Sheffield City Region Combined Authority

Sheffield City Region Transport Strategy 2018 - 2040

Integrated Assessment Environmental Report

Issue | 2 October 2017

Job number 252722-00

Ove Arup & Partners Ltd
9th Floor 3 St Paul's Place
Norfolk Street
Sheffield S1 2JE
United Kingdom
www.arup.com

ARUP

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Non-Technical Summary

Introduction

This document is the updated Environmental Report that was originally published in April 2011 and focused on the 2011 Sheffield City Region (SCR) Transport Strategy. This update forms the Integrated Assessment (IA) of the 2018 SCR Transport Strategy (2018-2040), which is a refresh of the 2011 Transport Strategy. It builds on the previous Strategic Environmental Assessment (SEA) from 2011, and sets out what the issues are and the likely significant effects of implementing the 2018 Transport Strategy.

The statutory requirement for producing the Environmental Report is that it should accompany the final version of the Sheffield City Region (SCR) Transport Strategy (2018) and be made available for consideration by all parties. This report should therefore be read in conjunction with the 2018 SCR Transport Strategy.

This IA incorporates four key assessments:

- Strategic Environmental Assessment (SEA)
- Sustainability Appraisal (SA)
- Equalities Impact Assessment (EqIA)
- Health Impact Assessment (HIA)

The evidence provided within this report has been based on the 2011 Environmental Report, which has been updated through assessment of the 2018 Transport Strategy. The scope to refresh the Transport Strategy was high level, and a similar high level approach has been taken to update the Environmental Report. It should be made clear that the assessment objectives have not been changed from the 2011 Environmental Report and that this assessment and its supporting appendices draw on much of the underlying evidence base that supported the 2011 work, with this being considered an appropriate approach by Sheffield City Region in the context of the scope of the Transport Strategy refresh.

The Sheffield City Region Transport Strategy

The existing SCR Transport Strategy was published in 2011, and describes the transport priorities for SCR for the 15 year period up to 2026. Since then, SCR have made a successful devolution deal with Government and have worked hard to develop the SCR Inclusive Industrial Strategy, which is their strategic plan for economic growth to 2040. In light of this development in regional policy, it is necessary to refresh the Transport Strategy so that it aligns with, and supports the Inclusive Industrial Strategy, as well as wider national and pan-Northern policy that has been developed in the last seven years. Furthermore, the rate of technological change over the last decade has been unprecedented, which means that SCRs opportunities, challenges and possible solutions have changed. This

refresh of the Transport Strategy will make SCR more prepared and better able to achieve their regional ambitions in a coordinated and coherent manner.

The Transport Strategy (2018) updates and supersedes the policies and measures of the previous SCR Transport Strategy (2011). It forms part of the Local Transport Plan (LTP) for South Yorkshire (as a Local Transport Body) and is adopted by the SCR Combined Authority.

The goals and policies of the Transport Strategy apply to South Yorkshire as part of its LTP. It also covers the wider SCR, which functions as a coherent economic area. Nottinghamshire and Derbyshire County Councils also have their own regional Transport Strategies, and therefore there is a degree of geographical overlap between all three regional strategies.

This IA has been produced alongside the 2018 SCR Transport Strategy. Due to the interactive nature of the IA process it is important to demonstrate that the IA process has been undertaken throughout, and contributed to, the development of the SCR Transport Strategy.

The Environmental Report of the 2018 SCR Transport Strategy

An SEA is required by European Directive 2001/42/EC (Strategic Environmental Assessment Directive) *"on the assessment of the effects of certain plans and programmes on the environment"*. The purpose of the SEA is to ensure that environmental effects are understood and considered. The assessment also identifies opportunities to improve environmental quality and mitigate any negative effects within the plan or programme. In this case, the 'plan' is the 2018 SCR Transport Strategy.

SEA is a process which ensures environmental impact is considered at the formation of plans stage (i.e. the strategic level). SA does the same, but it takes in a broader scope of impacts, looking at the economy and local communities/wider society as well as the environment (i.e. the assessment headings looked at under the banner of sustainability). For the purposes of the IA, the SEA includes the SA scope of appraisal.

There are set stages within the SEA process. These include:

- collecting baseline information;
- identifying sustainability issues;
- establishing appraisal objectives;
- developing strategic alternative;
- predicting the effects of the plan;
- evaluating the effects of the plan;
- considering ways of mitigating adverse effects; and
- proposing measures to monitor the environmental effects of the Plan.

The IA that has been prepared, follows the SEA process in order to ensure that the above stages are all adequately covered.

The SEA Scoping Report was adopted in September 2010 by the South Yorkshire Local Transport Strategy Partnership. The Scoping Report forms the base line information for the appraisal process, and includes the ten SEA objectives in Table A.

Table A Transport Strategy IA objectives (SEA Scoping report)

No.	SEA Objective
1	Protect and enhance our environmental heritage
2	Minimise use and loss of environmental resources
3	Improve Air Quality
4	Support a managed response to climate change and reduce greenhouse gas emissions
5	Maximise access to jobs, training and skills and other services
6	Support economic growth and the creation of jobs within transport related sectors
7	Increased levels of physical activity
8	Improved road safety, reduced levels of transport related crime and reduced fear of crime
9	Improve Local Amenity
10	Transport interventions benefit everyone

The SEA Directive requires that information on the likely significant effects on the environment must be provided in the assessment report and Annex 1(f) of the Directive provides a list of specific environmental issues to be addressed.

Table B sets out these SEA environmental issues and how the relevant Transport Strategy SEA Scoping report objectives address them.

Table B SEA environmental issues and coverage by the IA Objectives

SEA Environmental Issues	Relevant IA objective
Biodiversity	Objectives: 1
Population	Objectives: 7, 8, 9
Human Health	Objectives: 7, 8, 9
Fauna	Objectives: 1
Flora	Objectives: 1
Soil	Objectives: 2, 4
Water	Objectives: 2, 4
Air	Objectives: 3
Climatic Factors	Objectives: 4, 3
Material Assets	Objectives: 5, 6, 10
Cultural Heritage	Objectives: 1
Landscape	Objectives: 1

The Sheffield City Region Combined Authority decided that this assessment should include Equalities, Health and Social considerations. Therefore, an

Equalities Impact Assessment (EqIA) and Health Impact Assessment (HIA) are addressed in this IA.

The EqIA is not about treating everybody the same. Equality means making sure that the individual needs of different people and different communities are taken into account. Therefore, the likely impacts and barriers to the following groups have been considered:

- race/ethnicity;
- gender;
- disability;
- age;
- faith/religious or other beliefs;
- sexual orientation; and
- other groups who might not have equal access to services.

The HIA makes sure that health and well-being are included into national policy. It is important to understand that any plan or project could potentially have an impact on health. Many social or environmental factors can influence health for instance:

- poverty, unemployment, poor housing, crime, low educational attainment, social exclusion;
- agricultural and transport policies, and environmental issues, such as air
- pollution; and
- sustainable development issues in terms of health.

Recommendations

The Likely Significant Effects of the Transport Strategy

This assessment has demonstrated that in some instances, it is impossible to predict the effects of the plan with a degree of certainty and some assumptions have been made in relation to the timescales associated with climate change, air quality, economic growth and loss of environmental resources (namely minerals).

Whilst the majority of the transport policies have performed well against the IA objectives there are a few policies which have the potential to perform negatively against some of the objectives. This Environmental Report makes a number of policy recommendations as part of the final appraisal. The purpose of these recommendations are to help the Transport Strategy further improve, and these include the following:

- It is recommended that a policy matrix is established which considers the overlapping and feedback nature of specific policies within different policy ‘goals’.

- Historic and natural assets within the City Region are sensitively incorporated into any resultant policy proposals arising following the SCR Transport Strategy. Mitigation could include linkages to Policy 9 which would encourage all effects to be addressed through the Town Planning and Environmental Impact Assessment (EIA) processes.
- Impacts of targeted infrastructure interventions, particularly within the Integrated Infrastructure Packages, should be assessed against the EIA, Town Planning and Habitats Directive legislation (Policy 9).
- Effects of improved transport accessibility on air quality should be addressed through links to Policy 7, which seeks to actively improve air quality particularly in designated Air Quality Management Areas (AQMAs).
- Impacts on climate change should be addressed through connection to Policy 8, which seeks to actively reduce the impact on climate change.
- Linkages to Policy 4 and Policy 9 would ensure that temporary negative effects of construction of transport interventions is addressed through place-making and planning principles.
- Local employment requirements could be conditioned to the delivery of targeted infrastructure interventions.
- Introduction of low carbon technologies and public transport to be targeted towards reducing the use and loss of environmental resources, minimising climate change and minimising the effects on air quality within the City Region, both during construction of interventions and throughout operation.
- Negative effects on amenity from the delivery of transport interventions in the short term should be mitigated through good construction management and planning conditions.
- Emphasis should be placed on designing out opportunities for crime or the fear of crime on all modes of transport promoted through the Transport Strategy.
- Ensure low carbon transport networks are targeted towards reducing the use and loss of environmental resources, minimising climate change and minimising the effects on air quality within the City Region, both during construction of interventions and throughout operation.

The Transport Strategy needs to consider the Habitats Directive Legislation in order to ensure that future associate major transport interventions consider their impact on nationally and internationally designated sites (which include Thorne and Hatfield Moors as well as the Peak District National Park) together with wildlife corridors.

This IA appraisal will not meet or address the requirements of the 1992 Habitats Directive1. A separate report on the information to inform a Habitats Regulation Assessment also accompanies the IA and Transport Strategy.

[1] Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.

1 Introduction

1.1 This Environmental Report

This update on the 2011 Environmental Report has been prepared by Ove Arup and Partners ("Arup") on behalf of Sheffield City Region Combined Authority.

This document is the updated Environmental Report that was originally published in April 2011 and focused on the 2011 Sheffield City Region (SCR) Transport Strategy. This update forms the Integrated Assessment (IA) of the 2018 SCR Transport Strategy (2018-2040), which is a refresh of the 2011 Transport Strategy. It builds on the previous Strategic Environmental Assessment (SEA) from 2011, and sets out what the issues are and the likely significant effects of implementing the 2018 Transport Strategy.

The statutory requirement for producing the Environmental Report is that it should accompany the final version of the Sheffield City Region (SCR) Transport Strategy (2018) and be made available for consideration by all parties. This report should therefore be read in conjunction with the 2018 SCR Transport Strategy.

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The evidence provided within this report has been based on the 2011 Environmental Report, which has been updated through assessment of the 2018 Transport Strategy. The scope to refresh the Transport Strategy was high level, and a similar high level approach has been taken to update the Environmental Report. It should be made clear that the assessment objectives have not been changed from the 2011 Environmental Report.

1.2 Strategic Environmental Assessment and Sustainability Appraisal

An SEA is required by European Directive 2001/42/EC (Strategic Environmental Assessment Directive) *"on the assessment of the effects of certain plans and programmes on the environment"*. The purpose of the SEA is to ensure that environmental effects are understood and considered. The assessment also identifies opportunities to improve environmental quality and mitigate any negative effects within the plan or programme. In this case, the 'plan' is the 2018 SCR Transport Strategy.

SEA is a process which ensures environmental impact is considered at the formation of plans stage (i.e. the strategic level). SA does the same, but it takes in a broader scope of impacts, looking at the economy and local communities/wider society as well as the environment (i.e. the assessment headings looked at under

the banner of sustainability). For the purposes of the IA, the SEA includes the SA scope of appraisal.

Table 1.1 sets out the various stages which have been carried out as part of the SEA process. Stage A was carried out for the 2011 Environmental Report, whereas the subsequent stages have been updated for this version.

Table 1.1: Incorporating the SEA within the Transport Strategy Process

Number	Assessment Stage
Stage A: Setting the background, current situation and deciding on the range of the report.	
A1	Identifying other relevant policies, plans, programmes and environmental protection objectives.
A2	Collecting information on the current environmental, social and economic situation.
A3	Identify the environmental, social and economic issues which may exist at present.
A4	Develop and produce a draft list of Objectives.
A5	Consult for a period of five weeks on the Scoping Report.
Stage B: Developing and refining alternatives and assessing effects	
B1	Testing the Transport Strategy objectives against the SEA objectives.
B2	Set out the other alternatives to producing the new Transport Strategy.
B3	Predict what the effects of the new Transport Strategy will be.
B4	Evaluate what the likely effects of the new Transport Strategy will be.
B5	Consider ways in which any harmful effects can be lessened and favourable effects can be taken advantage of.
B6	Suggest measures to monitor the significant effects of putting the Transport Strategy in to action.
Stage C: Prepare the Strategic Environmental Assessment Report	
C1	Produce the Draft Environmental Report.
Stage D: Consulting on the Local Transport Strategy and Environmental Report	
D1	Consult with the general public and other consultation organisations on the Draft Transport Strategy and the Environmental Report.
D2	Collect and record all consultation responses. Take into account any significant changes which are suggested as a result of the consultation stage.
D3	Provide information about how the Transport Strategy and Environmental Report have taken into account the opinions of the people who were consulted in deciding the final version of the two reports.
Stage E: Monitor the significant effects of implementing the plan on the environment.	
E1	Develop ways of monitoring the Transport Strategy and Strategic Environmental Assessment and decide who will be responsible for the monitoring stage.
E2	During monitoring respond to any negative effects of the Transport Strategy.

1.3 The SEA Scoping Report

In May 2010 a SEA Scoping Report was produced by Doncaster Metropolitan Borough Council (DMBC) on behalf of the South Yorkshire Local Transport Strategy Partnership. This was the first stage of the SEA process for the 2011 Transport Strategy. The Scoping Report was distributed to the three statutory consultees – Natural England, Environment Agency, English Heritage and the four South Yorkshire local authorities as well as other interested stakeholders such as the Campaign to Protect Rural England (CPRE). The comments and recommendations from the consultation process were incorporated into the Scoping Report. The Scoping Report was endorsed by the partnership and adopted in September 2010. The updated information contained in the adopted Scoping Report has been used to inform this Environmental Report.

The Scoping Report and the objectives shown in Table 1.2 were used to assess the policies contained in the 2011 Transport Strategy and have since been used for this IA of the 2018 Transport Strategy.

Table 1.2 Transport Strategy IA objectives (SEA Scoping report)

No.	SEA Objective
1	Protect and enhance our environmental heritage
2	Minimise use and loss of environmental resources
3	Improve Air Quality
4	Support a managed response to climate change and reduce greenhouse gas emissions
5	Maximise access to jobs, training and skills and other services
6	Support economic growth and the creation of jobs within transport related sectors
7	Increased levels of physical activity
8	Improved road safety, reduced levels of transport related crime and reduced fear of crime
9	Improve Local Amenity
10	Transport interventions benefit everyone

The SEA Directive requires that information on the likely significant effects on the environment must be provided in the assessment report and Annex 1(f) of the Directive provides a list of specific environmental issues to be addressed.

Table 1.3 sets out these SEA environmental issues and how the relevant IA objectives address them.

Table 1.3 SEA environmental issues and coverage by the IA Objectives

SEA Environmental Issues	Relevant IA objective
Biodiversity	Objectives: 1
Population	Objectives: 7, 8, 9
Human Health	Objectives: 7, 8, 9
Fauna	Objectives: 1
Flora	Objectives: 1
Soil	Objectives: 2, 4
Water	Objectives: 2, 4
Air	Objectives: 3
Climatic Factors	Objectives: 4, 3
Material Assets	Objectives: 5, 6, 10
Cultural Heritage	Objectives: 1
Landscape	Objectives: 1

2 The 2018 Transport Strategy

2.1 Overview

The existing SCR Transport Strategy was published in 2011, and describes the transport priorities for SCR for the 15 year period up to 2026. Since then, SCR have made a successful devolution deal with Government and have worked hard to develop the SCR Inclusive Industrial Strategy, which is their strategic plan for economic growth to 2040. In light of this development in regional policy, it is necessary to refresh the Transport Strategy so that it aligns with, and supports the Inclusive Industrial Strategy, as well as wider national and pan-Northern policy that has been developed in the last seven years. Furthermore, the rate of technological change over the last decade has been unprecedented, which means that SCRs opportunities, challenges and possible solutions have changed. This refresh of the Transport Strategy will make SCR more prepared and better able to achieve their regional ambitions in a coordinated and coherent manner.

2.2 The Vision, Goals and Policies of the Transport Strategy

The vision of the 2018 SCR Transport Strategy is:

By 2040 we will be a forward-looking City Region with integrated transport connections that support economic growth and improve quality of life for all.

The goals of the 2018 SCR Transport Strategy are to:

1. support inclusive economic growth;
2. create healthy streets where people feel safe;
3. improve the quality of our outdoors; and
4. promote, enable and adopt different technologies.

The vision and goals have been assessed against the adopted IA objectives as part of Stage B1. The full assessments of the Transport Strategy vision and goals are available in Appendix E, including recommendations. This part of the assessment identifies any synergies or tensions and can help in the refinement of the goals for the Transport Strategy.

The policies of the 2018 SCR Transport Strategy are shown in Table 1.4.

Table 1.4 Transport Strategy Policies

Goal	Policy
Support inclusive economic growth	1. Improve access to jobs, markets, skills and supply chains 2. Enhance productivity by making our transport system faster, more reliable and more resilient 3. Invest in integrated packages of infrastructure to unlock growth and support Local Plans
Create healthy streets where people feel safe	4. Make our streets healthy and people feel safe 5. Enhance our multi-modal transport system which encourages sustainable travel choices and is embedded in the assessment of transport requirements for new development, particularly for active travel 6. Improve sustainable and inclusive access to our green and recreational spaces
Improve the quality of our outdoor	7. Actively improve air quality, especially in designated AQMAs 8. Deliver a low carbon transport network, including a zero carbon public transport network 9. Work in tandem with the planning and development community to create attractive places
Promote, enable and adopt different technologies	10. Be at the forefront of transport innovation 11. Enable different solutions to create a fully integrated transport and inclusive service 12. Adopt technology solutions to stimulate change

These policies have been assessed against the adopted IA objectives as part of Stages B3 and B4. The full assessments of the Transport Strategy policies are available in Appendix G, including recommendations.

2.3 The Transport Strategy in Relation to Other Strategies

The 2018 Transport Strategy updates and supersedes the policies and measures of the previous 2011 SCR Transport Strategy. It forms part of the Local Transport Plan (LTP) for South Yorkshire (as a Local Transport Body) and is adopted by the SCR Combined Authority.

The goals and policies of the Transport Strategy apply to South Yorkshire as part of its Local Transport Plan (LTP). It also covers the wider SCR, which functions as a coherent economic area. Nottinghamshire and Derbyshire County Councils

also have their own regional Transport Strategies, and therefore there is a degree of geographical overlap between all three regional strategies.

This IA has been produced alongside the 2018 SCR Transport Strategy. Due to the interactive nature of the IA process it is important to demonstrate that the IA process has been undertaken throughout, and contributed to, the development of the SCR Transport Strategy.

A full review of all other relevant plans, programmes and environmental objectives has been completed (Appendix A). The initial baseline review was completed for the 2011 Transport Strategy and this was then updated for the 2018 Transport Strategy to ensure any documents that had been updated or superseded were captured and then were reflected through the Environmental Report.

2.4 Technical Difficulties in Carrying out the Assessment

The nature of national guidance and policy results in a constant evolution and therefore many strategies that have been reviewed, have been produced at different times and in some instances do not reflect comparable time periods. This may result in some gaps in the base line information which has been collected.

