, the following documents must be made publicly available to improve the transparency of decision-making and demonstrate how the findings of the SEA have been taken into account:

- The plan or programme as adopted.
- A statement summarising how environmental considerations have been integrated into the plan or programme and how the environmental report [and consultation opinions] have been taken into account....and the reasons for choosing the plan or programme as adopted, in the light of other reasonable alternatives dealt with.
- The measures decided concerning monitoring.

### **1.3 The Connecting Leeds Transport Strategy**

The Connecting Leeds Transport Strategy (from here on referred to as 'the Transport Strategy') outlines how the city proposes to plan and invest in it's transport system to meet the future needs of those living and working in Leeds and contains a set of principles against which investment in transport will be guided. Alongside the Inclusive Growth and Health and Well-being strategies, the Transport Strategy outlines how the Council plans to deliver its aim for Leeds to be the best city in the UK, with a compassionate and caring strong economy, which tackles poverty and reduces inequalities.

The strategy also outlines at a city level how we will work in partnership with the West Yorkshire Combined Authority to deliver the West Yorkshire Transport Strategy 'for the Leeds City Region to be a globally recognised economy where good growth delivers high levels of prosperity, jobs and quality of life for everyone'.

Leeds Transport Strategy has a central vision for “Leeds to be a city where you don’t need a car”, which is supported by three over-arching objectives:

<b>VISION: FOR LEEDS TO BE A CITY WHERE YOU DON'T NEED A CAR</b>	
<b>Supporting Objective</b>	<b>To be achieved by:</b>
Tackling Climate Change	<ul style="list-style-type: none"> <li>• Reducing the need for travel and the number of car journeys, especially at peak times.</li> <li>• Encouraging people to choose active travel and public transport.</li> <li>• Improving the efficiency of the transport network and making better use of our road space.</li> <li>• Encouraging and leading the uptake of zero emission vehicles in freight, public and private transport.</li> </ul>
Delivering Inclusive Growth	<ul style="list-style-type: none"> <li>• Support individuals to access more employment opportunities through a comprehensive transport network.</li> <li>• Develop and regenerate places through continued investment in transport infrastructure.</li> <li>• Improve productivity by investing in a more time and cost-efficient transport system.</li> <li>• Lower the cost of mobility, ensuring transport is affordable and accessible for everyone</li> </ul>
Improving Health and Wellbeing	<ul style="list-style-type: none"> <li>• Ensure walking and cycling are the first choice for the shortest journeys improving physical and mental health.</li> <li>• Reduce the negative effects of transport on our local communities, improving air quality and reducing CO2 emissions.</li> <li>• Help make Leeds the best city to grow old in and a child friendly city through making streets accessible to all.</li> <li>• Eliminate road danger by adopting a Vision Zero approach to road accidents</li> </ul>

## **1.4 Temporal Scope**

The temporal scope of the SEA is the same as that of the Connecting Leeds Transport Strategy. As the Transport Strategy itself supports the aims of a number of other related strategies the temporal scope varies to some degree – for example the West Yorkshire Transport Strategy covers the period to 2036; Climate Emergency Declaration measures to 2030 and Vision Zero safety strategy to 2040.

## **1.5 Spatial Scope**

The Connecting Leeds Transport Strategy covers the Leeds City Council administrative area (see figure 1).

## **1.6 The Assessment Team**

A core SEA team was assembled to support the development of the SEA process, primarily made up of Leeds City Council Officers from the Environmental Advisory Team in Transport Strategy alongside Transport Planners responsible for drawing up the Transport Strategy. Supporting expertise from additional colleagues has been drawn upon when assessing the impacts of the Strategy to cover the full range of SEA topic areas. This approach ensures an appropriate mix of expertise and input to the draft Transport Strategy.

## **2. SCOPING SIGNIFICANT EFFECTS**

The purpose of scoping is to determine the likely extent (spatial, temporal and thematic) of the SEA, the level of detail that will be needed for the assessment, and to identify what information will be included in the SEA and environmental report.

A number of different processes are involved in scoping, including:

- Setting the environmental context and establishing the relevant baseline information.
- Identifying environmental problems and protection objectives.
- Proposing SEA objectives and indicators.
- Identifying reasonable plan alternatives.
- Consultation with the environmental authorities on the proposed scope of the SEA.

Scoping should also identify which areas do not require further detailed investigation in the environmental report.

### **2.1 Other relevant plans, programmes, policies and statutory requirements**

The Leeds Transport Strategy will be affected by, and will itself affect a number of other relevant plans, programmes and statutory regulations at a local, regional national or even international level. It is important to determine which other plans, programmes, etc. may impact on the Transport Strategy's objectives or on relevant environmental issues, and to integrate any relevant policies or objectives within these into the SEA objectives. This will help to ensure compatibility between the aims of the SEA and those of other plans, policies or regulatory requirements. The consideration of other relevant plans

and programmes is also necessary to assess any cumulative, synergistic and secondary effects of the Transport Strategy on the environment.

### *The West Yorkshire Transport Strategy*

The Leeds Transport Strategy stems directly from the West Yorkshire Transport Strategy, which sets the strategic direction for transport in West Yorkshire from 2016-2036. A stated aim of the Leeds Transport Strategy is to deliver elements of the wider West Yorkshire Strategy specific to Leeds, following the same core principles and policy direction. An Integrated Sustainability Appraisal was completed for the West Yorkshire Transport Strategy in 2018 and given the close relationship between the two strategies where appropriate this SEA has adopted a number of the assessment elements of the West Yorkshire Strategy to ensure compatibility and continuity of approach between the two.

A comprehensive review of other relevant plans, programmes, policies and legislation was undertaken for the West Yorkshire Transport Strategy in 2018, and given the significant inter-relationship between the two Strategies this review was used as a basis for this scoping assessment. Although a number of the plans, programmes and policies reviewed in 2018 will still be relevant today, in some cases they may now be outdated or have been replaced by another plan. An additional review of relevant documents was therefore undertaken to identify any new plans, programmes or policies that have been adopted since the original 2018 review. Lists of all reviewed documents are included in appendix 2 and the key themes or issues arising from this review of relevance to the SEA of the Leeds Transport Strategy are presented in table 2.1. These will be addressed as appropriate throughout the Strategic Environmental Assessment process.

**Table 2.1: Key themes arising from the review of relevant plans, programmes and policies.**

<b>ENVIRONMENTAL THEMES</b>		
Promote opportunities for energy efficiency.	Maintain and improve the public right of way and wider access network.	Protect and enhance geodiversity, including sites of geological importance.
Reduce GHG emissions, particularly carbon dioxide.	Ensure efficient resource use and reduce waste. Consider opportunities to maximise on-site re-use of materials and/or use of recycled materials.	Create and restore wildlife-rich habitat outside the protected site network.
Maximise the use of renewable energy, and minimise use of fossil fuels.	Balance the use of brownfield and greenfield land in a sustainable way	Increase woodland cover and ensure the sustainable management of existing woodland
Promote uptake of cleaner technologies, including comprehensive charging infrastructure networks.	Recognise need to remediate contaminated land where necessary and avoid further contaminated of land.	Protect, maintain and where possible enhance natural habitat networks and green infrastructure, to avoid fragmentation and isolation of networks
Support development policies that reduce the need to travel.	Improve soil management, with aim for all soils to be management sustainably.	Protect and enhance designated nature conservation sites of international importance (SPA/SAC), national importance (SSSI) and local nature reserves.
Improve local air quality through minimising traffic related emissions.	Reach or exceed water quality objectives set out in river basin management plan.	Safeguard and enhance natural landscapes.
Reduce traffic congestion.	All developments to improve overall water efficiency, including more absorbent surfaces and sustainable urban drainage systems.	Conserve, protect and enhance designated and non-designated historic assets
Promote sustainable alternatives to car travel.	Minimise the risk and impact of flooding by controlling surface water management and floodplain management	Use architectural design to enhance the local character and "sense of place" of development
Promote viable alternatives to road haulage, such as shipping and rail.	Embed resilience to climate risks in everyday work (e.g. planning / maintenance of road network).	Protect the distinctiveness of local areas.
<b>HEALTH AND SOCIAL THEMES</b>		
Secure improvements to health to all, taking account of the diverse range of influences such as climate change, pollution, conflict, environmental degradation and poverty.	Support the public to make healthier and more informed choices and adopt more physically active lifestyles.	Promote healthy lifestyles through exercise, physically active travel and access to good quality and affordable food, which can assist in reducing both physical and mental illnesses
Provide or improve access to local health and social care services.	Provide physical access for people with disabilities.	Improve safety for people in all modes of transport.

Reduce health inequalities between different groups in the community (including children, pregnant women, black and minority ethnic people; older people, people with disabilities; low income households)	Provide a range of appropriate sustainable transport choices for an ageing population.	Assess and address impacts on diverse communities including cultural, racial, economic, generational, social (including disabilities) and religious mixes
Identify opportunities to provide healthy, sustainable transport to isolated groups in rural areas.	Provide a range of appropriate, sustainable transport choices for young people.	Create a sense of belonging and wellbeing for all members of the community
Promote access to nature.	Ensure physical access for people with disabilities.	Promote equality of opportunity in the way services are planned, promoted and delivered
Improve access to buildings and landscapes of historic/cultural value	Prohibit discrimination, harassment and victimisation on such grounds as sex, race, language and religion.	
Assess and address impacts on diverse communities including cultural, racial, economic, generational, social (including disabilities) and religious mixes	Minimise isolation for vulnerable people	
<b>ECONOMIC THEMES</b>		
Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes.	Consider transport as a system, rather than loosely connected modes to support the achievement of integrated outcomes and deliver social benefits.	Ensure fair access to and distribution of resources across the community
Recognise people's different needs, situations and goals and removes the barriers that limit opportunities for learning, employment or training.	Improve connections to the wider regional, national and international networks.	Improve economic, social and environmental conditions particularly in the most deprived areas

## **2.2 The Environmental Baseline**

The environmental baseline describes the current and likely future environment in the absence of the Transport Strategy and covers a range of environmental, social and economic conditions relating to the SEA topics. By understanding the context in which the Strategy is set we can gain a better understanding of its potential environmental impacts.

Again, because of the many overlaps between the current West Yorkshire Transport Strategy and the Leeds Transport Strategy the review of baseline data has been aligned to that collected for the purposes of the West Yorkshire Strategy's ISA, but has been updated and where appropriate adjusted to be more representative of the Leeds locality.

Data collected to form the environmental baseline is included in appendix 3, and can be developed and revised as more data becomes available.