There is the danger of prioritising only economic, social or environmental interests, rather than balancing the needs of all three interests. In areas such as South Yorkshire, economic regeneration has, understandably, been seen as a key priority. However, it is essential that such regeneration takes place in such a way as to achieve win-win-win scenarios across all three sustainability topic areas.

3 Setting the Context and Establishing the Baseline.

3.1 The Baseline Situation

The Baseline situation identifies and collects existing information (quantitative and qualitative) on the current environmental, social and economic situation. This information also provides the basis for forecasting and monitoring environmental effects and is often referred to as the Baseline Information Stage (Stage A1 – A5).

Baseline information has been collected for the area and can be found in Appendices 1 and 2 of this report. This information includes a full review of other relevant plans and programmes, a description of the main issues, data indicators and mapped information and has been added to and improved through the consultation process (with statutory consultees and other stakeholders) of the adopted SEA Scoping Report.

This information has been used to carry out this IA.

3.2 Environmental Problems and Opportunities

At this point, the information which was collected during stages A1 and A2 of the appraisal has been used together to identify what the key environmental, social and economic issues are for the South Yorkshire area, as part of assessment stage A3. A detailed description of these issues can be found in Appendix C and they are summarised below.

3.2.1 Environmental Issues

1. Avoiding impacts on statutory designations for nature conservation and cultural heritage
2. The protection of environmental resources
3. Providing resilience to climate change and flooding

3.2.2 Economic Issues

1. Limited interconnectivity with SCR
2. Localised transport deficiencies
3. The affordability of public transport
4. Potential growth in the transport sectors

3.2.3 Social Issues

1. Impacts on health and quality of life from traffic
2. The provision of sustainable transport to meet the housing supply

3. Maintaining public safety on transport
4. Providing enough public transport to meet the needs of all ages
5. Providing enough accessible transport for the less able
6. Preventing cultural barriers to the use of transport modes
7. Promoting active travel options including green infrastructure

3.3 Developing the IA Objectives

Each of the issues identified as part of stage A3 have been used together with the review of plans and programmes and baseline information to produce the IA objectives as set out in Table 1.2 from the SEA Scoping Report.

The IA objectives have also been checked against each other to identify, reduce and if possible, remove any areas of irregularity or conflict and ensure compatibility. This process was carried out as part of the Scoping Report stage.

These objectives have formed the framework with which, the environmental, economic and social effects of the Transport Strategy have been described, assessed and compared.

For each objective, a set of indicators have been identified this will help monitor the performance of the Transport Strategy and any associated environmental effects identified in this Environmental Report, included in Appendix D.

4 Developing and Identifying Alternatives

4.1 Appraisal of the Transport Strategy Vision and Goals

Within the original Transport Strategy which was prepared in 2011, the vision and goals were assessed against the SEA objectives. Overall, it was concluded that the Strategic Vision was compatible with the ten SEA objectives. The 2018 Transport Strategy has included an assessment of the vision and goals against the IA objectives, which have been carried forward from the previous SEA. The assessment highlights that the vision and goals are broadly compatible with the objectives, which is shown in detail in Appendix E.

The ethos of the refreshed 2018 Transport Strategy continues to favour a balanced approach to provision of transport across SCR, respecting the outcome of the previous alternatives appraisal process. The refreshed Strategy focuses on setting out the policy position of SCR; it does not advocate schemes and further work will be undertaken to develop an implementation plan. As part of this, further consideration will be given to potential alternatives and the impacts of these will be considered through further IA work and Environmental Impact Assessments (EIAs) as appropriate.

At this stage, no new alternatives have been proposed and the following section has been reviewed and updated to bring in line with the 2018 Transport Strategy.

4.2 Appraisal of Strategic Alternatives

The SEA Directive and the NATA guidance require the development of 'reasonable' alternatives. The purpose of this approach is to demonstrate the different ways of fulfilling the plan's objectives, and what the likely outcomes of the various alternatives will be. For this assessment, various alternatives were developed on the basis of a round table discussion in April 2010 taking into consideration the current transport situation in South Yorkshire, and SCR. These are still considered to be appropriate alternatives for the 2018 refresh of the Transport Strategy.

For the purposes of this study the following options were considered:

1. No refresh of the 2011 Transport Strategy
2. Develop a Transport Strategy with a robust approach to public transport
3. Develop a Transport Strategy with a robust approach to Highway Interventions.

Alternative 1 represented no change to the existing situation (business as usual) without the development of a refreshed Transport Strategy, but relying upon the existing Local Transport Plan. When this option was assessed against the SEA objectives it was found that once the plan was out of date other strategies and legislation would seek to reduce the need to travel, reduce vehicle emissions and improve air quality. However, without a refreshed Transport Strategy there would

be no sub-regional strategic overview on transport issues. Interventions to maximise public transport use, improve the network function of the highway, protect and improve the natural environment, ensure equality of opportunity, promote the regional economy and tackle deprivation will not be delivered with this alternative.

Alternative 2 (Public Transport Interventions) represented taking forward a refreshed Transport Strategy, which would facilitate strong growth and support of the public transport system. When this alternative was assessed against the SEA objectives it was found that this alternative may help to deliver increased use of public transport and healthier travel choices. However, it would be unrealistic to expect all journeys to be made by public transport, and so, some car use is likely to continue and without measures to manage this, there are likely to be lost opportunities (such as promoting car sharing) as well as a failure to address issues such as road safety.

Alternative 3 (Highway Interventions) represented taking forward a refreshed Transport Strategy, which would favour support for strategic highway interventions. When this alternative was assessed against the SEA objectives it was found that this alternative would result in a more efficient highway network, reductions in congestion, improved road safety for all road users (including cyclists) and promote the creation of jobs within such sectors as logistics. However, more importantly, it was found that issues of inequalities, and mobility of those without access to private cars, are unlikely to be addressed, meaning that deprived communities may be unable to access educational, employment, health and cultural opportunities. The wider implications are, that Council strategies to address such issues as deprivation will be undermined. However, to have a scenario purely based upon highways interventions (in relation to Air Quality) would be contrary to government policy and legislation (Climate Change Act 2008).

4.3 Preferred Alternative

The assessment of the various alternatives and their performance is presented in Appendix F. It is not the role of the IA to decide which alternative should be chosen, but to reflect the overall sustainability of each alternative. This approach will aid in the decision making process.

The assessment of the alternatives indicated that overall, alternative 1 ‘business as usual’ would no longer deliver the region’s long term challenges to address such significant issues as climate change, air quality, regeneration, equalities and deprivation. The appraisal of alternative 2 demonstrated that this choice could potentially have more positive results in addressing air quality, climate change, access to jobs, support for the economy, physical activity, improving road safety and fear of crime, improve local amenity and equalities and deprivation. Alternative 3, whilst having the potential to score positively against improving road safety, fear of crime, improve local amenity, and support for the economy would not address important issues such as climate change, environmental protection, equalities, health and well-being.

5 Detailed Policy Appraisal and Recommendations

5.1 How the Assessment was Undertaken

Policies within the 2018 Transport Strategy are collated under the four Transport Strategy goals.

The terminology for assessment, set out in Table 4.1 and applied in the assessment matrices in Appendix F, focusses on effects, which is consistent with the terminology within the SEA directive. To assess the extent of the effect of the proposed SCR Transport Strategy policy, the terminology for assessment was applied alongside a level of subjective professional judgement to quantify and express what the effects of the policies in the Plan will be.

Table 4.1 Definitions of Terminology

Effect	Notation
Major positive effects	++
Mainly positive effects	+
Neutral effects	0
The effects are uncertain	?
Positive and negative effects	+/-
Mainly negative effects	–
Major negative effects	--

Combined symbols are sometimes used in the assessment, for example (+/?) or (-/?). This represents an effect where there is a strong likelihood of a positive or negative impact; however, there is insufficient information at the time to achieve certainty at this stage. Alternatively, there may be both a combination of positive or negative effects, depending on how the option under consideration is delivered.

In addition, the potential effects of the Policy 'Goal' groups can vary over time and are dependent upon the type of impact (temporary, permanent), whether the impact would be direct or indirect, scale of impact (local, city-regional, national), and location of impact (natural and built environment). Commentary will be provided as applicable on the description of likely receptors or affected groups, along with any cumulative effects that may occur. For the Purposes of the appraisal, the timescales in Table 4.2 have been used.

Table 4.2 Timescale Definition

Timescale Category	Assessment
Short	5 years
Medium	5-10 years
Long	10+ years

In some instances it is impossible to predict the effects of the plan with a degree of certainty, and some assumptions have been made in relation to the timescales associated with climate change, air quality, economic growth and loss of environmental resources.

The assessment has shown that the policies within the Transport Strategy have positive, neutral and negative impacts. The assessment of these is provided in detail in Appendix G, however the key negative impacts and the opportunities for mitigation are provided below:

5.2 Objective 1: Protect and enhance our environmental heritage

This IA objective aims to ensure that any effects of the Transport Strategy on the natural environment (within the South Yorkshire Region) are minimised. The objective also ensures that where practicable, the quality, connectivity and extent of such areas is protected and enhanced.

Potential Negative Impacts

1. There may be instances where investment in integrated packages of transport infrastructure may have an impact on historical assets within the City Region. The scale and the magnitude of these impacts is currently unknown. Historic assets should be sensitively incorporated as necessary into the design of integrated packages of infrastructure; an approach which may be managed through the Town and Country Planning process.

2. Improvements to transport innovation may increase the extent to which heritage features and natural assets within the City Region are considered accessible, and there may be an impact on the historical assets as features are adapted however the scale and magnitude of these is currently unknown.

Recommendations/Mitigation

1. It is important that any development takes steps to mitigate any potential impact on heritage assets and plan to be sensitive to the setting of these buildings and structures. There it should be encouraged that impacts are addressed through the Town and Country Planning and through EIA Assessment process.

5.3 Objective 2: Minimise the use and loss of environmental resources (including Landscape, Townscapes, Biodiversity and Geodiversity)

This IA objective aims to offer protection to the regions finite mineral (Limestone, Sand, Coal etc) resource including soil to prevent sterilisation and ensure a sustainable use of such resources.

Potential Negative Impacts

1. Policies which seek to invest in integrated packages of transport infrastructure have the potential to have negative effect as the siting of these could result in the loss and fragmentation of habitats and environmental resources, altering the spatial distribution of air pollution, altering land drainage and disturbing wildlife.

2. The innovative technologies have not yet been determined, therefore it is possible that the 'step-change' in technologies results in greater use of environment resources in the short-term. In the longer-term, it is anticipated that a move towards innovative and fully-integrated technologies would reduce the use and loss of environmental resources, however there is insufficient information at this stage to draw this conclusion.

Recommendations/Mitigation

1. The impacts of these can be impacted through the detailed design process, looking at the siting of infrastructure and also the EIA processes.
2. Introduction of transport innovation, technology solutions and a fully-integrated transport service should encourage the efficient use of environmental resources during construction.

5.4 Objective 3: Improve air quality

This IA Objective aims to ensure that the effects of the Transport Strategy help improve air quality by promoting more sustainable travel options, reduce the level of congestion and support new innovations such as alternative fuels.

Potential Negative Impacts

1. Increasing access to markets and employment through improved accessibility and increasing the speed, reliability and resilience of transport systems is likely to have permanent long-term implications for air quality. With regard to the seven priority spatial growth areas, it may be the case that the effect on air quality is more pronounced within these areas.
2. Given the innovative technologies have not yet been determined, it is possible that the 'step-change' in technologies results in greater use of environment resources and increase in carbon emissions in the short-term through construction. In the longer-term, it is anticipated that a move towards innovative and fully-integrated technologies would improve overall air quality and reduce greenhouse gas emissions.

Recommendations/Mitigation

1. It is suggested that all forms of transport and transport development adopt measures that minimise air pollution, seeking to actively improve air quality, especially in designated AQMAs.
2. Introduction of transport innovation, technology solutions and a fully-integrated transport service should encourage measures which minimise polluting emissions during the construction phases.

5.5 Objective 4: Support a managed response to Climate Change and reduce greenhouse gas emissions

This IA Objective aims to ensure that the effects of the Transport Strategy address issues relating to climate change, and where possible incorporate adaption and mitigation to such effects.

Potential Negative Impacts

1. Increasing access to jobs, markets, skills and supply chains will likely increase the ability for people to live and work in increasingly separate destinations, which is likely to have an impact on carbon emissions and a resultant impact on climate change. Improving accessibility may however reduce travel times and congestion, which in turn could result in a positive impact on minimising climate change.
2. Given innovative technologies have not yet been determined, it is possible that the 'step-change' in technologies results in greater use of environment resources and increase in carbon emissions in the short-term through construction. In the longer-term, it is anticipated that a move towards innovative and fully-integrated technologies would reduce greenhouse gas emissions.

Recommendations/Mitigation

1. Mitigation seeks to actively reduce the impact on climate change, through delivering a low carbon network, integrating transport with land-use and seeking to reduce the impact on air quality.
2. Introduction of transport innovation, technology solutions and a fully-integrated transport service should encourage measures which minimise greenhouse gas emissions and manage climate change during the construction phases.

5.6 Objective 5: Maximise access to jobs, training and skills and other services

This IA Objective aims to ensure that the Transport Strategy supports the region's economy, by improving connectivity with the wider City Region and promoting more sustainable transport options which foster greater equality and access to jobs and training.

Potential Negative Impacts

1. None Identified.

Recommendations/Mitigation

1. Emphasis should be placed on transport remaining affordable for the most deprived members of society.

5.7 Objective 6: Support economic growth and the creation of jobs within transport related sectors

This IA Objective aims to ensure that the Transport Strategy supports the important employment and growth sectors within the region and tackle deprivation.

Potential Negative Impacts

1. None identified.

Recommendations/Mitigation

1. It is recommended that that any employment provision is linked to provision of education and training and should also link with other sustainable modes of travel.
2. Emphasis should be placed on transport remaining affordable for the most deprived members of society.

5.8 Objective 7: Increased levels of physical activity

This IA Objective aims to ensure that the Transport Strategy advocates the interchange between more sustainable modes of travel such as cycling and walking to increase physical activity and promote health and well being.

Potential Negative Impacts

1. None identified.

Recommendations/Mitigation

1. 1. Mitigation links to Policy 5 which specifically encourages multi-modal travel and opportunities for sustainable travel choices.

5.9 Objective 8: Improved road safety, reduced levels of transport related crime and reduced fear of crime

This IA Objective aims to ensure that the Transport Strategy works to design out crime applied to transport sites, introduce traffic calming measures and ensure any transport interventions take account of the needs of vulnerable groups and promote social inclusion.

Potential Negative Impacts

1. None identified

Recommendations/Mitigation

1. Mitigation links to Policy 4 which states that safety, crime and the needs of vulnerable groups is addressed.

2. Emphasis should be placed on designing out opportunities for crime or the fear of crime on all modes of transport.

3. Safe by design elements should be embedded within all new sustainable transport measures to reduce opportunities for crime and fear of crime for all groups.

5.10 Objective 9: Improve local amenity

This IA Objective aims to protect the regions local amenity and health from the associated effects of transport such as noise, light pollution and vibration.

Potential Negative Impacts

1. Improving access to jobs and markets, skills and supply chains through improvements to transport infrastructure can have a short- and long-term impact on receptors within proximity of enhancements, particularly in relation to the Spatial Priority Areas. During implementation, effects are likely to be temporary, however once completed the potential effects of such infrastructure will be permanent. Potential negative effects, such as noise or vibration, should be mitigated accordingly through the town planning and environmental impact processes. Amenity is likely to be effected negatively during the construction of specific interventions to facilitate active travel.

Recommendations/Mitigation

1. Mitigation links to Policy 4 which requires streets to be made healthy and people to feel safe. In addition, Policy seeks to work in tandem with town planning initiatives and policies to create attractive places. Negative effects on amenity in the short term should be mitigated through good construction management and planning conditions.

6 Cumulative Effects

Cumulative effects are defined in the SEA guidance as effects which *"arise, for instance, where several developments each have insignificant effects but together have a significant effect; or where several individual effects of the plan (noise, dust and visual) have a combined effect"* (Department of Energy (DOE), 2005). Due to the very strategic nature of this plan, which is not a development plan, it is difficult to say with certainty what the cumulative outcome of this plan will be. In the appraisal, some assumptions have been made and these have been clearly stated. It is assumed that if all the policies and transport interventions are delivered within the plan period that there will be some degree of environmental impact.

Table 5.1 – Summary of the potential duration and type of cumulative effects of the Plan

IA Objective	Interventions which in combination with each other will provide cumulative effects	Type and duration of effects
1: Protect and enhance our environmental heritage	The transport interventions associated with Policies 5, 6 and 9 will have positive and indirect effects on protecting the environment as they encourage more sustainable forms of travel than the private car and encourage the development and enhancement of green, recreational and attractive spaces. Policies 2, 3 and 10 will have the potential to have negative cumulative effects on the natural and built environment through potential habitat loss and fragmentation however this is not a direct effect in all cases.	There are significant positive effects in the short To long term with new spaces and active transport modes encouraged. There are potential adverse significant effects in the long term depending upon the location, size and duration of these transport interventions and how other mitigation measures are applied.
2: Minimise use and loss of environmental resources	Major strategic transport interventions supported by Policies 3 and 11 will have potential negative cumulative impacts on the loss of natural resources. The cumulative impacts will be dependent upon the size and location of the proposed development.	In the long term, the negative effects associated with these policies will be permanent but are dependent upon supporting measures contained in the Local Plan Documents of the respective local authorities. In addition, if there is (where necessary), a policy direction to avoid the sterilization of the mineral resource. Local Plans may need to undertake further

IA Objective	Interventions which in combination with each other will provide cumulative effects	Type and duration of effects
		assessments in order to address any negative cumulative environmental effects.
3: Improve air quality	Transport Policies 5, 7 and 8 will have a positive cumulative impact on air quality through supporting a reduction in congestion, traffic flows and encouraging more sustainable active travel, improving air quality and delivering a low carbon transport network. Without further detail in relation to the implementation of Policies 1 ad 2, this assessment assumes that this policy promotes the use of the car and as such, could potentially have a cumulative negative impact on the increase of emissions.	There are significant positives effects in the short, medium and long term. It is assumed that the potential impacts on air quality will be long term
4: Support a managed response to climate change and reduce greenhouse gas emissions	The implementation of the following Policies 5, 7 and 8 will encourage more sustainable forms of travel including cycling, walking, public transport and low carbon modes of travel which will have a cumulative impact on improving emissions and secondary cumulative impacts on improving air quality. Without further detail in relation to the implementation of Policies 1 and 2, this assessment assumes that this policy promotes the use of the car and as such, could potentially have a cumulative negative impact on the increase of CO_2 emissions.	There are significant positive effects in the short medium and long term once these policies are implemented. It is assumed that the potential impacts on climate change will be permanent and long term and greenhouse gases will increase.
5: Maximise access to jobs, training and skills, and other services	Policies 1 and 3 will provide cumulative benefits to SCR's ability to maximise access to employment, training and choice for all equality groups.	There are significant long term effects.

IA Objective	Interventions which in combination with each other will provide cumulative effects	Type and duration of effects
6: Support economic growth and the creation of jobs within transport related sectors	The application of Policies 1, 2, 3, 10, 11 and 12 will create cumulative effects directly or indirectly on the economy of SCR, through direct job creation or interventions which support business development in a proactive way.	There will be significant long term benefits from the application of these policies. However the extent of these benefits will be dependent upon the delivery of major transport interventions unlocking the region's economic opportunities. A number of these are based on technologies and therefore would create jobs in various sectors as well as transport.
7: Increase levels of physical activity	Transport interventions promoted in Policies 5 and 6 will have cumulative effects by encouraging walking, cycling and the use of public transport. The use of such interventions will have secondary health benefits for all groups and help tackle social inclusion. However, making places more accessible through Policies 5 and 6, if unmanaged, has the potential to cause negative cumulative impacts on some natural environments and habitats through disturbance to wildlife, nesting sites and predation by household pets.	There are significant positive long term effects and benefits to all equality groups. However, in the long term the implementation of these policies will require careful management to avoid any cumulative effects on protected sites from recreational and access pressure.
8: Improve road safety, reduced levels of transport related crime and reduce fear of crime	Policies 4, 5 and 6 will have positive cumulative effects on all equality groups and will have secondary benefits by encouraging people to use more sustainable forms of travel which can potentially mean improvements to air quality, health and well-being and deprivation.	The benefits of safety will be felt within the short to long term. However, reducing levels of transport related crime and fear of crime will take longer as this means altering people's perceptions and experiences, especially for the more vulnerable groups in society.
9: Improve local amenity	Policies 2, 4, 5, 6, 7, 8 and 9 will have direct benefits to improving local amenity through improving air quality (Policy 7), encouraging active travel modes (Policy 5) thereby reducing noise, and	Some of the cumulative benefits associated with these policies will be experienced over the long term as new technologies are developed and implemented. However, some of the more locally focused

IA Objective	Interventions which in combination with each other will provide cumulative effects	Type and duration of effects
	measures to improve the efficiency of lower carbon modes (Policy 8) which will help air quality and noise. Other policies will also have secondary cumulative benefits such as ensuring the transport network is resilient (Policy 2), making streets more healthy (Policy 4), improving access to green and recreational spaces (Policy 6) and creating attractive places (Policy 9).	initiatives will provide positive impacts in the short term.
10: Transport interventions benefit everyone	Many of the above comments made in respect of the above objectives (in relation to transport interventions) will have positive beneficial cumulative effects on most sections of society. The extent to which these interventions will have a beneficial cumulative impact on the more vulnerable groups within South Yorkshire will be difficult to measure.	How transport interventions benefit people is largely dependent upon the scale and duration of implementation (permanent, temporary, short or long term) when they are undertaken and who they are aimed at.

7 Equalities Impact Assessment and Health Impact Assessment

An EqIA has been completed within the IA. An IA often covers this alongside the SEA objectives, and therefore the policies have been assessed against equality groups during the policy development. Assessing the policies in this way has ensured that each of the equality groups have been considered in detail throughout this stage of the IA process.

The EqIA is not about treating everybody the same. Equality means making sure that the individual needs of different people and different communities are taken into account. Therefore, the likely impacts and barriers to the following groups have been considered:

- race/ethnicity;
- gender;
- disability;
- age;
- faith/religious or other beliefs;
- sexual orientation; and
- other groups who might not have equal access to services.

The results of the EqIA (Appendix G) has demonstrated that due to the strategic nature of the document (and the policies contained therein), that there will be no adverse impacts on any of the equality groups.

It is reasonable to assume that any policies which encourage future development to consider better access to facilities, more choice of transport modes, provide a range of housing types (for those with additional needs), training opportunities, and make environments safer and more legible will benefit all the equality groups.

It is not possible at this stage (due to the strategic nature of the policies) to try to enforce the implementation of certain requirements (for example drop curbs, tactile pavements, etc) for specific equality groups as these issues will be addressed by other legislation such as Building Regulations, and other more detailed policies which will appear in a lower tier plan, which should address the specific design issues and detail (for all equality groups) of major developments.

It is recommended that future Plans should be subject to an EqIA, and strategic highway interventions at the design and planning stage should also be subject to Equality Appraisal to ensure that the needs of all groups are considered.

The HIA makes sure that health and well-being are included into national policy. It is important to understand that any plan or project could potentially have an impact on health. Many social or environmental factors can influence health for instance:

- poverty, unemployment, poor housing, crime, low educational attainment, social exclusion;
- agricultural and transport policies, and environmental issues, such as air pollution; and
- sustainable development issues in terms of health.

It is considered that this is covered within the existing assessment objectives and therefore a separate HIA was not required.

8 Recommendations

This assessment has demonstrated that in some instances, it is impossible to predict the effects of the plan with a degree of certainty and some assumptions have been made in relation to the timescales associated with climate change, air quality, economic growth and loss of environmental resources (namely minerals).

Whilst the majority of the transport policies have performed well against the IA objectives there are a few policies which have the potential to perform negatively against some of the objectives. This Environmental Report makes a number of policy recommendations as part of the final appraisal. The purpose of these recommendations are to help the Transport Strategy further improve, and these include the following:

- It is recommended that a policy matrix is established which considers the overlapping and feedback nature of specific policies within different policy 'goals'.
- Historic and natural assets within the City Region are sensitively incorporated into any resultant policy proposals arising following the SCR Transport Strategy. Mitigation could include linkages to Policy 9 which would encourage all effects to be addressed through the Town Planning and Environmental Impact Assessment (EIA) processes.
- Impacts of targeted infrastructure interventions, particularly within the Integrated Infrastructure Packages, should be assessed against the EIA, Town Planning and Habitats Directive legislation (Policy 9).
- Effects of improved transport accessibility on air quality should be addressed through links to Policy 7, which seeks to actively improve air quality particularly in designated Air Quality Management Areas (AQMAs).
- Impacts on climate change should be addressed through connection to Policy 8, which seeks to actively reduce the impact on climate change.
- Linkages to Policy 4 and Policy 9 would ensure that temporary negative effects of construction of transport interventions is addressed through place-making and planning principles.
- Local employment requirements could be conditioned to the delivery of targeted infrastructure interventions.
- Introduction of low carbon technologies and public transport to be targeted towards reducing the use and loss of environmental resources, minimising climate change and minimising the effects on air quality within the City Region, both during construction of interventions and throughout operation.
- Negative effects on amenity from the delivery of transport interventions in the short term should be mitigated through good construction management and planning conditions.
- Emphasis should be placed on designing out opportunities for crime or the fear of crime on all modes of transport promoted through the Transport Strategy.

- Ensure low carbon transport networks are targeted towards reducing the use and loss of environmental resources, minimising climate change and minimising the effects on air quality within the City Region, both during construction of interventions and throughout operation.

The Transport Strategy needs to consider the Habitats Directive Legislation in order to ensure that future associate major transport interventions consider their impact on nationally and internationally designated sites (which include Thorne and Hatfield Moors as well as the Peak District National Park) together with wildlife corridors.

This IA appraisal will not meet or address the requirements of the 1992 Habitats Directive[2]. A separate report on the information to inform a Habitats Regulation Assessment also accompanies the IA and Transport Strategy.

[2] Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.

9 Conclusion

9.1 Summary of the Findings

This document is a high-level strategic document and as such its policies have to capture the aspirations and requirements of international, national and local policy. This plan will ensure that development is carried out in a sustainable way whilst still allowing the plan to deliver its economic objectives for the South Yorkshire area and the wider SCR.

The appraisal has identified that on the whole, the effects of the 2018 Transport Strategy over the long term will be mainly positive. However, it is very difficult to say at this stage what the full range of cumulative effects are likely to be. These effects will become more apparent as definitive information is available on the strategic transport interventions (such as site location, scale, phasing, development duration, mitigation etc.) and when lower tier implementation plans are developed, and the policies within the plans are implemented and monitored.

At this stage, even though the plan is very strategic in nature, it is unrealistic to assume that the level of growth proposed will not have some environmental impact within the plan period. Clearly, some impacts may be temporary as sites are developed and mitigation is implemented and as technologies change, and some may be permanent, such as the loss of agricultural land to development of major transport proposals. It is therefore important to take a balanced view when considering all the tensions that exist between economic growth, environmental protection and social deprivation.

A significant challenge that this appraisal has had to address is how to predict and quantify the impacts of climate change considering that climate change is a global event and is ‘the greatest long-term challenge facing the world today’ (PPS1).

Government transport guidance makes it clear that transport has a fundamental and important role to play in delivering sustainable development and tackling climate change. As such issues around climate change are well embedded into the Transport Strategy.

9.2 Incorporating IA findings into the SCR Transport Strategy

The SEA Directive states that:

“When a plan is adopted, the environmental authorities and the public are informed of:

a. when a plan is adopted; and

b. a statement summarising how environmental considerations have been integrated into the plan and (c) the measures decided concerning monitoring (Article 9 (1).”

The Transport Strategy and the IA will go out to consultation in the autumn of 2017. The comments following the consultation period will then be incorporated into this report and how these will be taken into consideration in the Transport Strategy will be highlighted.

10 Monitoring

The SEA Directive (Article 10.1) requires the Transport Strategy to be monitored during its implementation, rather than during its preparation and adoption. The SEA objectives table (see Appendix D) suggests some ways of monitoring the effects of the plan by using indicators to monitor environmental effects. Where possible, the table has also identified other existing sources of monitoring to help to provide information for monitoring the SEA objectives.

Monitoring also provides the opportunity to determine if the mitigation of significant environmental effects (identified within this report) are being carried out, and allows for any other unanticipated environmental effects to be documented and addressed (mitigation) during the period of the plan.

The effects of the Transport Strategy and subsequent monitoring of this IA report can also be linked to the report on ‘Conditional Outcomes: Methodology for quantification’. This document sets out quantifiable outcomes for each goal, and therefore it can be noted where these have been achieved and whether the goal is achieving what was set out.

Appendix A

Plan, Programme and Environmental Protection Review

A1 Review of other relevant plans, programmes and environmental protection objectives

Name of Plan / Programme	Objectives or key requirements of the plan or programme	How objectives and requirements might be taken on board.
International		
The Johannesburg Declaration on Sustainable Development (2002)	Commitment to sustainability principles and sustainable development agenda agreed at World Summit on Sustainable Development in Johannesburg, South Africa in September 2002. Involved all major groups in Sustainable Development.	The requirements are reflected in National Policy.
Kyoto Protocol Agreement (1997) Framework Convention on Climate Change	Gather, share and monitor information on greenhouse gas emissions. Sets binding targets for the reduction of greenhouse gas emissions for the United Kingdom. The Doha Amendment, implemented in 2012, established the second commitment period for the Kyoto Protocol up to 2020.	The requirements of the Protocol are reflected in National Policy. There are targets to reduce greenhouse gas emissions by 80 per cent from the 1990 baseline levels by 2050.
European Council Directive 92/43/EEC (Conservation of Natural Habitats of wild Fauna and Flora) 'Habitats Directive'	Protection of Internationally important sites.	The requirements of the Directive can be included in the SEA objectives to take into consideration Natura 2000 sites in local authority areas. (Thorne and Hatfield Moors and South Pennine Moors Special Areas of Conservation and Special Protection Areas)
European Council Directive 2009/147/EC (The conservation of wild birds) 'Birds Directive'	Conservation of all species of naturally occurring birds in the wild, their eggs and their habitats. Including their protection, management and control.	As above.
The Seventh Environmental Action Programme of the European Community 2014 - 2020	The Action Programme will guide European environment policy until 2020, but sets out a vision for 2050 to provide long-term direction. The programme identifies three priority areas where more action is required. These comprise:. • Protection of "natural capital" • A resource-efficient, low-carbon economy • Human health and wellbeing.	The requirements are reflected in National and regional policy.

Name of Plan / Programme	**Objectives or key requirements of the** plan or **programme**	**How objectives and requirements might be taken on board.**
European Council Directive 2008/98/EC Waste Framework Directive 'Waste Directive'	The Directive prevents adverse impacts of waste generation through the prevention of waste, encouraging the use of waste as resource by recycling and recovery.	The requirements are incorporated in National policy.
The Conservation of Habitats and Species Regulations 2010 Regulations 1994, As amended 2007	Has the same objectives as the Directive but transposes the Directive in to UK law. Consolidates all amendments made to the Conservation (Natural Habitats) Regulations 1994.	See the Habitats Directive above (Box 3).
Water Framework Directive	Established a new integrated approach to the protection, improvement and sustainable use of Europe's rivers, lakes, estuaries, coastal waters and groundwater has specific environmental objectives, and broader ecological objectives which must be delivered.	The planning system provides the decision making framework within which the objectives of the Directive can be delivered.
UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (16 November 1972)	Convention concerning the protection of the World Cultural and Natural Heritage regards heritage as both cultural and natural. The introduction of the convention reinforced the need for the UK to preserve the balance between these two assets. The Convention established the World Heritage List (properties considered to have Outstanding Universal Value). By endorsing this convention the UK agrees to: • Identify and nominate properties in its territory to be considered for inscription on the World Heritage List ensure that a listed property is properly protected • Ensure that a management plan is produced and kept up to date for each enlisted property protecting the Outstanding Universal Value of the properties inscribed	The requirements are incorporated in National policy.

Name of Plan / Programme	**Objectives or key requirements of the** plan or **programme**	**How objectives and requirements might be taken on board.**
Convention for the Protection of the Architectural Heritage of Europe (Granada: Council of Europe, 1985, ETS 121)	This Convention reinforced and promoted policies for the conservation and enchantment of Europe's heritage. It established a co-ordinated approach to conservation policies and how they are implemented.	The requirements are incorporated in National policy.
European Convention on the Protection of the Archaeological Heritage (Valletta: Council of Europe, 1992, ETS 143)	The Valletta Convention was endorsed by the UK in March 2001 and replaced the previous London Convention (1972). This Convention requires the UK to 'maintain a legal system for the protection of the archaeological heritage fulfilling the conditions of the Convention, and devise supervision and protection measures'. The convention also requires the UK to: • Promote an integrated policy for the conservation of archaeological heritage • Arrange financial support for research • Facilitate the pooling of information • Promote public awareness • Intensify co-operation between parties	The requirements are incorporated in National policy.
European Landscape Convention (Florence: Council of Europe, 2000, ETS 176)	The Convention was adopted by the UK in March 2004 and covers all forms of landscape which the UK possesses. The aim of the Convention is to "promote landscape protection, management and planning, and to organise European co-operation on landscape issues" (Article 3). The general purpose of the Convention is to encourage public authorities to adopt policies and measures at local, regional, national and international level for protecting, managing and planning landscapes throughout Europe so as to maintain and improve landscape quality and bring the public, institutions and local and regional authorities to recognise the value and importance of landscape and to take part in related public decisions.	The requirements are incorporated in National policy.

Name of Plan / Programme	Objectives or key requirements of the plan or programme	How objectives and requirements might be taken on board.
National		
'Securing the Future' The UK Government Sustainable Development Strategy. March 2005	Sets out the following principles: • Living within environmental limits. • Ensuring a Strong and Healthy and just Society. • Achieving a Sustainable Economy • Promoting good governance • Using sound science responsibly.	There should be a strong focus on how transport can influence transport choices in the context of encouraging more sustainable lifestyles and business practices.
The Climate Change Act 2008	The Act sets targets for the reductions in Greenhouse gas emissions. Including, adaption to Climate Change and encouraging waste recycling and minimisation. There is a key requirement for the UK's net carbon to be at least 80% lower than the 1990 baseline by 2050.	The requirements are incorporated in National policy.
Conserving Biodiversity – The UK Approach October 2007	This sets out the vision, approach, and framework for conserving biodiversity within the UK which includes the following shared priorities; • Protection the best sites for wildlife • Targeting action on priority species and habitats • Embedding proper consideration of Bio-diversity and ecosystem services in all relevant sectors of policy and decision making. • Engaging people and encouraging behaviour change. • Developing and interpreting the evidence base	Include objectives to conserve and enhance Biodiversity.

Name of Plan / Programme	Objectives or key requirements of the plan or programme	How objectives and requirements might be taken on board.
The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, July 2007	Provides a framework for addressing air quality (outdoor), reductions, emissions and concentrations to achieve the improvements in air quality.	Air quality requirements are incorporated in National policy. However, the SEA Objectives will need to address issues of air quality.
Towards a Sustainable Transport System – (TaSTS) Supporting Economic Growth in a Low Carbon World Department for Transport 2007	This document set out the Governments strategic approach to Transport Strategy to 2014 and beyond and addresses the recommendations from both the Eddington Study and Stern Review. This sets out five broad goals for transport; 1. To support national economic competitiveness and growth, by delivering reliable and efficient transport networks. 2. To reduce transport emissions of carbon dioxide and other greenhouse gases, with the desired outcome tackling climate change. 3. To contribute to better safety, security and health and longer life-expectancy by reducing the risk of death, injury or illness arising from transport by promoting travel modes that are beneficial to your health, 4. To promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society. 5. To improve quality of life for transport user and non-transport users, and to promote a healthy natural environment. 6.	The SEA should incorporate the five goals of the TaSTS report.

Name of Plan / Programme	Objectives or key requirements of the plan or programme	How objectives and requirements might be taken on board.
Route Utilisation Strategies There are various Route Utilisation Strategies of particular importance to South Yorkshire including the East Coast Main Line (February 2008), Yorkshire and Humber (July 2009) and East Midlands (February 2010). The Freight (March 2007) and the Network Route Utilisation Strategies also cover the entire network. Services between Sheffield and Manchester, The Inter City Express Project (IEP) and High Speed Rail developments.	Route Utilisation Strategies have been developed by Network Rail to cover specific sections of the rail network with input from both partners and stakeholders. They set out the vision for the network based on the funding which is, or is likely to be, available for the period of the Strategy. The initial programme of Route Utilisation Strategies will be completed in 2011.A second generation of Route Utilisation Strategies, also published in 2011, identified strategic gaps for investigation, including one for the North of England. This included consideration of the Northern Hub Study, which was published in February 2010, and outlines amongst other things improvements that would provide the opportunity for faster, more frequent rail services.	The Transport Strategy must take into consideration the requirements of this plan to ensure that the rail infrastructure is available in the long term to deliver the plans goals of improving connectivity throughout the City Region and beyond. In order to ensure consistency of approach.
'Safeguarding our Soils' A Strategy for England, 2009	This document replaces the 'First Soil Action Plan for England' 2004 – 2006. 'A Strategy for England' places an emphasis on dealing with soils in a sustainable way. The strategy has the following objectives: • Developing our understanding of the impacts of degradation threats on soil functions and improving our monitoring regime. • Ensuring that the industry has the necessary skills and knowledge to tackle soil degradation and maintain levels of organic matter. • Ensuring existing regulatory mechanisms and incentives work effectively to prevent soil degradation. • Improve our understanding of the potential	This strategy places an emphasis on dealing with soils in a sustainable way. The Transport Strategy should consider how future transport interventions can contribute to the work that arises from the strategy (First Soil Action Plan) such as how soils can be managed to deliver ecosystems services and how sols can play a role in dealing with climate change.