## **2.3 Identifying Environmental Problems and Opportunities**

Analysis of the environmental baseline highlighted a number of key issues relevant to the Leeds Transport Strategy and to the selection of appropriate SEA objectives. Identifying environmental problems provides an opportunity to define key issues and improve the SEA objectives where necessary. Potential problems can be identified on the basis of:

- Earlier experience with issues identified in other plans and programmes;
- Identification of possible tensions with other plans, programmes and environmental protection objectives;
- Identification of possible tensions between current or future baseline conditions and existing objectives, targets or obligations;
- Consultation with the Consultation Bodies and the public.

Table 2.2 summarises key issues identified as a result of the baseline data and review of other relevant plans and programmes, including previous strategic environmental assessments and sustainability appraisals. Please note that this is not an entire description of the environmental baseline (which is included in appendix 3) but is intended to highlight key issues that may relate to the development of the Transport Strategy and to focus the assessment on the most significant issues.

**Table 2.2: Environmental Problems and Opportunities**

Environmental Topic	Key Issues and Trends	Implications / Opportunities for the Leeds Transport Strategy
<b>Population</b>	<p>The population of Leeds is projected to grow by around 7% between 2018 and 2043. Young adults are the most represented group and this is expected to remain the case throughout the Transport Strategy period.</p> <p>There is also a notable increase in the amount of people in older age groups (70+) throughout the Strategy period.</p>	<p>Consideration will need to be given to meeting the needs of all groups in the Transport Strategy, although the significant number of younger people and growing number of older people may have particular implications in meeting the demands for travel.</p>
<b>Air quality</b>	<p>AQ improving in Leeds and recent monitoring in all but one AQMA indicates annual average levels of NO<sub>2</sub> will fall below objective levels. In anticipation of the proposed CAZ for compliance with a number of measures were adopted by the city to clean up the vehicle fleet and promote electric car use. Early uptake of these measures brought about sufficient improvement in air quality for plans for the CAZ to be cancelled as predictions were that it would no longer be necessary.</p> <p>With regard to particulate matter (PM), Leeds has long been compliant with national AQ objective levels. However Leeds City Council is planning to adopt the more stringent WHO targets and therefore further improvements in PM emissions are likely to be required for compliance with these new standards.</p> <p>The take up of cleaner vehicle technologies in Leeds has been quicker than anticipated as a result of a package of measures and incentives introduced in preparation for a Clean Air Zone (CAZ), to the extent that a CAZ is no longer required in the city.</p>	<p>People’s response to the Covid-19 pandemic with regard to travel habits are unknown and there may be a reluctance to move away from private vehicles to public transport, but this is less likely to be a problem longer term as society re-adjusts.</p> <p>Levels of NO<sub>2</sub> pollution are almost entirely compliant with current national objective levels and are set to continue to decrease as a result of increasing EV uptake and charging infrastructure in Leeds. This trend is likely to continue as EV technology improves and cars with combustion engine technology are phased out. However Leeds City Council are set to adopt the more stringent WHO targets for PM in its forthcoming Clean Air Strategy and it is as yet unknown whether current measures are sufficient to achieve compliance with these new target levels.</p> <p>Regardless of the engine technology, road vehicles are significant sources of particulate matter from brake and tyre wear. This problem is likely to be exacerbated by a sustained increase in road traffic levels in Leeds for over 30 years, and by the increasing preference for heavier vehicles such as SUVs.</p>

Environmental Topic	Key Issues and Trends	Implications / Opportunities for the Leeds Transport Strategy
<b>Noise</b>	The amount of households affected by high levels of road traffic noise is increasing in Leeds, and an associated increase in noise-related health issues can be expected in the population.	<p>This is in part due to increasing levels of traffic on the road network but also due to the fact that more dwellings are being built in close proximity to busy roads.</p> <p>Human perception of average noise levels is not very sensitive to traffic flows, therefore the most effective measures to mitigate noise impacts will be physical interventions such as low noise surfacing, noise barriers, etc.</p> <p>Impacts related to perception of road traffic noise nuisance can exist locally even where average noise levels do not indicate a problem, for example speed humps, accelerating traffic, or inclines on roads. Health impacts can still be relevant in these circumstances if these are regular and long-term exposure.</p>
<b>Light pollution</b>	Levels of skyglow (upwards projected light) has been decreasing for over 20 years and is predicted to continue to decrease, largely as a result of new LED lamp technology.	<p>Further benefits could be made with regard to light pollution with the introduction of overnight dimming schemes or selective switch-offs at off peak times.</p> <p>LED street lamps can still lead to problems with glare or light intrusion at dwellings and care will need to be taken to the positioning and necessary illumination of street lighting schemes. In some circumstances installation of baffles can mitigate problems in sensitive areas.</p>
<b>Carbon Emissions</b>	The transport sector is the largest single contributor of CO <sub>2</sub> in Leeds.	Transport contributions of CO <sub>2</sub> at source are likely to decrease in future years as a result of cleaner vehicle technologies and the phasing out of petrol and diesel cars. However additional measures are also likely to be needed to meet LCC's target of net zero CO <sub>2</sub> emissions by 2030 which this Transport Strategy should seek to address.

Environmental Topic	Key Issues and Trends	Implications / Opportunities for the Leeds Transport Strategy
<b>Climate resilience</b>	2019 UK Climate Projections for Leeds suggest we can expect hotter summers with regard to both average temperatures and 'hot spells'. Summers will tend to become drier but with a possible increase in intense summer rainfall events.	Increased frequency of intense rainfall events may give rise to an increase in flash flooding events (which the Strategic Flood Risk Assessment has already identified as a current issue for parts of Leeds).  Increasing summer temperatures could also pose problems with regard to overheating on public transport, increased need for shelter at bus stops and road melt / rutting.
<b>Biodiversity, Flora and Fauna</b>	There are 17 sites of national importance for nature conservation in Leeds, including a small area of the South Pennine Moorlands Special Protection Area (SPA) / Special Area for Conservation (SAC) at Hawksworth Moor which is of European importance. Many more sites of local importance are distributed across the district. No recent condition assessments were available to give an indication as to any trends of improvement or deterioration of the value of these sites.  The Leeds Habitat Network links sites of biodiversity importance and other habitats identified from Phase 1 habitat surveys to provide routes for migration, dispersal and genetic exchange of species in the wider environment.	The Transport Strategy needs to be mindful of the Habitat Network and avoid any potential impact on designated sites and/or severance of the network.  Opportunities to support and enhance the Habitat Network should be considered in the development of the Transport Strategy and any future implementation plans. For example, new habitat creation may be incorporated into P&R sites or management of highway land.
<b>Contaminated land</b>	Contaminated land is widespread across the district particularly in central and southern areas and along the River Aire.	There is the potential to mobilise pollutants where land is disturbed for highway works, particularly close to water courses. Although this is more relevant at a scheme design level the Transport Strategy should be mindful of the location of contaminated sites, especially in its implementation plans.
<b>Water quality</b>	Water quality in Leeds is thought to be largely stable although there are some localised deteriorations and limited evidence of significant improvement.  Run off from roads contains a number of pollutants that contribute to water pollution.	The introduction of sustainable drainage systems (SuDS) and/or wetland systems can be effective in removing pollutants from road run off but further work would be needed to identify key stretches of the most polluting roads to deliver effective water quality improvement interventions.

Environmental Topic	Key Issues and Trends	Implications / Opportunities for the Leeds Transport Strategy
<b>Flooding</b>	<p>In Leeds the River Aire and River Wharfe are susceptible to flooding, and this occasionally leads to flooding in the Kirkstall area, including flooding of the A65 / A659 roads as well as parts of the rail network.</p> <p>New transport interventions can aggravate the existing flood risk by requiring landtake from floodplains and by changing the drainage regime from land in transport use.</p>	<p>The Transport Strategy should seek to ensure that transport infrastructure minimises any negative effect arising from flooding (e.g. by conducting flood risk assessments and using materials/techniques which reduce surface run-off) and slow the flow of water to main water courses. Where transport schemes require a landtake from the floodplain there should be appropriate compensatory measures put in place.</p> <p>The Transport Strategy should also recognise that climate change is likely to worsen the risk of flooding events and prolonged drought and that necessary mitigation measures are included, particularly with regard to its implementation plans.</p>
<b>Economy</b>	<p>Leeds holds a strong economic position in Yorkshire and the Humber and is expected to account for almost a third of net jobs in the region during the next decade.</p> <p>Financial and business services account for 38% total output in Leeds and jobs for these sectors are most likely to be based in city centre locations.</p>	<p>The Transport Strategy should seek to improve journey times to work, with particular regard to public transport and acknowledge barriers to employment associated with the cost of travel and availability of public transport to places of employment.</p> <p>The Transport Strategy should consider that enhancing the visual appeal of an area can help to encourage new inward investment, and help to retain high skilled labour.</p>
<b>Road Traffic Accidents</b>	<p>The overall number of road traffic casualties has been falling in Leeds since 2015 although there has been a recent increase in more serious accidents resulting in people being killed or seriously injured, particularly among car users and cyclists.</p>	<p>The Transport Strategy should seek to support a clear strategy and programme to implement measures that continue to enhance safety for all road users groups.</p>

Environmental Topic	Key Issues and Trends	Implications / Opportunities for the Leeds Transport Strategy
<b>Health</b>	<p>Life expectancy for men and women in Leeds is significantly worse than the England average, although improving.</p> <p>68.2% adults in Leeds are physically active and slightly increasing. This is in line with the national average. Child obesity is also similar to the national average but is increasing slightly.</p>	<p>The Transport Strategy should encourage healthier lifestyles for all by providing environments that promote good physical and mental health (e.g. through promotion of active modes of travel, improvement of local air quality) and by providing affordable, integrated and efficient transport systems.</p> <p>The Transport Strategy should seek to increase the attractiveness of sustainable transport options between communities, to make active modes of travel more popular.</p>
<b>Deprivation and inequality</b>	<p>The main way that transport and inequality is linked is through lack of access to a range of opportunities. These not only include access to education, training and employment opportunities, but also family and social networks, housing, recreation and amenities, community engagement activities and key goods and services.</p> <p>Although public transport journey times to key services (education, jobs, healthcare) are good in urban areas of Leeds there are a number of rural areas to the north of the district where journey times fall below national averages with regard to accessing all key services.</p>	<p>The Transport Strategy should aim to promote accessibility to key services and facilities and employment areas by public transport and cycling routes, particularly to/from relatively deprived areas.</p> <p>Opportunity to improve and strengthen transport links between market towns and their surrounding rural areas. Differences in deprivation are a major determinant of health inequality in the UK. Improving access of opportunity in deprived areas will assist in reducing such inequalities.</p>
<b>Historic environment</b>	<p>Leeds has a significant number listed buildings and the collection of Victorian and Edwardian buildings in the city centre are of national importance.</p>	<p>There may be potential tension between proposals in the transport strategy and the conservation of its significant heritage assets.</p> <p>Opportunities also exist to protect and enhance heritage assets through measures that reduce pollution, remove traffic from roads and improve the public realm.</p>

## 2.4 SEA objectives

Given the significant inter-relationship between the West Yorkshire and the Leeds Transport Strategies, and the overlap of geographical boundaries a decision was taken to principally adopt the same SEA objectives that were developed for the West Yorkshire Transport Strategy, although some of the specific additional Health and Equality Impact Assessment objectives were incorporated into wider health and social SEA objectives for this assessment. This decision was supported by the fact that the review of other relevant plans, programmes or strategies and the environmental baseline for both Strategies shared many of the same key environmental issues and constraints. It was considered that assessing both Strategies against the same set of objectives would help to align the assessment of environmental effects. As shown in table 2.3 the objectives selected cover all requirements of the SEA Regulations.