Name of Plan / Programme	Objectives or key requirements of the plan or programme	How objectives and requirements might be taken on board.
	to increase levels of soil carbon. • Significantly reduce the rate of loss of stored soil carbon by 2020. • Ensure land managers understand how to reduce emissions and mitigate climate change through improved management practices. • Develop the evidence bas on the impact of climate change on soils. • Ensure that land managers have the information and guidance necessary to be able to secure the resilience of their soils in the face of a changing climate. • Improve our understanding of the risks to human health and the environment from soil pollution. • Reduce the levels of pollutants entering the soil from the atmosphere and form materials spread to land. • Ensure advice on the use of material spread to land reflects the latest scientific understanding. • Ensure soil ecosystem services are fully valued in the planning process. • Ensure appropriate consideration is given to the protection of good quality agricultural soils from development. • Encourage better management of soils through all stages of construction. • Improve understanding of the impacts of contaminated land and sustainable	

Name of Plan / Programme	**Objectives or key requirements of the** plan or **programme**	**How objectives and requirements might be taken on board.**
	remediation techniques. • Ensure contaminated sites that pose a significant risk to human health and the environment are identified and steady progress is made towards their remediation.	
The UK National Ecosystem Assessment , June 2011 / UK National Ecosystem Assessment Follow-on, June 2014	The UK National Ecosystem Assessment is the first analysis of the UK's natural environment including Mountains, moors and heaths, Semi-natural grassland, Enclosed Farmland, Woodland, Freshwater, wetlands, floodplains, Urban, Marine and Costal Margins. The purpose of the study is to demonstrate the importance of ecosystem services to human well-being, society and future economic prosperity and show how key services are being degraded and lost. The initial report, published in June 2011 outlined the following key findings: 1. The natural world, its biodiversity it ecosystems are critically important to our well-being and economic prosperity, but are consistently economically undervalued in decision-making. 2. Ecosystems and ecosystem services, and the ways people benefit from them, have changed markedly in the past 60 years, driven by changes in society. 3. The UK's ecosystems are currently delivering some services well, but others are in long-term decline. 4. The UK population will continue to grow, with demands and expectations continuing to evolve. This will increase pressures on	The Transport Strategy should consider the National Ecosystem Assessment programme in relation to future major transport interventions.

Name of Plan / Programme	**Objectives or key requirements of the** plan or **programme**	**How objectives and requirements might be taken on board.**
	ecosystem services in a future where climate change will have an accelerating impact within the UK and globally. 5. Actions and decisions made now will have future consequences for ecosystems, ecosystem services and human well-being. It is vital that these consequences are understood, in order to make the best possible choices for the current and future generations.	
National Planning Policy Framework, March 2012	The NPPF sets out the Governmental Transport policies for England and guidance on how these are to be applied. It provides a framework within which Councils can develop local and neighbourhood plans, and consider planning decisions. The NPPF states that sustainable development involves pursuing positive improvements in the quality of the built, natural and historic environment, as well as quality of life, including: • Facilitating job creation in cities, towns and villages. • Achieving a net gain in biodiversity. • Improving poor design. • Improving the conditions in which people live, work, travel and take leisure. • Widening choice of high quality homes. The Framework also states that "at the heart of the NPPF is a presumption in favour of sustainable development, which should be seen as a golden thread	The Transport Strategy should take account of the impact it might have upon the built, natural and historic environment, and seek to make improvements where appropriate. The Strategy must seek to promote, and add to, biodiversity and geological features through new developments. Access to public transport should be reflected in the Transport Strategy, and sustainable development must be facilitated wherever possible.

Name of Plan / Programme	Objectives or key requirements of the plan or programme	How objectives and requirements might be taken on board.
	running through both plan-making and decision-taking".	
Planning Policy Statement 10 Sustainable Waste Management	The movement of waste up the waste hierarchy. Provide sufficient waste management facilities, restrict landfill, consider recycling opportunities and needs in non-waste development.	The Transport Strategy should be consistent with the aims of transporting waste.
Equality Framework for Local Government (November 2012)	This provides a framework for local authorities to use to ensure that equalities are mainstreamed within their services and takes into account the individual requirements of different people and different communities. The Framework comprises five performance areas: • Knowing your communities. • Leadership, partnership and organisational commitment. • Involving your communities. • Responsive services and customer care. • A skilled and committed workforce.	The requirements of the equality legislation will be incorporated by each Local Planning Authority in their respective procedures and Equalities Action Plans. In addition, individual Equality Appraisals for respective Community Strategies will have been undertaken. However, issues of equality should also be considered within the SEA objectives. Equalities will be included in the respective Equalities Impact and Assessment and Equalities Impact Action Plan and the Council's Sustainable Community Strategies. However, equalities should also be considered with the SEA objectives.
National Planning Policy for Waste, October 2014	This document sites alongside the NPPF, setting out detailed waste planning policies. The policy seeks to work towards a more sustainable and efficient approach to resource use and waste management.	The Transport Strategy should consider the guidance in this document in its delivery of transport initiatives.

Name of Plan / Programme	Objectives or key requirements of the plan or programme	How objectives and requirements might be taken on board.
Regional		
Yorkshire and Humber Regional Spatial Strategy, May 2008	The objective of the plan is to identify specific types of development land (Minerals, Housing, Tourism, Employment and Transport) for the region. The transport requirements for the plan cover the integration of transport planning and land use planning. The region has to deliver; reductions in travel, changes in modal shift, parking standards, parking strategies, improvements in public transport, the development of integrated freight, improvements in access, airport development, protection and enhancement of waterways, rural transport and transport investment and management priorities.	This document was revoked in 2010 however, the evidence base in relation to this document is still valid. The Transport Strategy should where necessary reflect the work in the RSS evidence base. However noting that the weight that can be placed on this is limited due to the amount of time that has passed since these were abolished.
South Yorkshire Green Infrastructure Strategy, 2011	The overarching aims of the SY Green Infrastructure Strategy are: • Economy – Provide an enhanced quality of place for communities and for new economic investment. Stimulate and sustain economic growth through innovation. • Community – Create accessible opportunities for recreation, communities, employment and social cohesion. Use the green network to support physical and mental health. • Climate Change – Adapt to anticipated effects of climate change and take action to mitigate impacts. • Biodiversity – Take action to enhance and conserve biodiversity.	Transport Strategy should include measures for promotion of multi-functional green infrastructure, including opportunities for walking and cycling. Opportunities for the improvement of existing green infrastructure and the creation of new green infrastructure should be explored.

Name of Plan / Programme	Objectives or key requirements of the plan or programme	How objectives and requirements might be taken on board.
City Relationships: Economic Linkages in Northern City Regions: Sheffield City Region (November 2009)	Key findings for Transport: • Congestion and overcrowding impact at the higher end of the labour market. Overall the Sheffield City Region is well connected. However, a larger proportion of journeys are made by road then other city regions. This makes it less attractive for people to work in Sheffield but live elsewhere. External connectivity is an issue, especially to Manchester by train. • Transport Integration matters at the lower end of the labour market. "Former coal mining and manufacturing communities across the city region … may be cut off from employment opportunities … deprived areas in the south east of Sheffield, the west and east of Barnsley and north of Doncaster have limited access to … public transport in general … affordability is also an issue". • Transport underpins complementary relationships. "For transport improvements to be most effective, they should … go hand-in-hand with other policy initiatives strengthening local demand for labour or fostering the quality of local supply chains".	The document highlights that a significant number of journeys across the SCR are made by road, and it is clear in the Transport Strategy that this needs to be addressed and other, more sustainable, modes of transport should be encouraged. It is important that other initiatives are brought forward in tandem in order to ensure that the demand is present.
Sheffield City Region Strategic Economic Plan, 2015	The Plan sets out how the SCR Local Enterprise Partnership (LEP) will help to build the SCR's economy by delivering growth and jobs. Infrastructure investment is highlighted as a priority	Transport Strategy should reflect the objectives outlined in the Strategic Economic Plan and include measures relating to the three key action areas identified.

Name of Plan / Programme	**Objectives or key requirements of the** plan or **programme**	**How objectives and requirements might be taken on board.**
	for achieving these aims, with key action areas identified as follows: • External Connectivity – national and international connectivity by air, rail and road. Delivery of HS2 and investment in existing rail network. • Transformational City Region Schemes – Promote schemes and interventions that are strategically significant on a City Region scale. Enabling Infrastructure – Invest in packages that enhance the environment in which people live and work (eg. investment in sustainable transport).	
The Top Ten interventions to Cut Regional Carbon Emissions. (2009), Yorkshire Futures	The study has three main objectives; 1. Establish a comprehensive and detailed carbon emissions baseline for the Yorkshire and Humber region and explore how emission levels will develop in the future 2. Identify a long list of possible interventions in the Yorkshire and Humber region to reduce carbon emissions Assess interventions on the long list applying a set of criteria to establish their potential impact and viability, and develop a short list (Top 10) of those interventions that would deliver the biggest benefit for the region.	The study only looked at CO_2 emissions. The Transport Strategy should ensure that public transport interventions help reduce CO_2 emissions by providing people with greater choice of transport modes (especially lower carbon options) and actively encouraging people to use other forms of sustainable transport such as rail, public, cycling and walking. Ensuring that traffic management can also play a significant part by improving the use of existing infrastructure, such as controlling flow rates, traffic calming to reduce stop start patterns, motorway speed limits, traffic light synchronisation (green waves) ensuring that motorist adhere to the speed limit and effective engagement with the wider business community to ensure that the region is attractive to investors.

Name of Plan / Programme	**Objectives or key requirements of the** plan or **programme**	**How objectives and requirements might be taken on board.**
Yorkshire and Humber Regional Biodiversity Strategy 2009	The Yorkshire and Humber Regional Biodiversity Strategy sets the framework for the integration of biodiversity at a regional and local level and promotes a more joined up approach to biodiversity for all parties. This strategy has six key themes; 1. Protecting the best sites for wildlife in the region 2. Focusing conservation action on the region's priority habitats and species 3. Improving functional habitat networks and enhancing the wider environment 4. Developing a robust evidence base for the region 5. Engaging people with the region's biodiversity 6. Helping the region's biodiversity adapt to climate change	The Transport Strategy will need to consider the transport section in this document covering areas such as maximising contribution of new and existing transport routes 'soft estate' (verges etc.) to biodiversity, ensuring regional and local transport planning and plans for the management of major routes, recognise the importance of existing linear transport related features and incorporate them in to green infrastructure plans, development of sustainable transport routes and ensure careful planning design of major infrastructure projects is sustainable and has positive effects on the biodiversity resource of the region.
North Yorkshire Local Transport Plan 4 (2016-2045) (Published 2016)	The Local Transport Plan will deliver the visions and aims of the NYCC Council Plan. The objectives of the LTP4 are: • To contribute to economic growth by delivering reliable and efficient transport networks and services. • To improve road and transport safety. • To improve equality of opportunity by facilitating access to services, • To manage the adverse impacts of transport on the environment. • To promote healthier travel options.	The Transport Strategy objectives of neighbouring Authorities should be taken into consideration. This approach will enable the Transport Strategy to identify, manage, or where necessary mitigate any cross boundary cumulative effects (environmental, social and economic) associated with transport issues. Joint working between transport authorities is strongly advocated in the Sheffield City Region Transport Strategy.

Name of Plan / Programme	**Objectives or key requirements of the** plan or **programme**	**How objectives and requirements might be taken on board.**
East Riding Local Transport Plan 4 (2015 – 2029),(Published 2015)	The East Riding of Yorkshire Council's fourth Local Transport Plan was adopted in 2015, and includes the following objectives: 1. Improve the maintenance and management of the transport network. 2. Support sustainable economic growth and regeneration. 3. Reduce carbon emissions. 4. Improve road safety. 5. Support and encourage healthy lifestyles. 6. Improve access to key services.	The key challenges faced by the East Riding of Yorkshire are clearly reflected in the LTP objectives and should be considered in order to determine if there are any cross boundary transport issues.
Nottinghamshire County Council Local Transport Plan 3 2011-2026 (Published 2011)	Nottinghamshire County Council's LTP3 replaces the LTP2, which was produced in conjunction with the city of Nottingham. The third plan identifies the following transport challenges: Supporting economic growth • Tackling congestion and making journey times more reliable. • Improving connectivity to inter-urban, regional and international networks. • Addressing the transport impacts of planned housing and employment growth. • Encourage people to walk, cycle and use public transport through promotion and provision of facilities. • Support regeneration.	The Transport Strategy challenges outlined in the Nottinghamshire LTP should be taken into consideration. This approach will enable the Transport Strategy to identify, manage, or where necessary mitigate any cross boundary cumulative effects (environmental, social and economic) associated with transport issues especially in relation to the European Sites located within Doncaster.

Name of Plan / Programme	**Objectives or key requirements of the** plan or **programme**	**How objectives and requirements might be taken on board.**
	Protecting the environment • Reducing transport's impacts on the environment (air quality, buildings, landscape, noise etc.) • Adapting to climate change and the development of low-carbon transport system. Improving health and safety • Improving health and activity levels by promoting active travel. • Improving personal safety when walking, cycling or using public transport. Improving accessibility • Provision of an affordable, reliable, and convenient public transport network • Improving access to employment and other key services. Maintaining and improving existing infrastructure • Maintaining existing transport infrastructure, including roads, footways, public transport services etc.	
The Peak District National Park Management Plan 2012-2017 (Published 2012)	The Management Plan ensures co- coordination and integration with other plans. The Plan sets the framework for all activity pursued by stakeholders in the Park and has the following principles; Partnership working	A significant section of the Peak District National Park is located in South Yorkshire. The Transport Strategy must consider how the Strategy and its implementation through future transport interventions

Name of Plan / Programme	Objectives or key requirements of the plan or programme	How objectives and requirements might be taken on board.
	Sustainable Development A draft for the next stage of the Management Plan is currently out for consultation, however the principles above have been retained and form the basis of the new Plan.	relate to the Management Plan of the Peak District National Park. The next stage of the Management Plan should also be considered, once implemented.
Local Plans		
Sheffield Carbon Reduction Framework	The aim of the framework is to; • Improving people's health • Reducing the harmful effects to the environment • Identifying how the prosperity of all • Sheffield's residents can be improved by creating new jobs in the new environmental economy • Making sure that everyone in the city can play their part in reducing carbon emissions.	The car occupancy, vehicle mileage and public transport objectives are very ambitious and reflect the scale of the challenge. The study has identified that Sheffield's carbon emissions come from three main sources, homes, transport and business. The Transport Strategy should aim to support the aims of the framework, by using transport initiatives to tackling congestion, make public transport more accessible and affordable, make it easier to use low carbon vehicle fuels, and by doubling car occupancy rates, reducing vehicle mileage by a quarter and also increase the use of public transport by a quarter.
Sheffield Development Framework Core Strategy, adopted March 2009	The transport policies with the Core Strategy echo those contained with the Local Transport Strategy. The Core Strategy has the following transport Priorities; 1. promoting choice by developing alternatives to the car 2. maximising accessibility 3. containing congestion levels 4. improving air quality 5. improving road safety 6. supporting economic objectives through demand management measures and	Under the Planning and Compulsory Purchase Act 2004 all core Development Plan Documents like the Core Strategies produced by Local Planning Authorities which form the basis of the Local Development Framework must be subject to Strategic Environmental Assessment, Sustainability Appraisal, and where necessary Appropriate Assessment. Therefore, it is acceptable to presume that the requirements of the SEA have been met during the development of this plan. However, the Transport Strategy will have a major role to play in delivering the planned growth within the Core Strategy in a

Name of Plan / Programme	Objectives or key requirements of the plan or programme	How objectives and requirements might be taken on board.
	sustainable travel initiatives.	sustainable way, by reducing the need to travel and encourage accessibility by a choice of modes particularly public transport whilst still supporting sustainable development activity.
Sheffield Economic Strategy (2014)	The purpose of this document is to set a framework for the sustainable growth of Sheffield's economy and address the 'prosperity gap' between Sheffield and the rest of the country. The Strategy sets out six economic objectives that form a vision for 2020: Distinctive and high performing sectors 1. A dynamic private sector 2. A skilled and productive workforce 3. Future proof infrastructure 4. An inclusive economy 5. A high profile city brand.	The Transport Strategy is integral to providing the capacity for economic growth in Sheffield. The plan should deliver sustainable transport interventions. The Transport Strategy can strongly influence the delivery of this plan, by encouraging better connectivity and improving Sheffield' competitive position, through quicker journey times to other major cities and associated labour and business markets.
Rotherham Local Plan Core Strategy, 2013-2028 (Published 2013)	The Core Strategy was adopted in September 2014 and broadly shares the same transport priorities as those outlined within the Sheffield Core Strategy.	National policy will need to be considered, as there should be some consistency with other areas
Rotherham Economic Growth Plan (2015-2025) (Published 2015)	The Rotherham ECP sets out a programme for investment and economic growth for the period up to 2025. The plan presents a number of themes which roughly align with the Sheffield City Region Strategic Economic Plan: 7. Grow existing and develop new businesses. 8. Skills for employment and progression. 9. Inclusion, well-being and employment. 10. Employment land and business premises 11. Transport 12. Town centre 13. Housing	The Transport Strategy should aim to support the objectives of the Economic Growth Plan by providing a range of transport options and choices which ensure good access to skills, employment, and businesses through increased connectivity.

Name of Plan / Programme	Objectives or key requirements of the plan or programme	How objectives and requirements might be taken on board.
Barnsley Sustainable Community Strategy (2008 – 2020) (Published 2008)	Vision: A successful, uniquely distinctive 21st century market town at the centre of a borough that offers prosperity and a high quality of life for all Includes an ambition - Barnsley people are healthier and live longer – adding life to years and years to life – and - Barnsley has a high performing integrated transport system.	Transport cross cuts economic aspirations, social inclusion/access to services, environmental improvements/climate change and health/air quality.
Barnsley Local Development Framework Core Strategy, adopted September 2011	The document includes the following objective pertaining to transport: To improve access, movement and connectivity with sustainable travel by: • Reducing the reliance on the private car and encouraging walking and cycling. • Improving public transport links between settlements within the Borough and to Barnsley Town Centre. • Working with City Region partners to promote good quality public transport linking the Accessibility Improvement Zone to significant places of business, employment • and international interchange on the Leeds to Sheffield City Region corridors, including Wakefield and Rotherham. • Improving direct public transport and freight links to London, Manchester, other Core Cities and the Humber ports. • Considering the improvement of road links where evidence indicates significant	National policy will need to be considered, as there should be some consistency with other areas.

Name of Plan / Programme	Objectives or key requirements of the plan or programme	How objectives and requirements might be taken on board.
	improvements for businesses and local residents. • Ensuring new developments reduce the need for parking provision to a minimum. • Reducing greenhouse gases and other pollutants to improve air quality.	
Doncaster Borough Strategy (2008 – 2025)	The initial strategy was published in 2008, and later refreshed in 2014. The Borough Strategy Vision is: • A strong local economy. • Progressive, healthy, safe and vibrant community. • All residents will be able to achieve their full potential in employment, education, care and life chances. • Pride in Doncaster will have further increased.	Transport cross cuts economic aspirations, social inclusion/access to services, environmental improvements/climate change, health/air quality, and quality of life.
Doncaster Local Development Framework: Core Strategy, 2011-2028	The Core Strategy was adopted in May 2012. Objectives include: • To make best use of existing road, rail and canal links and future developments, our towns, villages and neighbourhoods and international airport to stimulate business growth. • To increase the provision of housing throughout the borough, particularly in areas with access to existing services. • To ensure all residents, visitors and workers benefit from easy access to healthcare, education, employment, shopping, recreation, culture and tourism. • To ensure our towns and villages are safe,	National policy will need to be considered as there should be some consistency with other areas.