A compatibility test of each of the SEA objectives against each other was undertaken to ensure that no conflicts will arise during the assessment. As can be seen from figure 2.4 the only potential conflict identified between objectives was between measures to enhance productivity and competitiveness of business, which could result in deterioration of air quality and increased greenhouse gas emissions.

**Table 2.3: Strategic Environmental Assessment Objectives and their relationship to the SEA topics:**

SEA OBJECTIVES		SEA TOPICS										
		Biodiversity	Population	Human health	Fauna	Flora	Soil	Water	Air	Climatic factors	Material assets	Cultural heritage
1	Protect and enhance local air quality.		✓	✓					✓			
2	To protect and enhance biodiversity, geodiversity and the green infrastructure network	✓			✓	✓	✓	✓	✓			
3	Protect and enhance the international sites of importance for biodiversity (Habitat Directive sites)	✓			✓	✓	✓	✓				
4	Reduce carbon dioxide emissions from transport		✓							✓		
5	Reduce vulnerability to climate change by minimising flood risk and effects from other adverse weather conditions		✓	✓					✓		✓	
6	Promote prudent use of natural resources, minimise the production of waste and support re-use and recycling										✓	
7	Protect and enhance the water environment							✓				
8	Conserve soil resources and quality and seek to remediate contaminated land						✓					
9	Conserve and, where appropriate, enhance those elements which contribute to the significance of the area's heritage assets, including their setting.										✓	✓
10	Protect and enhance the character and quality of landscape and townscape.										✓	✓
11	Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking.		✓	✓					✓	✓		
12	Maintain or improve the number and range of good quality and accessible employment opportunities.		✓									
13	Enhance productivity and competitiveness of businesses.		✓									
14	Improve health and well-being for all citizens and reduce inequalities in health*.		✓	✓								
15	To promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society.		✓									
16	Improve road safety and reduce the number of accidents and other incidents.		✓	✓								
17	Reduce crime and fear of crime and promote community safety.		✓	✓								

\* Including factors such as physical activity, noise and light pollution.



## 2.5 Alternative strategic options

The SEA Regulations requires that the assessment should consider reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, and give an outline of the reasons for selecting the alternatives dealt with.

The strategic direction of transport policy in Leeds has already been determined at a regional level by the West Yorkshire Transport Strategy 2016-2036, therefore the environmental implications of each different scenario are unlikely to vary significantly and selection of the preferred option will relate more to the degree to which each option can successfully implement the West Yorkshire Strategy’s objectives.

The WY Transport Strategy 2016-2036 has the stated vision ‘**to enhance business success and people’s lives by providing modern, world-class, well-connected transport that makes travel around West Yorkshire easy and reliable**’. The Strategy Vision is supported by three key objectives shown in table 2.5.

**Table 2.5: West Yorkshire Transport Strategy 2016-2036 objectives**

TRANSPORT STRATEGY OBJECTIVES		
Economy	Environment	People and Place
Create a more reliable, less congested, better connected transport network	Have a positive impact on our built and natural environment.	Put people first to create a strong sense of place.

Within the bounds of the agreed objectives for the West Yorkshire Strategy three alternative strategy options have been considered in the course of developing the Leeds Transport Strategy. Although it is not the purpose of the SEA to decide the alternative to be chosen for the plan or programme it should provide information on the relative environmental performance of alternatives, and to make the decision-making process more transparent.

All three alternative scenarios under consideration aim to meet the stated vision and objectives of the Leeds Transport Strategy:

- Scenario 1: Do Minimum – Delivery of the West Yorkshire Transport Strategy without an additional Leeds specific strategy or action plan.**  
Leeds City Council would rely on the WY Transport Strategy 2040 solely without any local specific guidance; investment in transport would continue as at present.
- Scenario 2: Do Minimum + Produce Connecting Leeds Transport Strategy + action plan**  
Produce Leeds specific transport strategy which aligns with WY Transport Policy but also meet Leeds specific targets; strategy document outlines vision for Leeds with an associated implementation plan to allow the Strategy objectives to be realised.
- Scenario 3: Do Minimum + Produce Leeds Action plan without strategy**  
Produce a standalone action or implementation plan to enact WY transport strategy within Leeds without a Leeds specific strategy to coordinate measures.

Further analysis of these alternatives and the policy instruments they would entail are included in appendix 4.

## 2.6. Assessing strategic alternatives

The strategic alternative options were compared both to each other and against a ‘do-minimum’ scenario, and was considered in the context on whether it would have a likely significant effect in relation to each of the SEA objectives. The results of this assessment are presented in table 2.6.

The approach used for the assessment of significance of predicted effects was again kept consistent with the West Yorkshire Transport Strategy. There are a number of factors that will determine the significance of an effect, e.g. its scale and permanence and the nature and sensitivity of the receptor, although essentially the assessment is a matter of professional judgement. It is very important that judgements of significance are systematically documented, in terms of the particular characteristics of the effect which are deemed to make it significant and whether and what uncertainty and assumptions are associated with the judgement.

As is standard practice in SEA, the prediction and evaluation of effects is based on a qualitative point scale as follows:

Assessment Scale	Assessment Category	Significance of Effect	
+++	Large beneficial	Significant	
++	Moderate beneficial		
+	Slight beneficial	Not Significant	
0	Neutral or no obvious effect		
-	Slight adverse		
--	Moderate adverse	Significant	
---	Strong adverse		
?	Effect uncertain		
+/-	Combination of slight beneficial and adverse effects	Not significant	
++	--	Combination of moderate beneficial and adverse effects	Significant

Those effects which are either moderate or major are deemed to be significant.

**Table 2.6: Assessment of Strategic Alternative Options**

SEA OBJECTIVES	SCENARIO 1  <b>Do Minimum – Delivery of the West Yorkshire Transport Strategy without an additional Leeds specific strategy or action plan</b>	SCENARIO 2  <b>Do Minimum + Produce Connecting Leeds Transport Strategy + action plan</b>	SCENARIO 3  <b>Do Minimum + Produce Leeds Action plan without strategy</b>
	Assessment score / Explanation	Assessment score / Explanation	Assessment score / Explanation
1. Protect and enhance local air quality.	<p data-bbox="448 443 504 467">--</p> <p data-bbox="526 443 1008 762">This scenario includes a number of schemes are aimed at improving road capacity for orbital moving and taking traffic away from urban centres. This would result in improvements in air quality in the urban centres but could also result in deteriorating air quality in new areas and contribute to an increase of air pollution overall as a result of an increase in vehicle kms.</p> <p data-bbox="526 802 1008 1153">There is also a focus on road based access with significant investment to strengthen road capacity on trans-Pennine routes and support for low density development with a focus on car related growth would also contribute to an overall increase in vehicle kms and associated air pollution in the area. This could lead to further exceedances leading to the designation of new AQMAs or to a lack of improvement in existing AQMAs.</p> <p data-bbox="526 1193 1008 1412">Some of the effects could be counteracted to some extent by the strengthening of car clubs, ULEV technology and major highways works targeted on congested/poor air quality areas to improve traffic flows, but overall, moderate adverse effects are predicted.</p>	<p data-bbox="1030 443 1064 467">-</p> <p data-bbox="1108 443 1518 794">Although the WYTF schemes for increasing road capacity are still included in this scenario, negative air quality effects will to some extent be offset by additional initiatives in the Leeds Strategy and action plan to achieve 30% reduction in both private vehicle mode share and in distances travelled by car, and the aim to achieve net zero CO2 emissions in Leeds by 2030.</p>	<p data-bbox="1541 443 1597 467">--</p> <p data-bbox="1619 443 2054 730">The negative impacts from infrastructure schemes aimed to increase capacity are carried over from scenario 1, but may be alleviated slightly through the benefit of local knowledge of air quality issues in Leeds, for example in displacing traffic from the urban centre to outlying neighbourhoods.</p>

<p>2. To protect and enhance biodiversity, geodiversity and the green infrastructure network.</p>	<p>--</p>	<p>A number of WYTF proposed schemes (orbital road schemes, road based access to new development areas) would give rise to additional adverse effects on biodiversity, geodiversity and green infrastructure network.</p> <p>Schemes in mainly built up and city centre areas and/or associated with improvements to existing infrastructure would be supplemented by a number of WYTF schemes which would take greenfield land with biodiversity and geodiversity value potentially resulting in moderate adverse effects.</p>	<p>--</p>	<p>No additional measures are included in this scenario that would alleviate the impact of the do-minimum on the biodiversity, geodiversity or the green infrastructure network.</p>	<p>--</p>	<p>No additional measures are included in this scenario that would alleviate the impact of the do-minimum on the biodiversity, geodiversity or the green infrastructure network.</p>
<p>3. Protect and enhance the international sites of importance for biodiversity (Habitat Directive sites).</p>	<p>0</p>	<p>The majority of the interventions under this scenario will continue to be focussed in urban areas or around urban areas thus there are unlikely to be any effects on International sites.</p>	<p>0</p>	<p>No additional measures are introduced under this scenario that are likely to impact on protected sites.</p>	<p>0</p>	<p>No additional measures are introduced under this scenario that are likely to impact on protected sites.</p>
<p>4. Reduce carbon dioxide emissions from transport.</p>	<p>--</p>	<p>A number of WYTF proposed schemes under this scenario are aimed at improving road capacity for orbital moving and taking traffic away from urban centres. This would result in an increase in vehicle kms and associated carbon dioxide emissions. WYTF Key Development Area Schemes, through their focus on road based access, coupled with significant investment to strengthen road capacity on trans-Pennine routes and support for low density development with a focus on car related growth would also contribute to an overall increase in vehicle kms and associated carbon dioxide emissions.</p>	<p>0</p>	<p>Although WYTF proposed schemes to improve road capacity are still included in this scenario there is also the introduction of several additional interventions to support Leeds City Council's commitment for net zero CO2 emissions.</p>	<p>--</p>	<p>Scenario 3 carries involves implementation of the WYTF proposed schemes to improve road capacity but without the benefit of additional measures aimed at compliance with the Leeds City Council's climate change target for net zero CO2 emissions.</p>

		Some of the effects could be counteracted to some extent by strengthening of car clubs, ULEV technology and major highways works targeted on congested/air quality areas to improve traffic flows, but overall, moderate adverse effects are predicted.				
5. Reduce vulnerability to climate change by minimising flood risk and effects from other adverse weather conditions.	+/-	<p>The type of interventions that could arise out of this scenario would likely give rise to effects on flood risk. Orbital road schemes built on flood zones, in particular, could give rise to moderate adverse effects locally.</p> <p>This scenario considers major investment in road network climate change adaptation which could result in positive effects across the existing network.</p> <p>A combination of effects is predicted</p>	+/-	No additional measures are included in this scenario beyond those identified for the WY Strategy to minimise flood risk.	+/-	No additional measures are included in this scenario beyond those identified for the WY Strategy to minimise flood risk.
6. Promote prudent use of natural resources, minimise the production of waste and support re-use and recycling.	--	As there would be a number of major schemes, in particular WYTF Orbital Road Schemes, scenario 1 would lead to a significant use of resources in construction and operation, and produce substantial amounts of waste.	--	No additional measures are included in this scenario beyond those identified for Scenario 1 to promote prudent use of resources / recycled materials or reduction of waste.	--	No additional measures are included in this scenario beyond those identified for Scenario 1 to promote prudent use of resources / recycled materials or reduction of waste.
7. Protect and enhance the water environment.	--	As there would be a number of major schemes, in particular WYTF Orbital Road Schemes, this scenario would likely give rise to moderate adverse effects on the water environment due to contaminated surface water runoff being generated.	--	Potential impacts on the water environment associated with WYTF schemes described in scenario 1, plus additional potential P&R sites / mass transit system proposed as part of the Connecting Leeds Strategy.	--	No additional measures are included in this scenario beyond those identified for Scenario 1 with regard to protecting or enhancing the water environment.

8. Conserve soil resources and quality and seek to remediate contaminated land.	--	As there would be a number of major schemes, in particular WYTF Orbital Road Schemes, this scenario would likely give rise to moderate adverse effects on this objective due to the use of greenfield land.	--	Potential impacts on greenfield land associated with WYTF schemes described in scenario 1, plus additional potential P&R sites / mass transit system proposed as part of the Connecting Leeds Strategy.	--	No additional measures are included in this scenario beyond those identified for Scenario 1 with regard to protecting or enhancing the water environment.
9. Conserve and, where appropriate, enhance those elements which contribute to the significance of the area's heritage assets, including their setting.	--	As there would be a significant number of major schemes, in particular WYTF Orbital Road Schemes, this scenario would likely give rise to moderate adverse effects on this objective due to the potential presence of heritage assets in the vicinity of the routes.	+/-	<p>Potential impacts on heritage associated with WYTF schemes described in scenario 1, plus additional potential P&amp;R sites / mass transit system proposed as part of the Connecting Leeds Strategy.</p> <p>Proposals to discourage car travel through the City Centre could have potential benefits in the centre but extra traffic may instead be diverted to district centres, negatively impacting on these neighbourhoods.</p> <p>Proposals in the Leeds Strategy to improve the public realm through gateway schemes would have a potentially beneficial impact on heritage assets.</p>	--	Although a Leeds Action Plan would provide some additional local influence, as most of the effects identified in the do-minimum are related to major new infrastructure schemes this is unlikely to affect the significance of effect.
10. Protect and enhance the character and quality of landscape and townscape.	--	As there would be a significant number of major schemes, in particular WYTF Orbital Road Schemes, this scenario would likely give rise to moderate adverse effects on this objective due to interventions on greenfield land in more rural areas.	+/-	<p>Potential impacts on townscape associated with WYTF schemes described in scenario 1, plus additional potential P&amp;R sites / mass transit system proposed as part of the Connecting Leeds Strategy.</p> <p>Proposals to discourage car travel through the City Centre could have potential benefits in the centre but extra traffic may instead be diverted to</p>	--	<p>Although a Leeds Action Plan would provide some additional local influence, as most of the effects identified in the do-minimum are related to major new infrastructure schemes this is unlikely to affect the significance of effect.</p> <p>There are no additional strategic drivers in this scenario that would bring further improvements to the public realm.</p>

				<p>district centres, negatively impacting on these neighbourhoods.</p> <p>Proposals in the Leeds Strategy to improve the public realm through gateway schemes would have a potentially beneficial impact on the townscape.</p>		
<p>11. Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking.</p>	--	<p>This scenario promotes road and rail based capacity improvement. Whilst rail based capacity improvement (in particular some WYTF Corridor Schemes) may result in a shift from private car to a more sustainable mode of transport, improving road based capacity and reducing congestion will likely result in increased car use overall as travelling times improve and more route options for car travel become available.</p> <p>It is considered that despite interventions such as Car Clubs, ULEV Technology, etc there would not be a significant shift to more sustainable modes of transport due to the significant investment in improving road based capacity through the WYTF schemes.</p>	+	<p>Additional specific targets in the Connecting Leeds Strategy for doubling bus patronage; net zero carbon by 2030; and 30% reduction in private car use should result in a net positive impact on congestion and higher uptake of sustainable modes.</p>	--	<p>The negative effects from measures in the do-minimum scenario to improve capacity on the road network are not considered likely to be significantly offset by additional interventions that may be included in a Leeds specific implementation plan.</p>
<p>12. Maintain or improve good quality and accessible employment opportunities.</p>	++	<p>Moderate beneficial effects are expected to arise from the interventions under this scenario as some interventions are specifically aimed at ensuring good accessibility to expected major employment and housing areas as well as improving accessibility to employment in the city centres and existing employment areas.</p>	+++	<p>Continuation of interventions described in scenario 1, supported by additional Leeds measures to reduce barriers to accessing employment and better integrating land-use and transport planning to reduce the amount of travel required to access employment opportunities.</p>	++	<p>Any further improvements on the do minimum would need specific strategic interventions that are not available through a local implementation plan.</p>

13. Enhance productivity and competitiveness of businesses.	++	The interventions proposed under this scenario would improve connectivity between local communities and beyond therefore reducing journey times and enhancing travel reliability for commuters.	+++	Continuation and further refinement of interventions described in Scenario 1.	++	A local implementation/action plan would not be able to offer any significant enhancement to the strategic benefits offered in the do-minimum scenario.
14. Improve health and well-being for all citizens and reduce inequalities in health.	++	The interventions proposed under this scenario improve connectivity between communities, and make improvements to road and rail based services. This should improve access to a range of local facilities including healthcare facilities which would improve health and wellbeing for residents (assuming they are accessible for all, both in terms of physical accessibility and affordability).	+++	As scenario 1 but with additional measures to prioritise and improve opportunities for active travel, which has well acknowledged health and wellbeing benefits.	++	Scenario 3 would give more control over opportunities to improve health although not enough to significantly alter likely effects of the do-minimum.
15. To promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society.	++	Slight beneficial effects are expected to arise from the interventions under this scenario as some interventions are specifically aimed at ensuring good accessibility to employment and housing areas as well as improving accessibility to the city centres which provide a range of vital services and facilities for residents therefore providing greater equality of opportunity for residents. The improvements would, however, only benefit all citizens if they provided an accessible service (physical accessibility and affordability) and assisted in achieving a fairer society for all.	+++	Continuation of measures described in scenario 1, supported by additional Leeds measures aimed at reducing barriers to accessing employment, and better integrating land-use and transport planning to improve access and opportunities on a city-wide basis.	++	Scenario 3 would give slightly more control over opportunities to promote equality of opportunity in Leeds although the end outcomes are unlikely to be significantly different to the do-minimum.

## 2.7 Selection of the preferred strategic scenario

Strategic scenario 2 was decided on as the best option to be developed into the Connecting Leeds Transport Strategy by those developing the plan. It was considered that this option was able to best deliver the West Yorkshire Transport Strategy in Leeds as it enabled regional transport initiatives to be implemented in a way that complements other strategic priorities in the city. The action plan element of this option also enables more local considerations to be captured as schemes included in the Transport Strategy are developed into more detailed deliverable projects. The environmental assessment of each of the strategic scenarios also found scenario 2 to be the best performing option in relation to the SEA objectives.

## 2.8 Cumulative Effects Assessment (CEA)

The role of CEA is to appraise the overall potential cumulative effects of the Strategy on valued resources. At the level of broad options relating to spatial alternatives of development, CEA could be used to compare the impact of different options by considering potential effects on valued resources, such as designated protected sites or specific environmental sensitivities.

Cumulative effects are considered on the basis of the following:

- What are the potential cumulative effects of the Transport Strategy on valued resources?
- Are there any other plans or actions that may affect the same resources?
- Are the effects likely to be significant?

A cumulative effects assessment was undertaken as part of the scoping process for the SEA to identify possible direct and indirect impacts as well as impact relationships to enable a whole picture of potential effects to emerge. The following potential cumulative effects were identified and were included as part of the detailed assessment of the final Transport Strategy option.

**Table 2.6: Potential Cumulative Effects arising from the Leeds Transport Strategy**

Cumulative Effect	Affected Receptor	Causes
Increase in air pollution	Population Wildlife habitats Species (in particular within the AQMAs and in proximity to major roads)	Air emissions from major roads and particularly congested areas are of concern. Designation of the AQMAs indicates that national air quality standards are unlikely to be met in the areas concerned.
Habitat degradation, loss and fragmentation	Areas of wildlife habitats (in particular, those in unfavourable condition), valuable landscapes (in particular, those showing negative trends)	Use of land for new infrastructure. Disturbance of habitats and species and negative effects as a result of human activities (recreation, noise from transport, etc), pollution of environmental media (water, soil and air).
Climate change	Population (human health)  Transport Infrastructure	Even though local actions to combat an increase in GHG emissions (in particular carbon dioxide emissions) are important, climate change is a global phenomenon and GHG concentrations in the atmosphere are likely to increase during the Transport Strategy period as a result of human

		activities worldwide. These activities include transport, energy, industry, buildings sectors and others. Joint efforts of all nations may lead to a subsequent stabilisation and decline of GHG concentrations but such effects are not likely to take effect until after the Transport Strategy period.
Increase in flood risk	Population Infrastructure Heritage assets Wildlife habitats Species	Use of land for new transport infrastructure, commercial uses, housing and associated increase in impermeable surfaces. Risk of significant flooding events is also likely to increase in the future, particularly as a result of climate change consequences.
Increase in water pollution	Rivers Groundwater	Water pollution is largely caused by human activity and has had a major impact on our local waterways and their ability to be healthy and function naturally. Water pollution comes from two sources - point sources or diffuse sources. Pollution from various sources discharging into the same waterbody can result in exceedances of water quality standards.
Heritage degradation	Local heritage assets (in particular, those on the Heritage at Risk Register)	Use of land for new infrastructure, including transport infrastructure, commercial uses and housing. Disturbance of heritage assets and their settings as a result of human activities (recreation, noise from transport, etc) and pollution of environmental media (water, soil and air).
Landscape and townscape degradation	Local landscape and townscape	Combined effects can arise through the interaction of two or more developments, whether of the same type or not, within the landscape/townscape and visual baseline context. Collectively they give rise to an overall combined effect and cause irreversible harm.