Name of Plan / Programme	Objectives or key requirements of the plan or programme	How objectives and requirements might be taken on board.
	clean and are well-connected; to make it possible for people to move easily around and across the borough and to and from neighbouring towns and cities by a range of affordable and accessible transport options.	
Doncaster Economic Growth Plan	The Strategy is designed to ensure that Doncaster continues to build on its achievements, to link communities to the increased opportunity in the Borough and to achieve the 2025 vision to be a city of international significance by closing the £830 million output gap with the England average. The strategy is a living document and is under continuous review. Whilst developing the strategy there was a focus on critical success factors for a city - including Connectivity: physical, telecoms and cultural networks.	The Transport Strategy should aim to utilise Doncaster's transport assets by improving internal connectivity ensuring that access to Doncaster Town Centre, existing and new major development is good. The Transport Strategy could provide improvements to the public transport services (bus) to outlying communities to link local residents to jobs, education, training and other opportunities outside the borough. The Regional Spatial Strategy recognises that the South Yorkshire Region's potential is its accessible location within the country and transport connections including Robin Hood Airport. The Local Transport Strategy where possible, should support Doncaster's partners in the development of the Finningley and Rossington Regeneration Route Scheme (FAARS) to support further economic regeneration and improve public access
Barnsley, Doncaster and Rotherham Joint Waste Plan, March 2012	The objective of the document is to identify what type of large scale strategic waste sites are required and where they should be located. The Plan also covers how waste sites will be delivered and monitored.	The Transport Strategy should support the transportation of waste in more sustainable ways and if possible reduce the number of vehicle movements (rail and water options).
Dearne Valley Eco Vision	The key objective of the document is to ensure the regeneration and economic recovery of the Dearne Valley. This will include; • Delivery of more energy efficient homes • Better public transport links	The Transport Strategy has a key role to play in enabling the objectives of the Dearne Valley to be delivered, especially in relation to 'Growing a low carbon infrastructure'.

Name of Plan / Programme	Objectives or key requirements of the plan or programme	How objectives and requirements might be taken on board.
	• More training opportunities • An enhanced natural environment • Reduce pollution	

Appendix B

Baseline Information – Assessment Stage A2

Contents

B1 Social

B1.1 Social Population

South Yorkshire's population is predicted to increase over the coming years. This reflects a reversal in population decline which has beset the area since the economic downturn of the 1970's and 1980's. A higher population will obviously impact upon the stresses the local transport system is put under. The Transport Strategy will have to respond to this predicted increase.

Age ranges are broadly in line with the national average, however, there are some age ranges which vary from the norm. South Yorkshire has a disproportionate number of 15-29 year olds. This age range accounts for 21.0% of the South Yorkshire population as opposed to 19.1% of the English population. This pattern is reversed in the 30-44 range where South Yorkshire's population is marginally lower than the English average at 18%.1% in comparison to 19.6%.

As South Yorkshire has a lower than the average proportion of 30-44 year olds this may affect the income potential of the region as this age range is known to contribute significantly to the Gross Value Added (GVA) and Gross Domestic Product (GDP).

As with all areas of the country the percentage of elderly people in the sub-region is projected to increase dramatically. It is important that the Transport Strategy considers how its service can be tailored to ensure this democratic group is not disenfranchised.

The male population fell continually from 1991 to 2001, but has since risen dramatically. Nationally and regionally the levels rose gradually over the period 1981 to 2016. The female population fell at a slower rate than the male population, and has also risen more steadily since 2001.

The total number of male and females in South Yorkshire in 2016 is as follows:

- Male = 686,244
- Female = 698,725

B1.2 Social: Settlement Pattern

South Yorkshire's population is focused on the main urban areas of the city of Sheffield and the towns of Barnsley, Doncaster and Rotherham. Whilst Sheffield's population is overwhelmingly focused on the city itself, Barnsley, Doncaster and Rotherham have a far more dispersed settlement pattern.

Due to the legacy of coalmining, where large towns have grown in proximity to coal mines, these three authorities have large towns and villages located some distance from the main urban area. Due to the decline of the coal industry, towns such as Goldthorpe, Maltby, Mexborough, Rossington, Stainforth, Thurnscoe and Wath-upon-Dearne, are now part of an unsustainable settlement pattern, where pockets of high-density residential areas are separated from jobs and services.

As these settlements do not have the critical mass of the main towns of South Yorkshire, they can struggle to maintain adequate facilities to service their populations. The Transport Strategy will have to involve interventions which address the high levels of deprivation suffered in these areas.

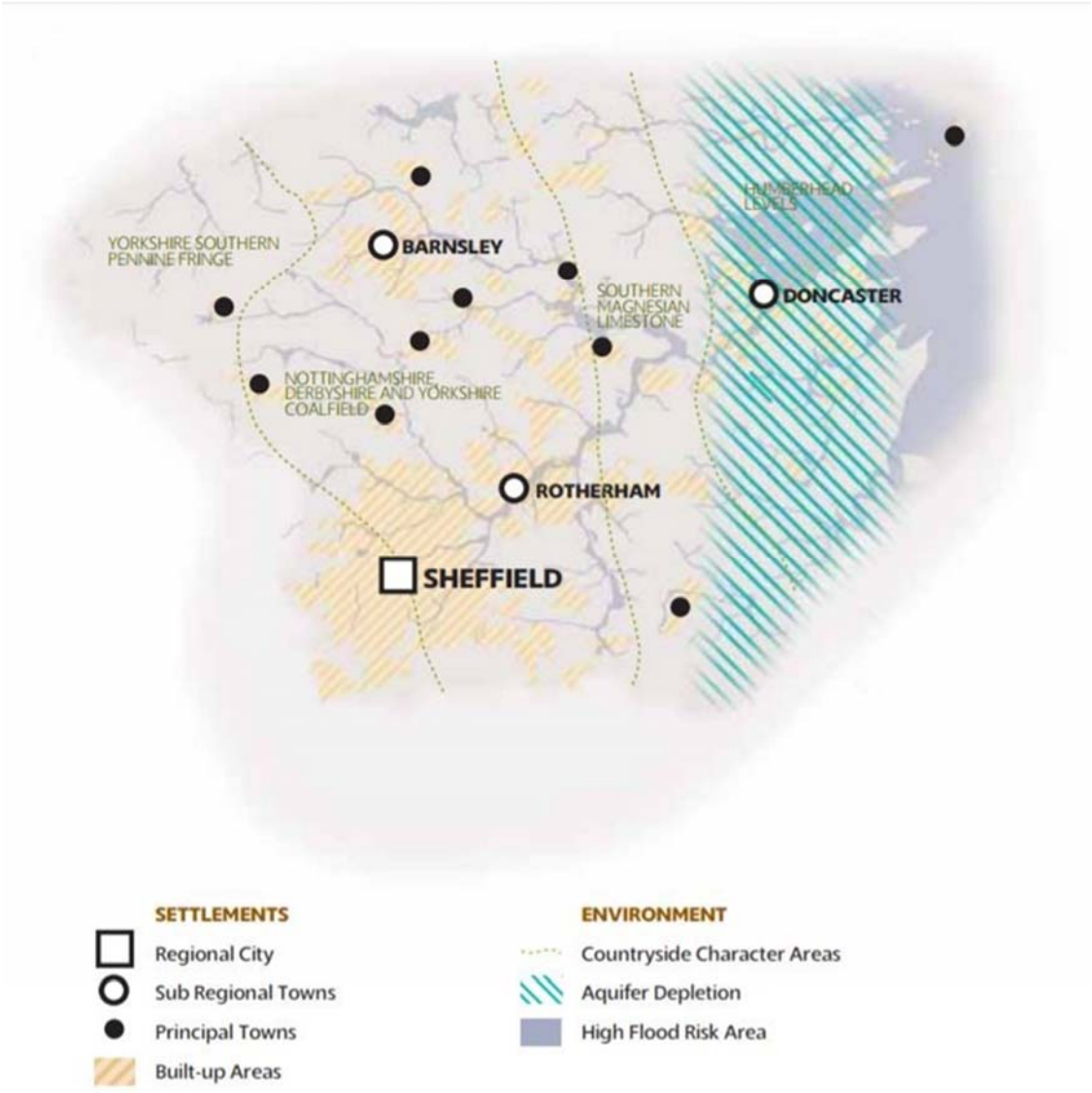

Figure B2.1: Settlement patterns and environment context of South Yorkshire[1]

[1] The Yorkshire and Humber Plan. 2008. Available at http://www.lgyh.gov.uk/Library/EditorDownloads/1%20Y&H%20Published%20RSS%20May%202008.pdf

B1.3 Social: Deprivation

Since 2004 the Government has used Indices of Multiple Deprivation (IMD) as a way of identifying the most 'disadvantaged areas in England' at a local scale (these are called Lower Super Output Areas LSOAs) in order to ensure that resources could be appropriately targeted. The evidence suggests that all South Yorkshire authorities have improved since 2004, particularly Barnsley.

Out of the 326 Local Authorities within England the ranks of the local authorities within South Yorkshire are (where 1 is the most deprived)[2] are as follows:

- Barnsley: 37
- Doncaster: 48
- Rotherham: 62
- Sheffield: 94

Therefore, all the local authorities within South Yorkshire are (as a rank of average score across the whole Local Authority) in the highest 30% for deprivation across the entire country. The IMD infers that there are significant social problems across South Yorkshire. The interventions of the Transport Strategy should be targeted at alleviating the current high levels of deprivation.

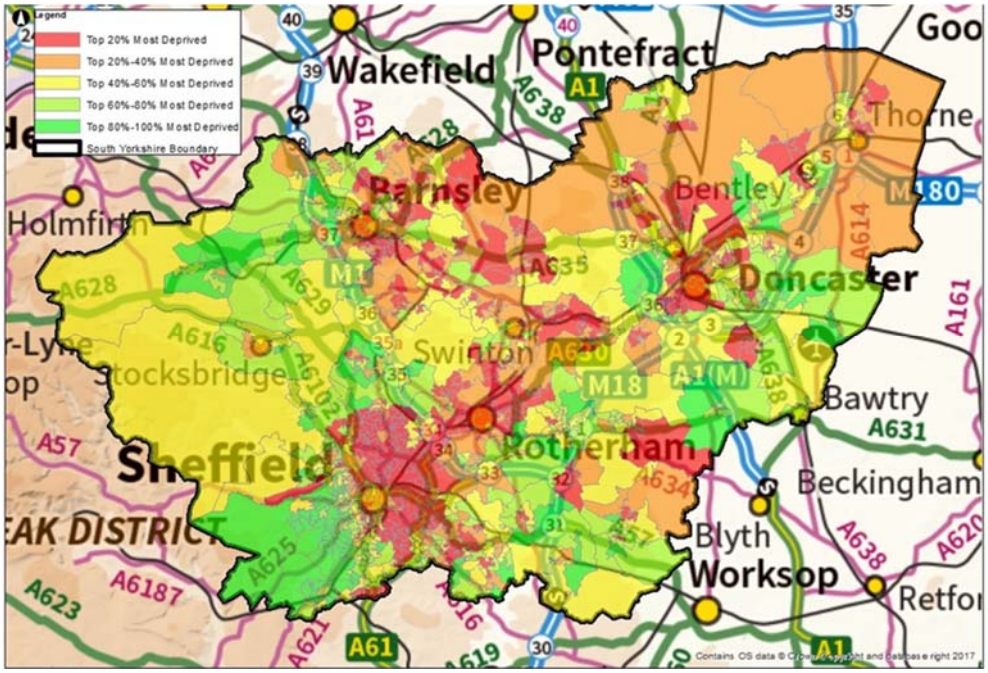

Figure B2.1: 2015 Indices of Multiple Deprivation national ranking within South Yorkshire at the Lower Super Output Area level.

[2] Office of National Statistics. 2015. English idiocies of deprivation 2015. Available at https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015

B1.4 Social: Education

The Sheffield City Region as a whole has a relatively weak skills profile with 30.7% of the working age population having degree level qualifications compared to the English average of 37.9%.

Barnsley, Doncaster and Rotherham also have a weak skills profile in comparison to the English average:

- Barnsley 26.8% are graduates 10.7% have no qualification
- Doncaster 24.7% are graduates 7.9% with no qualification (but a higher than average percentage of people with NVQ level 1 and 2)
- Rotherham 25.2% graduates and 11.7% have no qualifications

All local authorities within South Yorkshire have a greater proportion of the population with no qualifications when compared to the English average of 7.8%. This suggests that there is a skills shortage across South Yorkshire which needs to be addressed. The future interventions of the Transport Strategy should be targeted at ensuring that access to higher education, training and employment opportunities across South Yorkshire are strengthened. This will support economic growth and address the low skills profile of South Yorkshire.

B1.5 Social: Community Safety

Overall South Yorkshire has falling crime rates for the period 2003 to 2017 (2003 being the year that crime data dates back to). The lowest crime rates were observed for the year ending December 2013 with 91,488 reported crimes. This was 44% lower than the highest recorded rates, which were 162,845 for the year ending March 2006. Since December 2013 crime levels have gradually increased again to 121,495 reported crimes for the year ending March 2017. This represents an increase of 33% in reported crimes compared to December 2013 levels. It is evident that there are links between deprivation and crime statistics, with more deprived areas experiencing greater crime rates.

Despite recent progress, Barnsley is within the top 12% of most deprived local authorities nationally. There has been over a 300% increase public order offences between 2003 and 2017, rising from 313 to 1170. This suggests a link between antisocial behaviour, crime and deprivation.

In Barnsley there have been significant reductions in crime. Since 2003 there have been reductions in the following crime classifications (amongst others):

- Vehicle offence (55% reduction)
- Domestic burglary (65% reduction)
- Theft from a person (52% reduction)
- Criminal damage and arson (37% reduction)

In Rotherham over the last three years the overall crime rate has reduced, particularly in the areas of burglary, vehicle offences and criminal damage and arson.

- Overall Crime is down by 15% in comparison to 2003 levels with almost 3,000 less crimes committed annually
- Domestic burglary (51% reduction)
- Non domestic burglary (56% reduction)
- Criminal damage and arson (33% reduction)
- Vehicle offences (57% reduction)

Doncaster has recorded a 16% reduction in overall crime rates, across the borough between since 2003. Doncaster's rates of violent crime and thefts from dwellings are higher than the national average. Overall crime rates and anti-social behaviour remain above the national average within Doncaster, particularly in the most deprived areas.

Sheffield is similar to the average when compared to other cities around England in relation to crime statistics. Since 2003 the following reductions have been recorded:

- Criminal damage and arson (42% reduction)
- Domestic burglary (53% reduction)

Although crime rates have reduced, South Yorkshire Police have reported an increase from 1789 instances of public order offences in 2003 to 6322 instances in 2017.

Area	Burglary	Robbery	Vehicle crime	Violence and sexual offences	Public order offence	All crime
Barnsley	9.2	0.67	9.07	23.14	4.89	81.98
Doncaster	12.8	0.91	10.24	28	4.8	104.36
Rotherham	10.39	0.77	9.39	23.97	4.58	84.43
Sheffield	10.08	1.33	9.67	20.11	4.38	84.34
English Police Force Average	10.59	1.02	9.64	23.12	4.6	88.38

Table B2.1: South Yorkshire crime per 1,000 population for the year ending March 2017

B1.6 Social: Health

The national average for health in relation to obesity among primary school children in Year 6 (National Indicator 56) is 19.8%. Obesity among primary school age children in Year 6 across South Yorkshire is as follows:

- Barnsley: 21.5% (2015/16)
- Doncaster: 19.5% (2015/16)
- Rotherham: 21.8% (2015/16)
- Sheffield: 20.7% (2015/16)

Since 2007/2008 Sheffield has experienced a dramatic increase in Obesity among primary school children in Year 6 with a rise from 17.6% to 20.7%.

Life expectancy (2013-2015) across South Yorkshire is as follows:

- Barnsley: M=77.9. Years F=81.6 Years
- Doncaster: M=77.6 Years F=81.6 Years
- Rotherham: M=78.1 Years F=81.3 Years
- Sheffield: M=78.7 Years F=82.5 Years

For males the Yorkshire and Humber average age 78.6 years. This means that all local authorities with the exception of Sheffield have a lower life expectancy than the regional average. This is also reflected for women, where the regional average is 82.3 years. The English average is 79.5 years for males and 83.1 years for females. All four local authorities in South Yorkshire therefore have a life expectancy below the national average.

The average number of premature death in England is 335 per year (2013-2015) and 363 across Yorkshire and the Humber. Premature deaths across South Yorkshire are as follows:

- Barnsley: 383
- Doncaster: 400
- Rotherham: 385
- Sheffield: 361

In overall health terms, residents of South Yorkshire have higher levels of obesity, shorter life expectancy and higher premature mortality rates than the regional and national averages. The Transport Strategy interventions should be targeted, at ensuring that residents are able to lead active, healthy lifestyles by providing easy access to walking and cycling activities.

B1.7 Health Trends

Barnsley: Smoking prevalence in new mothers is higher than the national average, with 17.6% of new mothers being smokers compared to 10.6% across England. The percentage of physically active is notably lower than the English average at 50.6% compared to 57%. Barnsley average for excess weight in adults is 72.4% as opposed to the 64.8% across England.

Doncaster: Hospital stays for alcohol related harm is significantly higher in Doncaster at 803 compared to 647 across England per 100,000 population and has been rising at a significantly faster rate than the English average since 2008/2009. Doncaster also has a notably higher proportion of smoking related deaths compared to the England average.

Rotherham: Across the local authority there is a significantly greater population classed as carrying excess weight at 76.2% compared to the English average of 64.8%

Sheffield: Greatest concern arises from the inequality of health between the most deprived and wealthiest areas of the city. There is a 9.9 years and 8.1 years’

difference for life expectancy based on inequality for males and females respectively across Sheffield.

There is prevalence of alcohol related illnesses and injuries, smoking and poor physical exercise across South Yorkshire. In addition to this, all authorities are likely to be affected by the impact of an ageing population.

B2 Environmental

B2.1 Environmental: Geology

Geological resources provide the raw materials for buildings, industry, infrastructure, medicines, cosmetics, fuel and water. The South Yorkshire region has significant geological resources including; Limestone, Sand and Gravel, Coal, Clay, Peat, Gas, Coal Mine Methane and Oil. There are also solid geological deposits of Sherwood Sandstone and Limestone within Doncaster and Rotherham which from a major aquifer that is used to meet part of Doncaster's and Rotherham's water needs. The protection of such geology is essential to the water environment and the Transport Strategy where possible, should prevent opportunities for pollution. Sheffield's geology mainly consists of Millstone Grit (Carboniferous) and Pennine Lower Coal Measures. Barnsley has Pennine Middle Coal Measures (Mudstone Sandstone) and deposits of Clay.

There are a number of Local Geological Sites with significant Geodiversity within the South Yorkshire Region. Geodiversity can be defined as the natural range (diversity) of geological features (rocks, fossils minerals and landforms) that determine the landscape character of the natural environment and it is important because it provides us with the raw materials we cannot grow or produce from renewable sources. Essentially Geodiversity links people, landscapes, biodiversity and culture and an appreciation and culture. Many Local Sites (sites of substantive nature conservation value) are also Regionally Important Geological Sties (RIGS) and any transport interventions proposed in the Transport Strategy should aim to protect and where possible enhance such sites.

B2.2 Environmental: Water Quality

Information on water quality has been gather from the Humber River Basin Management Plan (RBMP) (2015). The Water Framework Directive (WFD) requires RBMPs to be produced for each river basin district, detailing the current water quality as well as setting statutory objectives for waterbodies and measures needed to achieve them.

Doncaster falls within the Isle of Axholme catchment, which comprises 12 waterbodies. In accordance with the Water Framework Directive (WFD), nine of the watercourses have a 'Good' Ecological and Chemical status, while three have a 'Poor' Ecological status or potential and 'Fail' Chemical status.