## 2.9 Consultation on the proposed scope of the assessment

As required by the SEA Regulations, the statutory consultation bodies for England (Historic England, Natural England and the Environment Agency) were asked to provide comment on the proposed scope of the Environmental Report on 9th July 2021. Responses received are summarised in appendix 1. Feedback was overall positive but where any changes have been recommended these have been addressed and incorporated into the SEA where appropriate.

Wider engagement with a range of relevant experts from Leeds City Council was also sought to inform the assessment and facilitate more robust decision-making. Comments received from additional stakeholders on the scope of the assessment have also been summarised in appendix 1.

### 3. ASSESSMENT OF SIGNIFICANT EFFECTS

#### 3.1 Assessment of potentially significant effects

There are a number of factors that will determine the significance of an effect, e.g. its scale and permanence and the nature and sensitivity of the receptor. Assessing the significance of predicted effects is essentially a matter of judgement and it is therefore important that judgements of significance are recorded both in terms of the particular characteristics of the effect considered to make it significant, and with regard to any uncertainties and assumptions associated with the judgement. The assessment of significance also includes information on how the effect may be avoided or its severity reduced. To reduce the subjectivity of individual judgement and to broaden the level of expertise a panel of officers from across Leeds City Council were invited to participate in the assessment of the preferred option for the Leeds Transport Strategy to represent the full range of SEA topics as well as representatives from relevant highway teams.

The Environmental Report is also required to include secondary, cumulative and synergistic effects of the Transport Strategy:

- Secondary or indirect effects are effects that are not a direct result of the plan, but occur away from the original effect or as a result of the complex pathway e.g. inadequate or expensive public transport provision may affect a person's ability to access employment, having indirect effects on their income and quality of life. These effects are not cumulative and have been identified and assessed primarily through the examination of the relationship between various objectives during the Assessment of Effects.
- Cumulative effects arise where several proposals individually may or may not have a significant effect, but in-combination have a significant effect due to spatial crowding or temporal overlap between plans, proposals and actions and repeated removal or addition of resources due to proposals and actions.
- Synergistic effects are the result of two or more effects acting together which is greater than the simple sum of the effects when acting alone. For instance, a wildlife habitat can become progressively fragmented with limited effects on a particular species until the last fragmentation makes the areas too small to support the species at all.

Many sustainability problems result from cumulative effects. These effects are very hard to deal with on a project by project basis through Environmental Impact Assessment. It is at the strategic level that they are most effectively identified and addressed. Cumulative effects assessment is a systematic procedure for identifying and evaluating the significance of effects from multiple activities. The analysis of the causes, pathways and consequences of these effects is an essential part of the process. A list of potential cumulative effects from the Transport Strategy was identified during the scoping stage (see table 2.6), and these were referred to and incorporated into the assessment of effects for the Transport Strategy.

### 3.2 Assessment methodology

The assessment includes all policies and proposed schemes described by the Connecting Leeds Transport Strategy, and where relevant recommendations are made for further assessment when implementation plans associated with the Strategy are developed. The Transport Strategy is structured around six 'big moves' which form the focus of the Strategy, and the stated policies for each big move have been assessed against the SEA objectives. An assessment score and explanation has been given for every identified potential effect. Some environmental effects will only become apparent when detailed scheme designs are drawn up, for example impacts on designated sites, in which case recommendations are made for consideration when implementation or action plans are developed.

In line with common practice for SEA the qualitative prediction and evaluation of effects is based on a qualitative scale in easily understood terms. Table 3.1 shows the scale used to assess the significance of effects of the Transport Strategy.

**Table 3.1: Criteria for Assessing the Significance of Effects**

Assessment Scale	Assessment Category	Significance of Effect	
+++	Large beneficial	Significant	
++	Moderate beneficial		
+	Slight beneficial	Not Significant	
0	Neutral or no obvious effect		
-	Slight adverse		
--	Moderate adverse	Significant	
---	Strong adverse		
?	Effect uncertain		
+/-	Combination of slight beneficial and adverse effects	Not significant	
++	--	Combination of moderate beneficial and adverse effects	Significant

Moderate and strong beneficial and adverse effects have been considered of significance whereas no effect, slight beneficial and adverse effects will be considered non-significant. The conclusions of the assessment of environmental effects from the Transport Strategy are included in table 3.2.

**Table 3.2: Assessment of environmental effects**

<b>BIG MOVE: DE-CARBONISING TRANSPORT</b>		
<b>SEA Objective</b>	<b>Assessment Score / Comments</b>	
1. Protect and enhance local air quality.	++	Measures to reduce carbon (alternatively fuelled vehicles, more walking, cycling and public transport use, etc) will also have associated air quality benefits with regard to NO <sub>2</sub> . Modal shift to walking and cycling will improve air quality but a significant proportion of PM pollution from vehicles is generated through tyre wear, etc and this will not necessarily be resolved by increasing the number of alternatively fuelled vehicles. Priority should therefore be placed on encouraging more public transport use, walking and cycling. Air quality benefits will be enhanced in areas with high levels of air pollution or traffic congestion.
2. To protect and enhance biodiversity, geodiversity and the green infrastructure network	++	Street tree planting scheme will have benefits in terms of providing wildlife habitat and potentially enhancing the Habitat Corridor Network in Leeds by linking habitats and providing migration routes.
3. Protect and enhance the international sites of importance for biodiversity (Habitat Directive sites)	0	No Habitat Directive sites will be directly affected by the proposed measures to de-carbonise transport but there will be a slight positive effect through lower carbon emissions and reduced climate change.
4. Reduce carbon dioxide emissions from transport	+++	All measures in this 'big move' are specifically designed to reduce carbon emissions from transport.
5. Reduce vulnerability to climate change by minimising flood risk and effects from other adverse weather conditions	++	Street tree planting scheme will have a moderate beneficial impact for climate vulnerability in terms of providing shade and reducing road run-off. Enhanced benefits can be achieved by interconnecting tree pits if included at inception of design for new schemes.
6. Promote prudent use of natural resources, minimise the production of waste and support re-use and recycling	++	Alternatively fuelled vehicles do not rely so heavily on non-renewable fossil fuels, unlike the traditional combustion engines they are replacing, so there will be a positive effect. This effect would be enhanced if sources of renewable electricity were secured for powering electric vehicles. However batteries for electric vehicles require the extraction of metals for their production which has associated environmental impacts, and there are also issues with hazardous waste when the batteries reach the end of their useful life.
7. Protect and enhance the water environment	+	A slight indirect beneficial effect can be expected as lower carbon emissions will reduce climate change and therefore the risk of extreme rainfall events which can cause flooding and pollution of water courses.

8.	Conserve soil resources and quality and seek to remediate contaminated land	0	There are not expected to be any significant effects with regard to soil resources or contaminated land from measures proposed to de-carbonise transport.
9.	Conserve and, where appropriate, enhance those elements which contribute to the significance of the area's heritage assets, including their setting.	0	There are not expected to be any significant effects with regard to heritage assets from measures to de-carbonise transport.
10.	Protect and enhance the character and quality of landscape and townscape.	++	The street tree planting scheme will have a positive effect on landscape and townscape.
11.	Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking.	++	Initiatives to encourage more walking, cycling and public transport and to reduce the need to travel are expected to have a significant positive effect on reducing traffic and congestion in Leeds. A switch from combustion fuelled vehicles to electric ones is unlikely to affect levels of traffic and congestion.
12.	Maintain or improve the number and range of good quality and accessible employment opportunities.	+	Cities with good sustainable credentials are known to attract businesses looking to locate, therefore measures to decarbonise transport are likely to have a positive effect. Initiatives to make it easier for everyone to access services closer to home are likely to make access to key services more equitable.
13.	Enhance productivity and competitiveness of businesses.	--	There may be a negative impact from the introduction of a low carbon zone without accompanying measures to compensate/incentivise businesses to upgrade their fleet to low carbon vehicles.
14.	Improve health and well-being for all citizens and reduce inequalities in health.	+	Initiatives to make it easier for everyone to access services closer to home are likely to have a positive effect on health and wellbeing. Consideration should be given to increasing the affordability of public transport and cycling to further enhance this benefit.
15.	To promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society.	+	Initiatives to make it easier for everyone to access services closer to home are likely to make access to key services more equitable. Care should be taken to ensure access to alternatively fuelled vehicles and charging infrastructure is fair and covers suburban and rural areas as well as urban parts of Leeds.
16.	Improve road safety and reduce the number of accidents and other incidents.	0	There are not expected to be any significant effects with regard to road safety and accidents from measures to de-carbonise transport.

**BIG MOVE: CREATING HEALTHIER STREETS, SPACES AND COMMUNITIES**

SEA Objective	Assessment Score / Comments	
1. Protect and enhance local air quality.	+	A number of measures in this big move will improve the quality of experience and increase confidence for people wanting to adopt active travel options.
2. To protect and enhance biodiversity, geodiversity and the green infrastructure network	+	There are not expected to be any significant effects with regard to biodiversity from measures proposed in this big move, although there may be a slight positive indirect effect for biodiversity if sufficient modal shift is achieved to reduce the amount of traffic on roads.
3. Protect and enhance the international sites of importance for biodiversity (Habitat Directive sites)	0	There are not expected to be any significant effects with regard to Habitats Directive protected sites as a result of measures proposed under this 'big move'.
4. Reduce carbon dioxide emissions from transport	++	Measures to increase uptake of active travel and reduce congestion will have benefits for carbon emission reduction.
5. Reduce vulnerability to climate change by minimising flood risk and effects from other adverse weather conditions	0	There are not expected to be any significant effects with regard to climate change vulnerability as a result of measures proposed under this 'big move'.
6. Promote prudent use of natural resources, minimise the production of waste and support re-use and recycling	0	There are not expected to be any significant effects with regard to waste and natural resources as a result of measures proposed under this 'big move'.
7. Protect and enhance the water environment	0	There are not expected to be any significant effects with regard to the water environment as a result of measures proposed under this 'big move'.
8. Conserve soil resources and quality and seek to remediate contaminated land	0	There are not expected to be any significant effects with regard to soil and contaminated land as a result of measures proposed under this 'big move'.
9. Conserve and, where appropriate, enhance those elements which contribute to the significance of the area's heritage assets, including their setting.	0	There are not expected to be any significant effects with regard to heritage assets as a result of measures proposed under this 'big move'.
10. Protect and enhance the character and quality of landscape and townscape.	+	? Reducing congestion and improving the active travel environment will have a beneficial impact on townscape and landscape. There is a recognised need to rationalise signage and street furniture on highways schemes, and care should be taken over the placement and design of these to avoid negative effects.

11. Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking.	+++	Measures to provide a safe environment for active travel and reduce congestion will have direct positive effects on road safety.
12. Maintain or improve the number and range of good quality and accessible employment opportunities.	++	An improved active travel network and enhancement of the existing environment for walking and cycling should improve access to employment through sustainable modes.
13. Enhance productivity and competitiveness of businesses.	0	There are not expected to be any significant effects with regard to productivity and competitiveness of business as a result of measures proposed under this 'big move'.
14. Improve health and well-being for all citizens and reduce inequalities in health.	++	Measures that result in greater levels of active travel will result in increased levels of physical activity in the population. These benefits will be maximised in areas that currently have poor environments for active travel.
15. To promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society.	+/-	Measures to improve access through active travel are accessible to all (assuming the measures are distributed equitably throughout the district) and may be particularly beneficial to those without access to a private car. If differential parking measures are introduced to incentivise alternatively fuelled vehicles, those who rely on traditional (combustion engine) vehicles could be negatively affected.
16. Improve road safety and reduce the number of accidents and other incidents.	+++	Adopting the Vision Zero approach is expected to have a significant positive benefit on road safety and accidents.

**BIG MOVE: TRANSFORM THE CITY CENTRE**

SEA Objective	Assessment Score / Comments	
1. Protect and enhance local air quality.	++	A number of measures proposed in this big move aim to restrict private vehicles travelling in the city centre, while improving access for walking, cycling and public transport will have a beneficial effect on air quality in the city centre, although care will need to be taken that problems are not displaced to another area. If the reassessment of freight results in additional water and rail freight this could also have a direct beneficial effect on air quality. A workplace parking levy (if it were introduced) could also encourage higher levels of commuting by more sustainable modes.
2. To protect and enhance biodiversity, geodiversity and the green infrastructure network	++	Proposals to create a network of green spaces will have a positive effect in creating and linking habitats.
3. Protect and enhance the international sites of importance for biodiversity (Habitat Directive sites)	0	There are not expected to be any significant effects with regard to Habitats Directive protected sites as a result of measures proposed under this 'big move'.
4. Reduce carbon dioxide emissions from transport	?	Impact will depend on whether measures to restrict traffic in the city centre result in a net reduction in carbon emissions. If car journeys are replaced by a shift to sustainable modes we can expect a positive impact. If vehicles are instead rerouted around the city centre there may not be any significant improvement, and potentially even an increase in carbon emissions as a result of longer trips.
5. Reduce vulnerability to climate change by minimising flood risk and effects from other adverse weather conditions	++	Creating a network of green spaces around the city should introduce shade and reduce run-off (and flood risk) during extreme weather events.
6. Promote prudent use of natural resources, minimise the production of waste and support re-use and recycling	?	Infrastructure works for the City Centre Gateways will require the use natural resources. It is recommended that a strategic policy be adopted requiring materials for all infrastructure works are sourced responsibly in accordance with BES 6001 Responsible Sourcing of Construction Products.

7. Protect and enhance the water environment	?	Water pollution is increasing in Leeds so opportunities should be sought to improve and upgrade drainage associated with infrastructure works wherever possible to incorporate sustainable drainage systems that can filter out pollutants. The reassessment of water freight in the city should also consider potential mitigations against increased risk of water pollution from freight barges.
8. Conserve soil resources and quality and seek to remediate contaminated land	0	There are not expected to be any significant effects with regard to soil and contaminated land as a result of measures proposed under this 'big move'.
9. Conserve and, where appropriate, enhance those elements which contribute to the significance of the area's heritage assets, including their setting.	?	City Centre Gateways could potentially affect the historic environment in their locality. The impacts could be either positive or negative and will need to be assessed as part of the detailed design.
10. Protect and enhance the character and quality of landscape and townscape.	?	City Centre Gateways could potentially affect townscape. The impacts could be either positive or negative and will need to be assessed as part of the detailed design. There is a recognised need to rationalise signage and street furniture on highways schemes, and care should be taken over the placement and design of these to avoid negative effects.
11. Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking.	+++	Measures in this 'big move' are designed to discourage vehicles from travelling through the congested city centre and to encourage mode shift to walking, cycling and public transport.
12. Maintain or improve the number and range of good quality and accessible employment opportunities.	-	Any potential parking restrictions brought in through a review of our parking strategy could make it more difficult for some people to access employment opportunities unless additional measures are brought in to ensure alternative transport options on routes / areas of employment affected. This would need to be considered as detailed plans are developed, in conjunction with train and bus operators where necessary.
13. Enhance productivity and competitiveness of businesses.	+	Businesses are known to be attracted to cities with a pleasant environment, and measures to transform the city centre and reduce the amount of traffic are likely to have a positive effect.

14. Improve health and well-being for all citizens and reduce inequalities in health.	++	There will be benefits to health and wellbeing through a less congested and quieter environment in the city centre as a result of fewer vehicles. Measures to reduce physical barriers to travel and facilitate more public transport, walking and cycling will also improve health and are available to all travelling into and through the city centre.
15. To promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society.	+++	Measures to improve the city centre environment and improve access and facilities for walking, cycling and public transport will be available to all.
16. Improve road safety and reduce the number of accidents and other incidents.	?	Less traffic in the city centre could reduce the risk of accidents, although this will depend to a large extent on how measures are implemented. Road safety will need to be considered when drawing up plans for specific measures.

**BIG MOVE: ENHANCE PUBLIC TRANSPORT**

SEA Objective	Assessment Score / Comments	
1. Protect and enhance local air quality.	+++	Measures to improve bus services on key corridors and outlying areas currently less well served by PT, and improvement to rail services will provide a good alternative to private car travel in Leeds particularly in combination with measures to discourage private car use in the city centre. Modal shift to sustainable modes will have air quality benefits, particularly if targeted corridors or junctions with known air quality problems are prioritised.
2. To protect and enhance biodiversity, geodiversity and the green infrastructure network	+	Opportunities exist for potential enhancements to biodiversity through bus corridor improvements, e.g. sustainable drainage to filter run-off pollution and landscaping/planting to improve linkages between habitats and migration routes. Similarly, there are opportunities for future park and ride sites to incorporate enhancements for biodiversity into their design through drainage and landscaping. Any resulting reduction in air pollution or carbon emissions from modal shift could have indirect benefits to flora and fauna.
3. Protect and enhance the international sites of importance for biodiversity (Habitat Directive sites)	+	No Habitat Directive sites will be directly affected by the public transport measures proposed, although any resulting reduction in air pollution or carbon emissions could have some indirect benefits.
4. Reduce carbon dioxide emissions from transport	+++	All measures to encourage a switch from private car use to buses and rail will result in a reduction of carbon emissions.
5. Reduce vulnerability to climate change by minimising flood risk and effects from other adverse weather conditions	?	Improvement works to bus corridors offer opportunities to incorporate measures to reduce vulnerability to climate change such as sheltered waiting facilities, enhanced drainage, planting schemes to offer shade and reduce run-off. These should be considered during the detailed design stage.
6. Promote prudent use of natural resources, minimise the production of waste and support re-use and recycling	-	Corridor improvement works and new park and ride sites will require the use natural resources. It is recommended that a strategic policy be adopted requiring materials for all infrastructure works are sourced responsibly in accordance with BES 6001 Responsible Sourcing of Construction Products.

7. Protect and enhance the water environment	?	Improvement works to bus corridors offer opportunities to incorporate measures to reduce water pollution and flood risk by incorporating enhanced sustainable drainage systems.
8. Conserve soil resources and quality and seek to remediate contaminated land	0	There are not expected to be any significant effects with regard to soil resources from proposals in the transport strategy.
9. Conserve and, where appropriate, enhance those elements which contribute to the significance of the area's heritage assets.	0	There are not expected to be any significant effects with regard to heritage assets from measures proposed to enhance public transport.
10. Protect and enhance the character and quality of landscape and townscape.	?	There are potential impacts on townscape and landscape from the implementation of bus corridor improvement works and new park and ride sites. These should be considered further during the detailed design phase.
11. Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking.	+++	There should be significant benefits to road traffic and congestion through measures proposed to enhance public transport.
12. Maintain or improve the number and range of good quality and accessible employment opportunities.	++	Measures to increase accessibility through enhanced public transport are expected to have a beneficial impact on accessibility to employment opportunities.
13. Enhance productivity and competitiveness of businesses.	+++	Measures to increase accessibility through enhanced public transport are expected to have a direct beneficial impact on the productivity and competitiveness of business by providing improved access to staff and customers. Indirect benefits can also be expected from reduced traffic congestion and journey times.

14. Improve health and well-being for all citizens and reduce inequalities in health.	++	Beneficial impacts can be expected from improved access to healthcare by public transport, and from increased physical activity associated with using public transport compared to car use. The baseline environment highlighted particular barriers to accessing healthcare on public transport in northern parts of the Leeds district, therefore care should be taken to ensure enhancements to public transport are equitable throughout the wider district and not only focus on central areas.
15. To promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society.	++	The baseline environment highlighted longer than national average journey times in accessing a number of key services in more rural parts of Leeds. Proposals to promote demand responsive transport should improve this, with priority given to those areas with the poorest current public transport provision to ensure equal access to all.
16. Improve road safety and reduce the number of accidents and other incidents.	?	Uncertain from the information provided how this 'big move' will affect road safety.