Rotherham lies within the Idle River catchment, comprising 31 waterbodies. Of the 31 waterbodies, 11 have 'Poor' Ecological status or potential, 18 have 'Moderate' Ecological status or potential and two have 'Good' Ecological status or potential. Thirty of the waterbodies have 'Good' Chemical status while one waterbody has a 'Fail' Chemical status.

Barnsley lies within the Dearne catchment. There are 15 surface waterbodies within this catchment, all of which achieve 'Good' Chemical status. Of these 15 waterbodies, two have a 'Poor' Ecological status or potential, 12 have a 'Moderate' Ecological status or potential, and one has achieved a 'Good' Ecological status or potential.

Sheffield lies within two catchments; the Don Middle catchment and Don Upper catchment. The Upper Don catchment includes semi-rural areas north of Sheffield to the edges of the city. Its main tributaries include Scout Dyke, Little Don, Ewden Beck, River Loxley and Rivelin. This catchment comprises 26 waterbodies, all of which have 'Good' Chemical status. Of these 26, one waterbodies has 'Bad' Ecological status or potential, 24 have 'Moderate' Ecological status or potential and one has 'Good' Ecological status or potential.

The Middle Don covers the area from Sheffield in the south west to Coinsbrough in the north eat including Chapeltown, Rawmarsh and Rotherham. The main tributaries are Blackburn Brook, the River Sheaf and Greasborough Dike. The Don Middle catchment comprises 12 waterbodies, all of which have 'Good' Chemical status. Two of the waterbodies have 'Poor' Ecological status, nine have 'Moderate' Ecological status and one has 'Good' Ecological status.

The four authorities in the Transport Strategy should ensure that the potential for pollution of the water environment is minimised as far possible, for example through the implementation of sustainable urban drainage and fuel interceptor balancing ponds, to ensure that the WFD objectives set for the waterbodies are achieved.

B2.3 Environmental: Flooding

Large areas of South Yorkshire including main settlements are located in high flood risk areas. Flooding can have serious impacts upon transport infrastructure and transport links in terms of people being able to travel and damage to infrastructure itself. The Transport Strategy where possible, should prevent flooding and build resilience to flooding.

A Level 1 Strategic Flood Risk Assessment (SFRA) for Doncaster was undertaken in 2015 to update the previous Level 1 assessment carried out in 2009. Flood risk is a significant issue in many parts of the Doncaster MBC area and can arise from a number of sources. These include mainriver flooding from the River Don, Lower Trent and their tributaries. The figure below summaries the number of sites at risk from each flood zone as per the Environment Agency's Flood Map for Planning.

Proposed Development Sites	Number of Sites Within*		
	Flood Zone 2	Flood Zone 3a	Flood Zone 3b
Housing	97	143	5
Employment	26	29	4
Mixed use	8	11	0
Multiple options	8	7	0
Minerals extraction	3	3	0
Gypsy and traveller	0	1	0
Other	3	1	1
TOTAL	**145**	**195**	**10**

*In reality, sites within Flood Zone 3b will also be in Flood Zone 3a and sites within Flood Zone 3a will also be in Flood Zone 2.

Figure B2.3: The number of sites at risk from each flood zone in Doncaster[3]

The Sheffield City Strategic Flood Risk Assessment (SFRA) shows a number of areas of the city in medium and high probability flood zones, such as parts of the City Centre and the Lower Don Valley, as well as areas in Ecclesfield and Chapeltown, as shown in Figure B2.4.

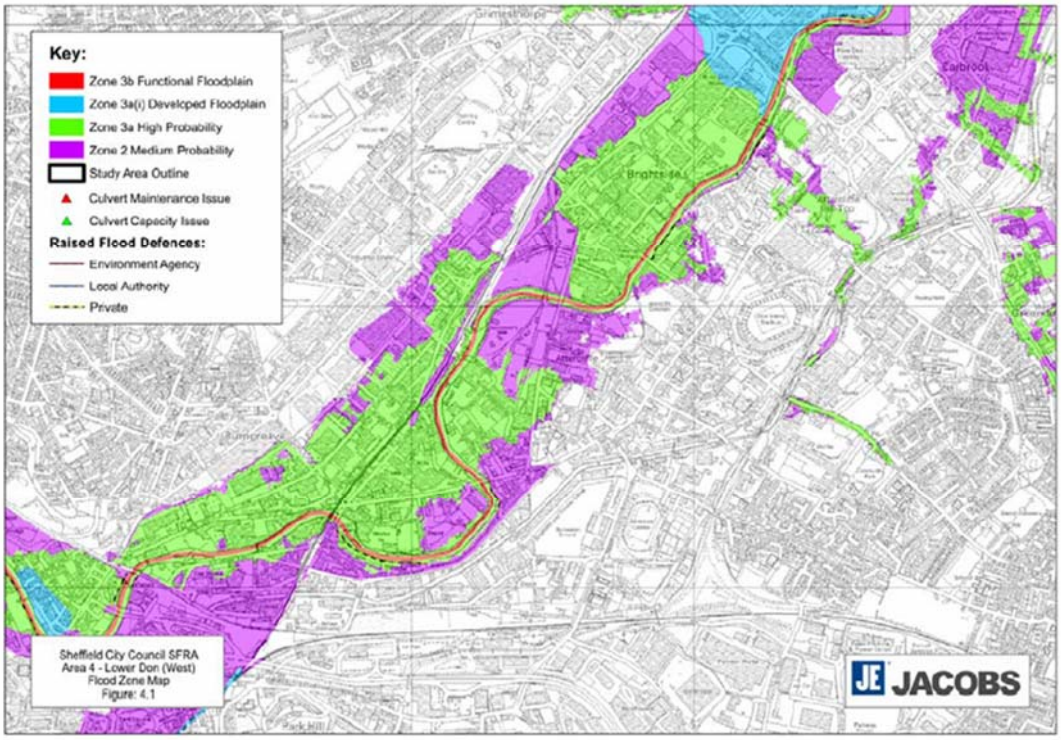

Figure B2.4: Medium and high probability flood zones in Sheffield[4]

[3] JBA Consulting (2015) Doncaster MBC Level 1 Strategic Flood Risk Assessment. Available at http://www.doncaster.gov.uk/services/planning/development-and-floodrisk [accessed 31/08/17]
[4] Jacobs (2008) Sheffield City Council Strategic Flood Risk Assessment (SFRA) Level 1. Available at https://www.sheffield.gov.uk/content/dam/sheffield/docs/public-health/floods/Strategic%20Flood%20Risk%20Assessment%20Level%201 [accessed 31/08/17]

The flood event of 2007 affected 1400 residential properties in Sheffield. It is considered that most of the flooding was from fluvial flooding (from water courses), with 5% from surface water runoff and sewer flooding. In addition, the floods caused extensive damage and loss of riverside habitats.

Rotherham's Level 1 SFRA indicated that a proportion of the Rotherham Borough is at risk of flooding. The risk of flooding posed arising from a number of sources including river flooding, localised runoff, sewer and groundwater flooding. Figure B2.5 shows the areas of Rotherham with a medium and high risk of flooding.[5]

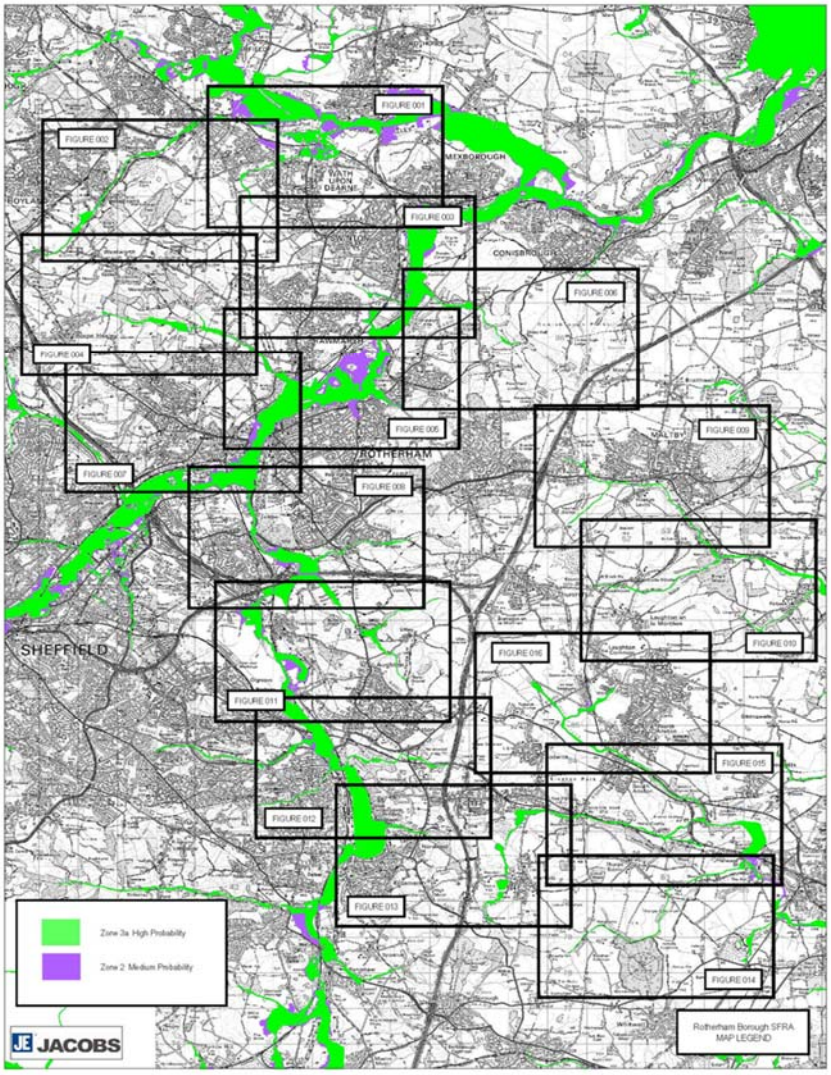

Figure B2.5: Medium and high probability flood zones in Rotherham

[5] Jacobs (2008) Rotherham Metropolitan Borough Council: Strategic Flood Risk Assessment (SFRA) Level 1

A Level 1 SFRA was undertaken for Barnsley in 2010. Flood risk across the Barnsley borough is inextricably linked to the River Dearne and Upper Don and their tributaries. The SFRA indicates that the majority of the proposed development sites been brought forward are located within Flood Zone 1 (low probability of river or sea flooding in any year). Consequently, flooding is not considered a strategic issue in Barnsley.

B2.4 Environmental: Soil

The Agricultural Land Classification (ALC) maps produced by the Department for Environment and Rural Affairs (DEFRA) have been used to identify the soil quality in the South Yorkshire region. The ALC system classifies land into five grades, with Grade 3 subdivided into Subgrades 3a and 3b. The best and most versatile land is defined as Grades 1, 2 and 3a. As shown in Figure B2.6, there are significant areas of high quality agricultural land within South Yorkshire.

In Doncaster, particularly in the north- south belt along the magnesian limestone ridge is classified as Grade 2 land, whilst the east of the borough contains some areas of grade 4 land. Sheffield's agricultural land classification shows that outside the city core to the North West towards Stocksbridge there is substantial deposits of grade 3 agricultural land (good to moderate) and to the south/south east towards Eckington there is also deposits of grade 3 agricultural land. The majority of Rotherham and Barnsley is classed as grade 3 agricultural land.

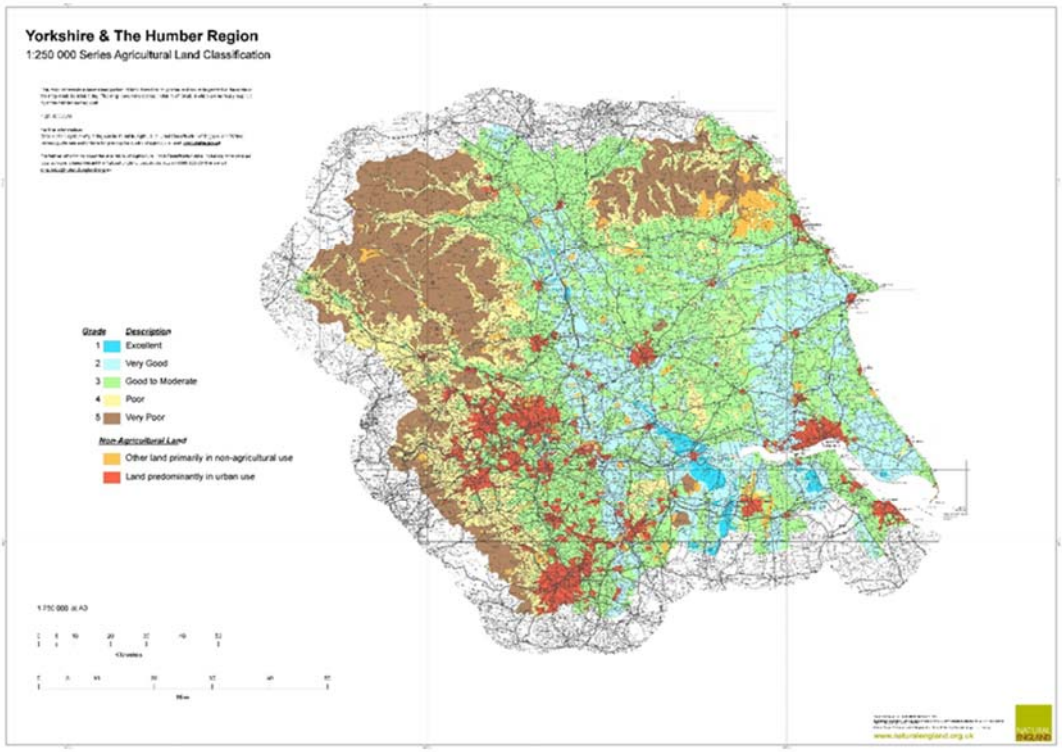

Figure B2.6: Agricultural Land Classification across Yorkshire and the Humber Region[6]

The Transport Strategy and the delivery of transport related projects should where possible aim to retain agricultural land in particular the most important grades (Grade 1-3a) and encourage good management of soils during construction in order to prevent soil pollution and damage to the soil structure.

B2.5 Environmental: Landscape Character

Both Sheffield and Barnsley lie within the Peak District National Park. The majority of South Yorkshire is designated Green Belt with the exception of the east of Doncaster and west of Sheffield. There are no Areas of Outstanding Natural Beauty (ANOB) within South Yorkshire.

Doncaster lies within National Character Area (NCA) 39: Humberhead Levels. The Humberhead Levels is a flat, low-lying and large scale agricultural landscape bounded to the west by the low ridge of the Southern Magnesian Limestone and to the east by the Yorkshire Wolds (north of the Humber) and the Northern Lincolnshire Edge with Coversands (south of the Humber). To the north it merges into the slightly undulating landscape of the Vale of York, at the line of the Escrick Moraine, and in the south it merges into the Trent and Belvoir Vales and Sherwood.

Doncaster's Landscape Character Assessment (Ecus, 2007) has identified the following character areas:

[6] Natural England (2010) Agricultural Land Classification Yorkshire and The Humber (ALC003). Available at http://publications.naturalengland.org.uk/publication/130043 [accessed 31/08/17]

- Coalfields Farmland;
- Limestone Plateau;
- Settled Clay Farmlands;
- Peat Moorlands;
- River Valley Carrlands;
- Limestone River Valley; and
- Sandland Heaths and Farmland.

Sheffield lies on the boundary between NCA 37: Yorkshire Southern Pennine Fringe and NCA 38: Nottinghamshire, Derbyshire and Yorkshire Coalfield. NCA 37 is a transitional landscape rom the upland areas of the Southern Pennines NCA in the west through to the low-lying land of the Nottinghamshire, Derbyshire and Yorkshire Coalfield NCA to the east. The landscape comprises 'gritstone' industrial towns and villages with strong valley forms and pastoral agriculture of the Pennine foothills. The landscape is dominated by industrial buildings and structures such as factories, chimneys, railways and canals.

Rotherham and Barnsley also lie within NCA 38. NCA 38 is an area that has experienced great change over the past few centuries, with the visual and ecological landscape heavily influenced by industrialisation. The area is generally low-lying, with hills and escarpments above wide valleys, the landscape embraces major industrial towns and cities as well as villages and country side. Over half of the NCA (64%) is currently designated greenbelt land.

Barnsley's Landscape Character Assessment (ECUS, 2002) has identified the following landscape character types

- Unenclosed Moorland;
- Upland River Valleys;
- Lowland River Floors;
- Settled Arable Slopes;
- Settled Wooded Farmland; and
- Upland Farmland.

Rotherham's Landscape Character Assessment (The Landscape Partnership, 2010) identified eleven landscape character areas (as shown in Figure B2.7):

- Wentworth Parklands
- Dearne Valley Floor
- Wath and Swinton Farmlands
- Don Valley Floor
- Coalfield Tributary Valleys
- Rother Valley Floor
- Central Rotherham Coalfield Farmland
- East Rotherham Limestone Plateau
- Sandbeck Farmlands
- Ryton Farmlands
- Rother Valley Reclaimed Woodland

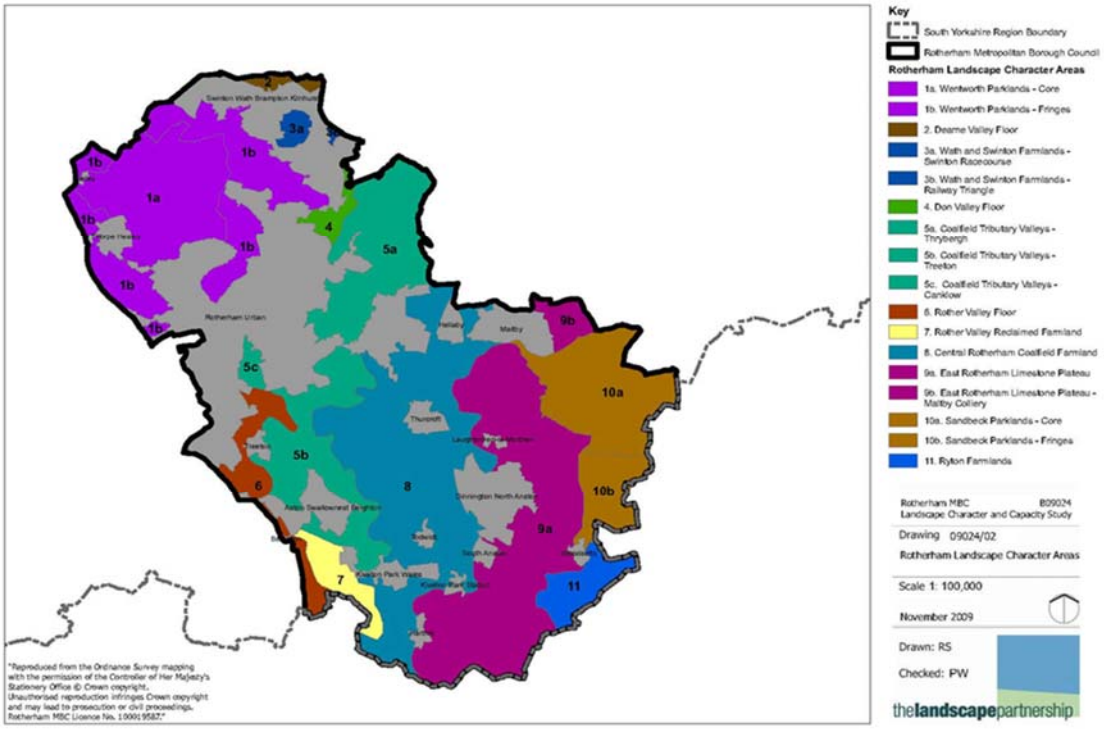

Figure B2.7: Rotherham Landscape Character Areas[7]

B2.6 Environmental: Light Pollution

Light pollution at night, caused by artificial lighting on existing and new development from domestic homes, traffic, street lighting, security lighting, illuminated signage, advertising and sports events can have an impact on the natural and biological environment. Light pollution can affect our own lives through loss of sleep or disturbed sleep, effect how nature grows (especially species which are controlled by the length of the day), cause some nocturnal species to be disturbed and impact on the appearance of our night sky, making it appear brighter, a term often referred to as 'sky glow'.