**BIG MOVE: NEW MOBILITY SOLUTIONS**

SEA Objective	Assessment Score / Comments	
1. Protect and enhance local air quality.	++	Some minor improvements may be seen in air quality as a result of proposals to develop car clubs, demand responsive transport and multi-modal mobility hubs although these are unlikely to result in a significant shift away from private car use compared to public transport improvements. More significant gains could be made from freight consolidation hubs and the development of water and rail freight, it is recommended that these measures are investigated further as part of the Transport Strategy.
2. To protect and enhance biodiversity, geodiversity and the green infrastructure network	0	There are not expected to be any specific effects with regard to biodiversity, geodiversity or green infrastructure from measures proposed under this 'big move'.
3. Protect and enhance the international sites of importance for biodiversity (Habitat Directive sites)	0	There are not expected to be any specific effects with regard to Habitats Directive protected sites as a result of measures proposed under this 'big move'.
4. Reduce carbon dioxide emissions from transport	+	The measures put forward under this 'big move' will result in reduced carbon emissions, but this is unlikely to be a significant effect.
5. Reduce vulnerability to climate change by minimising flood risk and effects from other adverse weather conditions	0	There are not expected to be any specific effects with regard to climate change vulnerability as a result of measures proposed under this 'big move'.
6. Promote prudent use of natural resources, minimise the production of waste and support re-use and recycling	0	There are not expected to be any specific effects with regard to natural resources or waste as a result of measures proposed under this 'big move'.
7. Protect and enhance the water environment	0	There are not expected to be any specific effects with regard to the water environment as a result of measures proposed under this 'big move'.
8. Conserve soil resources and quality and seek to remediate contaminated land	0	There are not expected to be any specific effects with regard to soil resources as a result of measures proposed under this 'big move'.
9. Conserve and, where appropriate, enhance those elements which contribute to the significance of the area's heritage assets, including their setting.	0	There are not expected to be any specific effects with regard to heritage assets as a result of measures proposed under this 'big move'.

10. Protect and enhance the character and quality of landscape and townscape.	0	There are not expected to be any specific effects with regard to landscape or townscape as a result of measures proposed under this 'big move'.
11. Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking.	++	Positive impacts on road traffic and congestion can be expected as a result of measures that will facilitate travel by public transport or shared mobility. These benefits could be maximised by targeting areas which are most heavily congested.
12. Maintain or improve the number and range of good quality and accessible employment opportunities.	++	Smart measures to make public transport easier and more integrated will help to improve access to employment. Shared mobility and demand responsive measures could also improve access to employment opportunities for those living in areas that are less well served by public transport.
13. Enhance productivity and competitiveness of businesses.	+	There may be indirect beneficial impacts for businesses as a result of measures that facilitate travel to workplaces and enable access to employment for people without access to a car or suitable public transport provision.
14. Improve health and well-being for all citizens and reduce inequalities in health.	0	There are not expected to be any specific effects with regard to health as a result of measures proposed under this 'big move'.
15. To promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society.	++	Demand responsive transport and shared mobility measures may improve accessibility for people without access to a car or who live in areas not well connected by public transport.
16. Improve road safety and reduce the number of accidents and other incidents.	?	Unknown. It is unclear what the impacts of new mobility solutions will be in terms of road safety, but this should form part of the decision making process when trials are being conducted.

**BIG MOVE: DELIVER A MASS TRANSIT SYSTEM**

SEA Objective	Assessment Score / Comments	
1. Protect and enhance local air quality.	+++	Short-term bus service improvements and longer-term development of a zero carbon mass transit system in Leeds could have significant benefits for air quality by reducing the number of vehicles travelling in Leeds, particularly if key congested routes are targeted.
2. To protect and enhance biodiversity, geodiversity and the green infrastructure network	?	Impacts on biodiversity, geodiversity and green infrastructure will be dependant of the specific route / location of new mass transit infrastructure. This will need to be assessed during the detailed design stage. Opportunities could also exist for enhancement of wildlife corridors and provision of new habitat through planting and landscaping schemes.
3. Protect and enhance the international sites of importance for biodiversity (Habitat Directive sites)	0	It is unlikely that a new mass transit system will directly affect the South Pennine Moorland Special Protection Area / Special Area for Conservation at Hawksworth Moor but this will need to be confirmed as detailed plans are drawn up.
4. Reduce carbon dioxide emissions from transport	+++	Short-term bus service improvements and longer-term development of a zero carbon mass transit system in Leeds could have significant benefits for carbon emissions by reducing the number of vehicles travelling in Leeds.
5. Reduce vulnerability to climate change by minimising flood risk and effects from other adverse weather conditions	++ --	It is possible that new mass transit infrastructure could result in additional hard surfacing that may increase the risk of flooding during extreme rainfall events. However opportunities exist for the inclusion of sheltered waiting facilities, enhanced drainage, planting schemes to offer shade and reduce run-off. These should be considered during the detailed design stage.
6. Promote prudent use of natural resources, minimise the production of waste and support re-use and recycling	---	A new mass transit system will require the use natural resources and the production of waste. It is recommended that a strategic policy be adopted requiring materials for all infrastructure works are sourced responsibly in accordance with BES 6001 Responsible Sourcing of Construction Products.
7. Protect and enhance the water environment	?	Significant new infrastructure could potentially increase run off and pollution although opportunities exist to reduce the risk of water pollution and flood risk by incorporating enhanced sustainable drainage systems as part of detailed plans for a mass transit system.
8. Conserve soil resources and quality and seek to remediate contaminated land	?	Impacts on soil resources and contaminated land will be dependant of the specific route / location of new mass transit infrastructure. This will need to be assessed

		during the detailed design stage.
9. Conserve and, where appropriate, enhance those elements which contribute to the significance of the area's heritage assets, including their setting.	--	A new mass transit system is unlikely to conserve or enhance heritage assets, but the degree in the impact will be dependant of the specific route / location of new mass transit infrastructure. This will need to be assessed during the detailed design stage.
10. Protect and enhance the character and quality of landscape and townscape.	--	A new mass transit system is unlikely to protect and enhance landscape and townscape, but the degree of the impact will be dependant of the specific route / location of new mass transit infrastructure. This will need to be assessed during the detailed design stage.
11. Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking.	+++	Short-term bus service improvements and longer-term development of a mass transit system in Leeds should have significant benefits reducing road traffic and congestion.
12. Maintain or improve the number and range of good quality and accessible employment opportunities.	+++	Short-term bus service improvements and longer-term development of a mass transit system are likely to have a beneficial impact of access to employment.
13. Enhance productivity and competitiveness of businesses.	+++	Short-term bus service improvements and longer-term development of a mass transit system will have significant benefits for access to employment opportunities.
14. Improve health and well-being for all citizens and reduce inequalities in health.	++	Beneficial impacts can be expected from improved access to healthcare and from increased physical activity associated with using public transport compared to car use. This positive impact will be maximised if public transport improvements and the mass transit system are accessible to people currently not served well by public transport in Leeds, predominantly the more rural areas to the north and east of the city. There is potential for local noise impacts from a new mass transit which will need to be assessed as detailed plans are developed.
15. To promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society.	?	Equality of opportunity associated with a mass transit system depends on the affordability and accessibility of the route for people currently not well served by public transport. It is too early to assess the impact but will need to be considered as more detailed plans are developed.

### 3.3 Assessment Conclusions and Recommendations

Overall the Connecting Leeds Transport Strategy performs well against the environmental objectives. The Strategy has a strong focus on improving levels of use of public transport, walking and cycling, and on promoting alternatively fuelled vehicles. All of these initiatives have clear environmental benefits in terms of reducing emissions, encouraging more physical activity, reducing congestion, etc. The Strategy also contains a number of infrastructure projects, most notably the Park and Ride scheme and mass transit system, that while will benefits in terms of reducing the number of car journeys in Leeds could also have some potentially significant negative effects with regard to materials and waste, flooding or protected heritage or wildlife sites. Many of these negative impacts can be effectively managed if considered at the early stages of their design, therefore recommendations are made to highlight these issues at an early stage to allow for effective management and/or mitigation. A summary of recommendations to improve the environmental performance of the Transport Strategy is included in table 3.3.

The assessment of significant effects also identified a number of opportunities for the Transport Strategy to provide enhanced environmental effects, these have also been included in table 3.3.

**Table 3.3: Conclusions and recommendations for the Transport Strategy**

SEA Objective	Recommendations
Protect and enhance local air quality.	<p>Although much of the Strategy brings clear benefits in terms of reduced NO<sub>2</sub> and CO<sub>2</sub> emissions, particulate matter (PM) is likely to become a significant issue in Leeds particularly as LCC is proposing to adopt a more stringent standard for particulates. Most PM from road transport is as a result of brake and tyre wear and switching to EVs is not likely to improve this. Therefore priority should be given to measures that encourage greater use of public transport and active travel.</p> <p>When implementing measures to restrict vehicles travelling into the city centre consideration needs to be given to the potential for large volumes of traffic to be displaced to other areas of Leeds, which may result in exceedances of air quality standards.</p> <p>Proposals for developing rail and water freight could bring significant benefits with respect to air quality and it is recommended that these are investigated further as part of the Strategy.</p> <p>Proposals for a freight consolidation centre could bring significant benefits with respect to air quality and it is recommended that these are investigated further as part of the Strategy.</p>
Protect and enhance the international sites of importance for biodiversity (Habitat Directive sites)	<p>Due to the proximity it is possible that a new mass transit system could impact on the South Pennine Moorland Special Protection Area / Special Area of Conservation at Hawksworth Moor. In order to meet the requirements of the Conservation of Habitats and Species Regulations 2017 (as amended) a Habitats Regulations Assessment (HRA) will need to be produced as part of the Environmental Impact Assessment as detailed plans are drawn up.</p>

SEA Objective	Recommendations
<p>To protect and enhance biodiversity, geodiversity and the green infrastructure network</p>	<p>The biodiversity benefits of the street tree planting scheme could be enhanced through careful selection of tree species. Advice should be sought on this as plans for the scheme develop.</p> <p>Opportunities exist for potential enhancements to biodiversity through bus corridor improvements, e.g. sustainable drainage to filter run-off pollution and landscaping/planting to improve linkages between habitats and migration routes. Similarly, there are opportunities for future park and ride sites to incorporate enhancements for biodiversity into their design through drainage and landscaping. It is recommended that consideration is given to the inclusion of biodiversity enhancements as part of the scheme design.</p> <p>Impacts on biodiversity, geodiversity and green infrastructure of the proposed mass transit system will depend on the specific route / location. This will need to be assessed during the detailed design stage. Opportunities could also exist for enhancement of wildlife corridors and provision of new habitat through planting and landscaping schemes.</p>
<p>Reduce carbon dioxide emissions from transport</p>	<p>Elements of the transport strategy which restrict vehicles travelling through the city centre should be supported by alternative modes of transport to encourage mode shift rather than incurring longer journeys.</p>
<p>Reduce vulnerability to climate change by minimising flood risk and effects from other adverse weather conditions</p>	<p>Benefits provided by street tree planting could be enhanced by introducing interconnected tree pits where practicable, e.g. as part of bus corridor improvement works, park and ride, mass transit system, gateway schemes.</p> <p>The Transport Strategy should consider the inclusion of measures to increase shade, reduce run-off and provide more sheltered seating wherever possible as part of infrastructure works or improvements to the public realm.</p> <p>The Transport Strategy should consider the inclusion of measures to reduce vulnerability to climate change such as sheltered waiting facilities, enhanced drainage, and planting schemes to offer shade and reduce run-off as part of infrastructure works or improvements to the public realm.</p>
<p>Promote prudent use of natural resources, minimise the production of waste and support re-use and recycling</p>	<p>Sustainability issues exist around the production and disposal of electric vehicle batteries but this is beyond the scope of the Transport Strategy. Prioritising initiatives to increase patronage of public transport over promoting electric vehicles may reduce the burden on natural resources.</p> <p>Several infrastructure projects included in the Transport Strategy will require the use natural resources and the production of waste. It is recommended that a strategic policy be adopted requiring materials for all infrastructure works are sourced responsibly in accordance with BES 6001 Responsible Sourcing of Construction Products and a suitable construction environmental management plan is adopted to appropriately manage waste.</p>

SEA Objective	Recommendations
Protect and enhance the water environment	<p>Wherever possible new or upgraded drainage systems should incorporate sustainable urban drainage systems that can filter pollution as well as reduce flood risk.</p> <p>Potential proposals to increase water freight in the city will need to consider the potential for pollution from freight barges.</p>
Conserve soil resources and quality and seek to remediate contaminated land	Infrastructure projects such as the proposed park and ride site, bus corridor improvements and mass transit system may involve development of contaminated land. Where contaminated land is being developed the developer will need to arrange for the clean-up of the land as part of the plans.
Conserve and, where appropriate, enhance those elements which contribute to the significance of the area's heritage assets, including their setting.	Projects proposed as part of the Transport Strategy, including gateway schemes, P&R, mass transit and bus corridor improvements, should be designed in accordance with design principles set out in the Leeds Our Spaces Strategy and the National Design Guide/National Model Design Code to ensure best design with regard to protecting or enhancing heritage assets.
Protect and enhance the character and quality of landscape and townscape.	<p>Projects proposed as part of the Transport Strategy (including gateway schemes, P&amp;R, mass transit and bus corridor improvements) should be designed in accordance with design principles set out in the Leeds Our Spaces Strategy and the National Design Guide/National Model Design Code to ensure best design with regard to protecting or enhancing landscape and townscape.</p> <p>When designing schemes attention should be taken to rationalising street furniture and signage to minimise impacts on the character of the local area.</p>
Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking.	<p>Positive impacts on road traffic and congestion from many elements of the Transport Strategy could be maximised by targeting corridors or junctions which are most heavily congested.</p> <p>Prioritising measures to increase use of public transport will achieve greatest benefit in terms of congestion (as opposed to encouraging a switch to alternatively fuelled vehicles).</p>
Maintain or improve the number and range of good quality and accessible employment opportunities.	A parking strategy review may make access to employment more difficult for people currently dependant on private cars. Many of the impacts will depend on details of implementation but measures should be supported by ensuring appropriate journey alternatives are available in terms of affordability and public transport provision (particularly in rural areas).
Enhance productivity and competitiveness of businesses.	The introduction of a low carbon zone should be supported by additional measures to incentivise businesses to upgrade their fleet and avoid financial penalty or competitive loss against operating in other cities.

SEA Objective	Recommendations
Improve health and well-being for all citizens and reduce inequalities in health.	<p>Measures to increase levels of active travel will be most beneficial if at areas that currently have poor existing facilities.</p> <p>The baseline environment highlighted particular barriers to accessing healthcare on public transport in northern parts of the Leeds district - care should be taken to ensure improvements in public transport are equitable throughout the wider district and not focus solely on central areas.</p> <p>Localised noise impacts may arise from infrastructure projects such as P&amp;R, corridor improvements, mass transit and gateway schemes, particularly in residential areas. These will need to be assessed during the design stage and potential requirements for noise insulation be taken into account.</p>
To promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society.	<p>Need to ensure access to electric vehicles and charging infrastructure is fair, being affordable for all and covers more rural parts of Leeds as well as urban areas.</p> <p>Differential parking charges could be unfair to those reliant on older vehicles. Consideration should be given to subsidising EV parking rather than financially penalising owners of older vehicles.</p> <p>When designing schemes attention should be taken to rationalising street furniture and signage to minimise impacts that may impede accessibility, including for people using wheelchairs or pushchairs.</p> <p>Public transport improvements and the mass transit system should serve people in all areas of Leeds, including places currently not served well by public transport in Leeds.</p>
Improve road safety and reduce the number of accidents and other incidents.	Road safety will need to be considered on a case-by-case basis for all Transport Strategy initiatives as detailed plans are developed.

In addition to recommendations relating to the SEA objectives, the following procedural recommendations are also made to ensure appropriate ongoing consideration of the Transport Strategy's environmental effects:

Procedure	Recommendations
Implementation Plans and detailed scheme design	A number of significant environmental effects identified through the SEA are dependent on the details of how the Strategy is implemented, including the detailed design of schemes that stem from the Strategy. A mechanism should be put in place for to ensure that the recommendations given in this assessment are considered during the development all schemes or implementation plans originating in the Transport Strategy.
Monitoring	SEA monitoring should be included as an integral part of the Transport Strategy's own monitoring and evaluation process.

#### 4. MONITORING

The SEA Regulations require a framework to be established to monitor the predicted significant effects and to identify any unforeseen significant effects. It is recommended that the monitoring framework for the SEA is incorporated into the Transport Strategy's proposed monitoring and evaluation process and should include a review of the environmental baseline and monitoring of significant effects.

Table 4.1 includes those SEA objectives identified as having a potentially significant effect (i.e. those with a moderate or major effect) along with an indicative list of indicators and targets to be included in the monitoring arrangements. These indicators can be refined as the monitoring and evaluation process is developed.

**Table 4.1: Proposed monitoring framework**

SEA Objective	Indicators to be used	Targets
1. Protect and enhance local air quality	Nitrogen dioxide and PM10 levels in AQMAs and on major roads	Reduce
	Take up of Electric Vehicles	Increase
	Traffic levels with focus on private car and HGV use and goods vehicles entering Leeds city centre and key town centres	Reduce
	Use of Sustainable modes of transport with a focus on levels of cycling and walking	Increase
2. To protect and enhance biodiversity, geodiversity and the green infrastructure network	Length of greenways / blueways or other sustainable transport routes	Increase
	Area of new planting of native species of wildflowers and other species suitable for screening	Increase
	Area of invasive / non-native species appropriately treated / cleared / remediated	Increase
	Number of street lamps with a downward beam	Increase
	Number of Transport schemes located within designated areas	Zero
4. Reduce carbon dioxide emissions from transport	As indicators for Objective 1, plus CO2 emissions from vehicles on major roads	Reduce
5. Reduce vulnerability to climate change by minimising flood risk & effects from other adverse weather conditions	Number of new transport schemes in flood risk areas	Zero
	Number of new transport schemes with improved drainage standards / use of SuDS	Increase
	% of floodplain changing due to new/planned transport related schemes	Zero
	Number of new transport schemes integrated with green infrastructure (green corridors and spaces)	Increase
	Number of street trees providing shade	Increase
	Number of sheltered bus stops, etc.	Increase
6. Promote prudent use of natural resources, minimise the production of waste and support re-use and recycling	Proportion of recycled materials used in transport related construction	Increase
	Number of locations for refuse and recyclables with improved accessibility	Increase
9. Conserve and, where appropriate, enhance those elements which contribute to the significance of the area's heritage assets, including their setting.	Proportion of transport schemes actively demonstrating consideration of their historic setting / assets.	Increase

SEA Objective	Indicators to be used	Targets
10. Protect and enhance the character and quality of landscape and townscape	Changes in landscape and waterscape character (under development as an outcome indicator for the government's 25 year Environment Plan)	Improving
11. Reduce road traffic and congestion through reducing the need to travel by car and improve and promote sustainable modes of transport including public transport, cycling and walking	Access to public transport services and facilities (including walking and cycling facilities)	Increase
	Number of cycling and walking journeys	Increase
	Public transport punctuality and service reliability	Increase
	Number of initiatives to improve access by sustainable transport modes to essential facilities	Increase
	Number of improvement schemes for pedestrian and cycle routes and green networks, including the RoW network	Increase
	Traffic levels with focus on private car and HGV use and goods vehicles entering Leeds city centre and key town centres	Reduce
12. Maintain or improve the number and range of good quality and accessible employment opportunities	Number of transport options serving employment hotspots	Increase
13. Enhance productivity and competitiveness of businesses	Number of transport options across Leeds which allow better access to employment opportunities	Increase
14. Improve health and well-being for all citizens and reduce inequalities in health	Personal security and number of crimes on public transport	Reduce
	Number of households exposed to high levels of transport noise	Reduce
15. To promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society	Disability Discrimination Act compliance of bus stops, bus vehicles and rail stations	Increase
	Journey times by public transport to key services by ISOA	Reduce
16. Improve road safety and reduce the number of accidents and other incidents	Number of casualties from road accidents	Reduce
	Number of people killed or seriously injured in road accidents	Reduce

## **5. CONSULTATION ON THE DRAFT ENVIRONMENTAL REPORT**

The Draft Environmental Report was published for formal consultation alongside the Draft Leeds Transport Strategy. The outcomes of the consultation exercise and any resultant changes made to either the Draft Transport Strategy or the Environmental Report will be reported in the Post Adoption Statement.

## **6 POST ADOPTION STATEMENT**

Following completion of the public consultation and preparation of the final Connecting Leeds Transport Strategy document, a statement will be prepared setting out the following:

- How environmental considerations have been integrated into the plan, for example any changes to or deletions from the plan in response to the information in the Environmental Report.
- How the Environmental Report has been taken into account in the Transport Strategy.
- How consultation responses have been taken into account including how the Transport Strategy was changed to take account of issues raised, or why no changes were made.
- The reasons for choosing the Transport Strategy as adopted in the light of other reasonable alternatives dealt with.
- The measures that are to be taken to monitor the significant environmental effects of implementation of the Transport Strategy.