The Campaign to Protect Rural England (CPRE) have undertaken extensive research into night pollution, and have used satellite imagery to document the change in our night sky's from 1993 – 2000. The light map shown in Figure B2.8 for the Yorkshire and Humber Region demonstrate that from 1993 to 2000 there was an increase in low to medium levels of light pollution (the dark and light blue areas). The light pollution evidence gathered by the CPRE includes all types of light pollution and is not based solely on transport. It is also important to note that this information is now ten years old and there is no other evidence which supersedes this research. Therefore, it is difficult for this study to reflect the current situation including the application of new Government guidance, industry

[7] The Landscape Partnership (2010) Rotherham Landscape Character Assessment and Landscape Capacity Study to Inform the LDF Process for Rotherham Borough Council. Available at http://www.rotherham.gov.uk/corestrategyexamination/downloads/file/440/leb29_landscape_character_assessment_and_landscape_capacity_study_2010 [accessed 31/08/17]

regulation or best practice since 2000. However it is acceptable to assume that there will be some degree of impact on the landscape from light pollution associated with transport. Therefore, it is important that all new development associated with the Transport Strategy should include a lighting strategy, with the aim of maintaining environmentally sustainable lighting, which minimises the visual effects by day and night whilst maintaining safety standards.

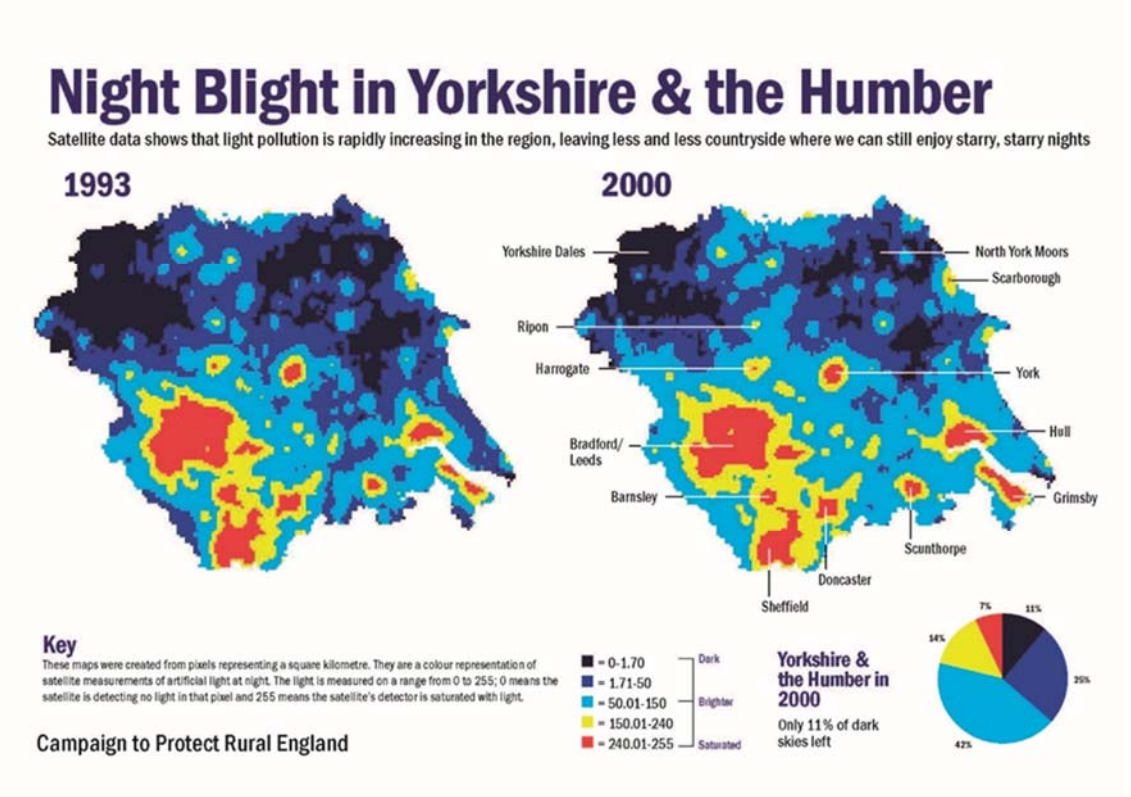

Figure B2.8: Night Blight in Yorkshire & the Humber

B2.7 Environmental: Tranquillity

CPRE has undertaken a study to identify the level of tranquillity within the South Yorkshire Region. The study involved identifying what tranquillity means to people and their perceptions of what is most likely to add to (hearing birdsong, peace and quiet, stars at night, the sea, streams, wildlife etc.) and detract from tranquillity (noise from vehicles, lots of people, low flying aircraft, power lines, roads, urban development etc.).

The map in Figure B2.9 shows that the least tranquil places within the south Yorkshire Region is near the main urban areas. Very few areas are considered to be 'most tranquil' other than those which are located near the European Sites of Nature Conservation (Thorne and Hatfield Moors SAC and SPA, the Peak District Moors SPA and South Pennine Moors SPA and SAC. Where opportunities arise within the Transport Strategy tranquillity should be considered by accounting for factors which improve health and wellbeing.

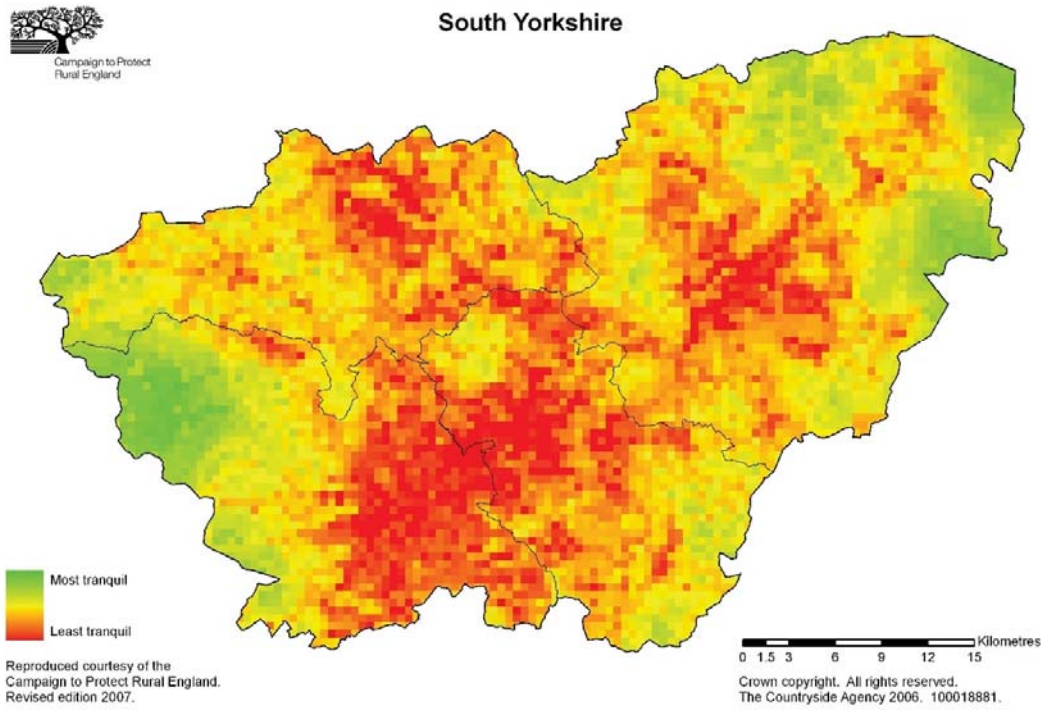

Figure B2.9: Tranquillity across South Yorkshire[8]

B2.8 Environmental: Cultural Heritage

Within South Yorkshire there is a wide variety of listed buildings, conservation areas, scheduled monuments, historical parks and gardens and archaeology. Table B2.2 below shows the heritage features within Sheffield, Doncaster, Rotherham and Barnsley. A significant proportion of buildings of historical interest are located within the main urban environment and as such, are often susceptible to various forms of air pollution from urban living including traffic. The Transport Strategy should aim to minimise such impacts where possible.

[8] Campaign to Protect Rural England (2007) Tranquillity Map: South Yorkshire. Available at http://www.cpre.org.uk/resources/countryside/tranquil-places/item/1800- [accessed 31/08/17]

Local Authority	Number of Listed Buildings	Number of Conservation Areas [TBC]	Number of Scheduled Monuments	Number of Registered Parks and Gardens
Barnsley	670 (13 Grade I, 30 Grade II* & 627 Grade II)	18	23	4
Doncaster	796 (28 Grade I, 33 Grade II* & 735 Grade II)	46	49	4
Rotherham	526 (16 Grade I, 36 Grade II* & 471 Grade II)	26	37	4
Sheffield	1,165 (5 Grade I, 67 Grade II* & 1,093 Grade II)	38	46	11

Table B2.2: Heritage features within local authority

B2.9 Environmental: Waste

Table B2.3 below shows the total waste produced and disposal methods in South Yorkshire from 2012/2013 to 2015/2016. There has been an increase in the amount waste produced across South Yorkshire.

Year	Local Authority	Total local authority collected waste (tonnes)	Household - total waste (tonnes)	Household - waste sent for recycling/ composting/reuse	Household - waste not sent for recycling (tonnes)	Non-household - total waste (tonnes)	Non-household - waste sent for	Non-household - waste not sent for recycling (tonnes)	Land-filled	Incineration with EfW	Recycled/ Composted	Other[1]
2015 / 2016	Barnsley MBC	111,546	100,989	45,806	55,183	10,556	4,056	6,500	9,908	38,061	49,862	13,070
2014 / 2015	Barnsley MBC	109,767	99,829	53,152	46,677	9,938	4,185	5,753	9,081	39,143	57,337	4,205
2013 / 2014	Barnsley MBC	109,049	98,408	50,748	47,660	10,640	5,666	4,974	8,893	43,645	56,414	0
2012 / 2013	Barnsley MBC	107,532	97,362	48,836	48,526	10,170	5,222	4,948	28,323	19,485	54,058	6,385
2015 / 2016	Doncaster MBC	158,502	137,467	62,556	74,912	21,035	9,826	11,209	23,314	39,500	72,382	23,306
2014 / 2015	Doncaster MBC	160,612	140,471	57,012	83,460	20,141	8,553	11,588	87,638	7,474	65,564	-69
2013 / 2014	Doncaster MBC	154,405	136,521	54,828	81,693	17,884	8,687	9,196	89,318	1,395	63,515	172
2012 / 2013	Doncaster MBC	156,697	143,468	59,204	84,264	13,229	7,549	5,680	79,789	3,481	66,753	8,266
2015 / 2016	Rotherham MBC	119,703	111,565	45,641	65,924	8,138	5,723	2,415	6,016	44,370	51,364	17,952
2014 / 2015	Rotherham MBC	118,607	110,411	41,558	68,853	8,196	5,722	2,474	39,360	28,482	47,280	3,484
2013 / 2014	Rotherham MBC	119,416	108,025	44,131	63,894	11,391	7,411	3,980	40,464	27,243	51,542	167
2012 / 2013	Rotherham MBC	117,322	107,369	46,396	60,973	9,953	4,638	5,315	37,026	24,476	51,034	6,367
2015 / 2016	Sheffield City Council	202,461	191,239	55,245	135,994	11,222	1,559	9,663	11,812	133,844	56,804	0
2014 / 2015	Sheffield City Council	197,094	185,301	55,543	129,758	11,793	2,671	9,122	13,460	125,424	58,213	-1
2013 / 2014	Sheffield City Council	194,810	184,166	55,646	128,519	10,645	1,392	9,253	14,328	123,447	57,038	0
2012 / 2013	Sheffield City Council	193,257	187,012	52,113	134,899	6,245	536	5,709	12,545	128,059	52,649	0

Table B2.3 Household Waste Production & Disposal Methods

The Barnsley, Doncaster and Rotherham Joint Waste Plan (2012) sets out the strategy for providing waste management facilities over the period to 2026. Trends show that the amount of waste produced each year has been steadily increasing and the region faces a significant shortfall of suitable recycling and treatment capacity.

By 2026, Barnsley, Doncaster and Rotherham must provide sufficient new waste management facilities to meet the capacity shortfall of around 517,000 tonnes of recycling, treatment and recovery capacity for municipal, commercial and industrial waste. Figure B2.10 shows the total new municipal, commercial and industrial recycling, treatment and recovery capacity requirements to meet future shortfall).

Additional recycling, composting and treatment capacity	2010	2015	2021	2026
Municipal waste	0	167	324	337
Commercial and industrial waste	237	132	155	180
Total	237	299	479	517

Figure B2.10: Total new municipal, commercial and industrial recycling treatment and recovery capacity requirements to meet future shortfall (thousand tonnes per year)[9]

The Transport Strategy should consider the potential for the movements of waste by road, rail and water in order to minimise any environmental impacts associated with the movement of waste, and how transport initiatives may contribute to the strategic distribution of waste management facilities.

B2.10 Environmental: Biodiversity

There are significant areas of biodiversity throughout the South Yorkshire region, including sites of European importance for nature conservation (Special Areas of Conservation (SAC) and Special Protection Areas (SPAs)). SACs are designated for their importance for habitats and SPAs are designated from their importance for birds. The following European sites lie within South Yorkshire (as shown in Figure B2.11):

- Hatfield Moors SAC and SPA;
- Thorne Moors SAC and SPA;

[9] Barnsley, Doncaster and Rotherham Joint Waste Plan (2012) Available at http://www.doncaster.gov.uk/services/planning/barnsley-doncaster-rotherham-joint-waste-plan [accessed 29/08/17]

- Peak District Moors (South Pennine Moors) SPA; and Peak District South Pennine Moors SPA and SAC.

Figure B2.11: European sites in South Yorkshire

Hatfield Moor SAC

Hatfield Moor SAC is designated due to the presence of degraded raised bogs that are capable of natural regeneration. Hatfield Moor is a remnant of an extensive lowland raised bog which once occupied the Humber levels. Historical peat extraction on the site means little of the original habitat remains however, since mineral working ceased the bog is being restored. The site includes birch woodland, dwarf shrubs such as heathers, bog species and sphagnum mosses. It is also notable for its invertebrate species including the Mire Pill Beetle.

Thorne Moor SAC

Thorne Moor SAC is designated due to the presence of degraded raised bog considered capable of regeneration. It is the largest area of this habitat type in the country. Due to restoration work, a small proportion of the site contains active raised bog, a second reason for the site designation. A variety of species are present including Sphagnum Mosses, Cotton Grasses, Heather, Cranberry and Bog Rosemary.

Thorne and Hatfield Moor SPA

Thorne and Hatfield SPA is an extensive lowland raised mire system adjacent to the Humber estuary and is the largest remaining peatland in England. The site is designated as an SPA as the area supports a population of Nightjar (protected bird) during the breeding season, representing 1.9% of the breeding population in the UK.

Peak and District Moors (South Pennine Moors Phase 1) SPA

The Peak and District Moors site is an extensive track of moorland and moorland-fringe habitat. The site is designated as an SPA for having significant breeding populations of the following important bird species:

- Merlin
- Short Eared Owl
- Golden Plover

South Pennine Moors SAC and SPA

South Pennines Moors is designated as an SAC for the presence of dry heath, blanket bog and old sessile oak woods. The moors support a rich invertebrate fauna, especially moths, and important bird communities. The site is also designated as an SPA for having significant breeding populations of the following important bird species:

- Merlin
- Short Eared Owl
- Golden Plover

Site Name	Conservation Objectives
Thorn Moors SAC (UK0012915) Hatfield Moors SAC (UK0030166)	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring: • The extent and distribution of qualifying natural habitats • The structure and function (including typical species) of qualifying natural habitats, and • The supporting processes on which qualifying natural habitats rely
Thorn and Hatfield Moors SPA (UK9005171)	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring; • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.
Peak District Moors (South Pennine Moors	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

Site Name	Conservation Objectives
Phase 1) SPA (UK9007021)	• The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.
South Pennine Moors SAC (UK0030280)	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; • The extent and distribution of the qualifying natural habitats • The structure and function (including typical species) of the qualifying natural habitats, and, • The supporting processes on which the qualifying natural habitats rely
South Pennine Moors Phase 2 SPA (UK9007022)	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring; • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site.

Table B2.4 SAC and SPA Conservation Objectives

Table B2.5 below shows the Sites of Special Scientific Interest (SSSI) that are present within South Yorkshire.

Authority	Sites of Special Scientific Interest (SSSI)
Rotherham	Anston Stones Wood Lindrick Golf Course Maltby Low Common, Roche Abbey Woodlands Wood Lee Common (designated for geology) Bradgate Brickworks (geology)
Barnsley	Dark Peak Stairfoot Brickworks Pye Flatts Meadows Carlton Main Brickworks and Spring Meadows, Alderman's Head & Cow Croft Meadows
Doncaster	Cadeby Quarry (geology) Edlington Wood (geology) Denaby Ings New Edlington Brickpit Potteric Carr Owston Hay Meadows Sandall Beat Shirley Pool, Sprotbrough Gorge Went Ings Meadows Bilham Sand Pits (geology)

Authority	Sites of Special Scientific Interest (SSSI)
	Ashfield Brick Pits (geology)
Sheffield	Canyards Hills Neepsend Brickworks Stannington Ruffs Totley Wood Neepsend Railway Cutting East Peak District Moors

Table B2.5 SSSIs in South Yorkshire

Each local authority has adopted a local Biodiversity Action Plan (BAP) which outlines the wildlife conservation priorities for their respective areas and provided guidance on how such environments can be protected an enhance biodiversity.

The location and design of transport projects have the potential to impact upon the integrity of such sites, through habitat loss, habitat fragmentation, population, habitat disturbance and creation of barriers. Other secondary Other secondary effects such as flooding, Nitrogen deposition and increase recreational pressure (through disturbance of habitats through increased walking and cycling activities) can affect the ecosystem and the capacity of the species which live there. Therefore, such projects must where possible seek to avoid negative impacts and provide opportunities to enhance the natural environment through creating green links to other open spaces and Green Infrastructure. The Transport Strategy must ensure that the requirements of the Birds and Habitats Directive are met. (i.e. there should be no loss to the European Sites).

The flooding event of 2007 caused extension damage to Sheffield's biodiversity, both as a direct result of the flood and as a result of the subsequent repair of the flood risk management work.

B2.11 Environmental: Air Quality

Air quality can be affected by many factors; these can include emissions from industrial processes, domestic sources and transport. Since 1997, each local authority within the UK has been carrying out a review and assessment of air quality in their area, to ensure that the National Air Quality Objectives and European Directive limit and target values10 are met. If a local authority finds any places where the objectives are not likely to be achieved, it must declare an Air Quality Management Area (AQMA) and put a Local Air Quality Action Plan in place to improve air quality.

Sheffield City Council declared a city wide AQMA covering the entire eastern part of the city containing the major built up areas for annual and 1-hour nitrogen dioxide objectives and the 24-hour PM10 objective.

Rotherham Metropolitan Borough Council has declared the following AQMAs:

[10] National air quality and European Directive limit and target values for the protection of human health

AQMA	Description	Date Declared	Date Revoked	Pollutants
Rotherham AQMA No.1 (Part 4)	An area extending the 2001 AQMA - encompassing the area next to the M1 around Barber Wood Road and New Droppingwell Road in Blackburn.	26/04/2010	-	Nitrogen dioxide NO_2
Fitzwilliam Road (NO2) AQMA	An area encompassing properties along the Fitzwilliam Road, Rotherham between the St Ann's roundabout and the Mushroom roundabout.	19/11/2004	-	Nitrogen dioxide NO_2
Wellgate (NO2) AQMA	An area along Wellgate, Rotherham between Clifton Bank and Hare Road (extending NE/SW as far as Clifton Lane and Warwick Street).	19/11/2004	-	Nitrogen dioxide NO_2
Wortley Road (NO2) AQMA	An area encompassing the Wortley Road and surrounding properties between it's junction with the Old Wortley Road and the roundabout with Wilton Gardens	19/11/2004	03/10/2010	Particulate Matter PM_{10}
Rotherham AQMA 1 - Part 3 (NO2)	An area of Wales, Rotherham encompassing a small number of properties on either side of the M1 where the B6059, School Road crosses the motorway.	07/07/2003	-	Nitrogen dioxide NO_2
Rotherham AQMA 2 SO2	An area of housing in Brampton Bierlow encompassed by Pontefract Road, Milking Lane and the parish boundary running along Knoll Beck.	07/07/2003	20/09/2007	Sulphur dioxide SO_2
Rotherham AQMA 1 - Part1 (NO2)	An area along the M1 between Upper Whiston (in the east) and the boundary with Sheffield City Council to the west and extending on either side to encompass Brinsworth Catcliffe	01/01/2002	-	Nitrogen dioxide NO_2
Rotherham AQMA 1 - Part 2 (NO2)	An area to the west of the M1 motorway between Meadowbank Road to the south and New Droppingwell Road to the north and extending east to West Hill Kimberworth.	01/01/2002	-	Nitrogen dioxide NO_2

Table B2.6: AQMAs in Rotherham

Doncaster Metropolitan Borough Council have declared the following AQMAs:

AQMA	Description	Date Declared	Date Revoked	Pollutants
AQMA No. 7	Hickleton, along the A635, Barnsley Road.	08/12/2014		Nitrogen dioxide NO_2
AQMA No. 6	The village of Skellow, along the A1, including Hill Crest, Howden Avenue and Crabgate Lane and other adjacent roads.	23/09/2013		Nitrogen dioxide NO_2
AQMA No 5	Incorporating parts of the village of Conisborough, namely Low Road, Doncaster Road and Sheffield Road and other roads adjacent to those listed.	01/04/2012		Nitrogen dioxide NO_2
AQMA No.4	Along a section of the M18 Motorway, crossing the A638 Bawtry Road extending into the Hatchell Wood area up to Warning Tongue Lane.	01/06/2003		Nitrogen dioxide NO_2
AQMA No.1	Central Doncaster, alongside the A630	01/08/2001		Nitrogen dioxide NO_2
AQMA No.2	An area surrounding Junction 36 of the A1(M) and extending along the A18 eastwards into Doncaster town centre.	01/08/2001		Nitrogen dioxide NO_2
AQMA No.3	Along a section of the A18 between the junctions with the A638/Bawtry Road and A638 Trafford Way.	01/08/2001		Nitrogen dioxide NO_2

Table B2.7: AQMAs in Doncaster

Barnsley Metropolitan Borough Council has declared the following AQMAs:

AQMA	Description	Date Declared	Date Revoked	Pollutants
Barnsley AQMA No.6	Incorporating the A616 road through Langsett	27/10/2016		Nitrogen dioxide NO_2
Barnsley AQMA No.7	Incorporating the southbound carriageway of the A61 Sheffield Road adjacent to the junction with the A6133 Cemetery Road	30/08/2012		Nitrogen dioxide NO_2
Barnsley AQMA No.4	An area encompassing the southbound carriageway of the A61 Harborough Hill Road from the "PC World" gyratory to the southbound slip road of the A61 near to its junction with Queens Road	07/07/2008		Nitrogen dioxide NO_2
Barnsley AQMA No.5	An area encompassing the junction of Rotherham Road and Burton Road.	07/07/2008		Nitrogen dioxide NO_2
Barnsley AQMA No.2A	An area encompassing the A628 from junction 37 of the M1 to Town End roundabout, including part of Summer Lane	16/06/2005		Nitrogen dioxide NO_2

	from Town End roundabout to Wharncliffe Street.			
Barnsley AQMA No.2B	An area encompassing the A628 from junction 37 of the M1 to Dodworth Level Crossing.	16/06/2005		Nitrogen dioxide NO_2
Barnsley AQMA No.3	An area encompassing the junction of the A61 Wakefield Road and Burton Road.	16/06/2005		Nitrogen dioxide NO_2
Barnsley AQMA No.1	An area along the M1 between Junction 35a and Junction 38, including Haigh, Darton, Cawthorne Dike, Higham, Dodworth, Gilroyd, Rockley, Birdwell, and Tankersley. The area extends 100m either side of the central reservation.	03/10/2001		Nitrogen dioxide NO_2

Table B2.8: AQMAs in Barnsley

Where possible, the Transport Strategy should encourage other modes of transport for travel, such as walking and cycling) and plan for other transport interventions which reduce the reliance on private car.

B2.12 Environmental: Noise

Traffic can be a major cause of noise and vibration which can adversely impact on human health, quality of life and biodiversity. The Environmental Noise (England) Regulations 2006 (as amended) requires noise from major roads, railways, airports and large urban areas (known as agglomerations) to be mapped. The Department for Environment Food and Rural Affairs (DEFRA) has undertaken carried this work in order to provide road and rail operators with evidence on the best way in which to deal with the impacts of noise through Noise Action Plans. Round 2 strategic noise mapping was undertaken in 2012.

For the major roads covered by the Round 2 mapping, the estimated number of people (rounded to the nearest thousand) located outside agglomerations and falling within various noise level bands are shown in Figure B2.12 below.

Table 2: Estimated number of people above various noise levels due to noise from major roads outside agglomerations, L_{den}

Noise Level (L_{den}) (dB)	Number of People
≥55	3,108,000
≥60	1,469,000
≥65	810,000
≥70	295,000
≥75	22,000

Table 3: Estimated number of people above various noise levels due to noise from major roads outside agglomerations, L_{night}

Noise Level (L_{night}) (dB)	Number of People
≥50	1,974,000
≥55	969,000
≥60	357,000
≥65	33,000
≥70	2,000

Table 4: Estimated number of people above various noise levels due to noise from major roads outside agglomerations, $L_{A10,18h}$

Noise Level ($L_{A10,18h}$) (dB)	Number of People
≥55	2,359,000
≥60	1,326,000
≥65	831,000
≥70	383,000
≥75	58,000

Figure B2.12: Estimated number of people above various noise levels due to road[11]

It has been decided that the Important Areas (IA) with respect to noise from major roads will be where 1% of the population[12] that are affected by the highest noise levels from major roads are located according to the results of the strategic noise

[11] DEFRA (2014) Noise Action Plan: Roads (Including Major Roads). Available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/276237/noise-action-plan-roads-201401.pdf [accessed 29/08/17]

[12] For major roads the total population if the number of people within the 50 dB $L_{A10,18h}$ contour outside agglomerations according to the results of the strategic noise mapping and the 2011 census.

mapping. Populations are these locations are likely to be at the greatest risk from experiencing a significant adverse impact of health and quality of life as a result of their exposure to road traffic noise.

Within South Yorkshire, there are the following number of NIAs, as shown on Figure(s) below:

- 72 NIAs in Sheffield (Figure B2.13)
- 60 NIAs in Doncaster (Figure B2.14)
- 42 NIAs in Barnsley (Figure B2.15)
- 50 NIAs in Rotherham (Figure B2.16)

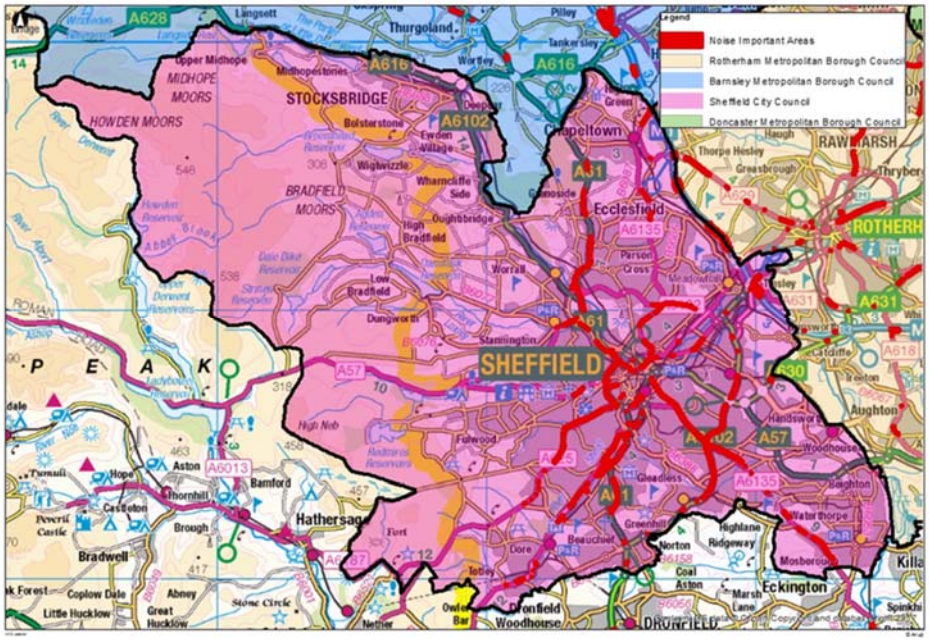

Figure B2.13: Noise Important Areas in Sheffield

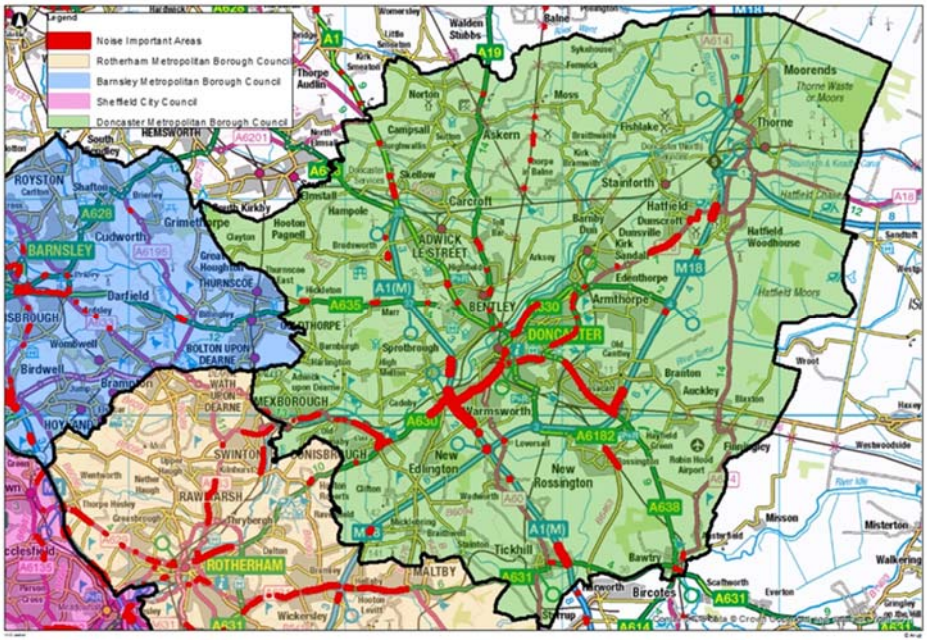

Figure B2.14: Noise Important Areas in Doncaster

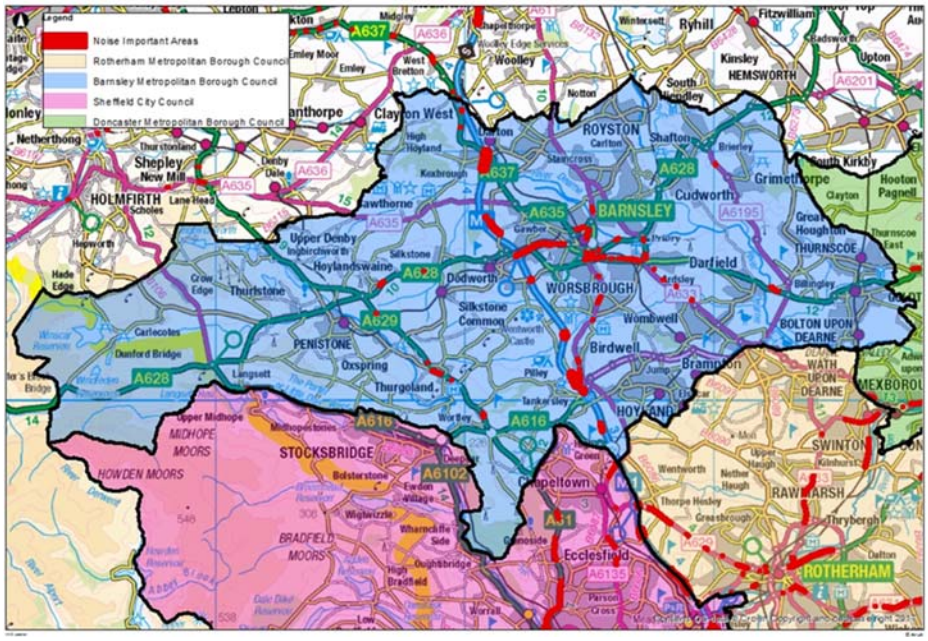

Figure B2.15: Noise Important Areas in Barnsley

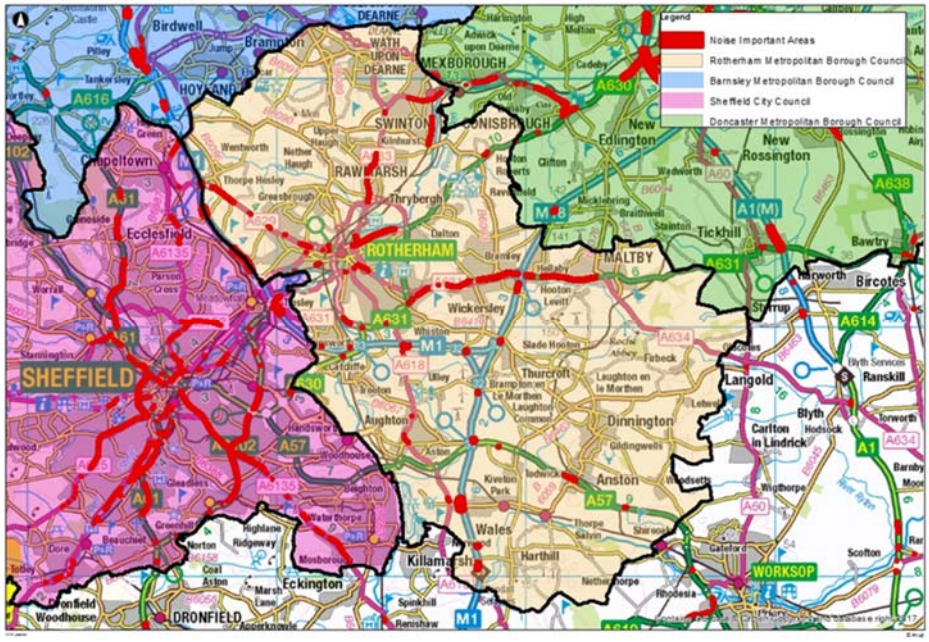

Figure B2.16: Noise Important Areas in Rotherham

Highways interventions could result in increasing volumes of traffic and noise generation, as increased volumes will mean that noise form traffic becomes more frequent (noise over a longer period of time but not necessarily higher noise levels). Therefore, the Transport Strategy should where possible manage noise to deliver the measures set out in the Noise Action Plans.

B2.13 Environmental: Mineral Extraction

Minerals are a nationally important natural resource which can only be worked where they naturally occur. Mineral workings can be substantial generators of heavy traffic often in rural locations. Hence one of the most controversial issues surrounding Mineral extraction is how the mineral is transported away from the site to its final destination. The Transport Strategy should consider the potential for the movement of Minerals by other methods or measures (rail and canal) in order to reduce any environmental impact. In addition, the Plan must ensure that transport projects do not sterilize important mineral resources including soils.

In the past Doncaster has relied on traditional industries however, the decline in mining and traditional manufacture has led to problems of high unemployment, low wages, social deprivation and poor access to jobs. The majority of Doncaster's collieries have now closed with the exception of Hatfield Colliery. Mineral extraction (sand gravel, limestone, clay and coal) still remains a significant contributor to Doncaster's economy.

Minerals extraction is a major industry and employer within the borough of Barnsley. The main commercial interest is in clay extraction (to make pipes and bricks for the construction industry), open-cast coal mining, extracting coal from previous workings (for example, spoil tips and former railway embankments) and quarrying sandstone (for cut masonry for building construction). There are five clay sites (e.g. at Stairfoot, Grimethorpe and Cawthorne) and one open cast site in

the east of the borough. There are no aggregate sites or deep coal mines currently in operation within the borough.

Rotherham has reserves of coal (deep and opencast), brick clay, magnesian limestone, and limited deposits of sandstone. Unlike Doncaster the borough is not a major producer of aggregate minerals. However, coal extraction still remains the dominant mineral being produced within Rotherham.

In comparison to the other three authorities Sheffield has limited mineral extraction which includes brick clay and coal.

The building of new transport interventions should also consider the use of Borrow Pits (temporary mineral working, used solely to supply mineral to specific construction project, particularly roads located in close proximity to the construction site) as in certain circumstances, the use of borrow pits can have significant environmental and amenity benefits the most obvious being the avoidance of heavy traffic on the public highway and the utilisation of resources which would otherwise be sterilised.

B3 Economic

B3.1 Economic: Deprivation

Sheffield is a relatively self-contained city and labour market relationships with neighbours are less strong than for other economic centres. Sheffield's smaller travel-to-work area is partly a reflection of the strength of its economy and its industrial legacy. Sixty-five percent of residents live and work in the city. Despite having less of an economic draw than other economic centres, Sheffield has the highest productivity within the city region and the highest employment in knowledge services – financial and business services in particular. Nonetheless, compared to Manchester and Leeds, Sheffield is relatively public sector dominated.

In labour market and housing market terms, Sheffield City Region is a fragmented economy, with Sheffield the strongest economic centre and increasingly interdependent with Rotherham due to its physical proximity. Sheffield City Region can best be characterised as weakly mono-centric. There are other centres of employment, such as Rotherham and Chesterfield, but these are not as strong as Sheffield. This fragmentation, and the weakness of Sheffield as a centre, means that not all areas in the city region are benefiting from Sheffield's success, despite an increase in skills profiles.

Barnsley

- Barnsley has an improving skills profile (27% are graduates, 11% have no qualifications). Those who do commute to Sheffield work in a wide range of occupations.
- Barnsley specialises in manufacturing, distribution, construction and growing professional services industry, including legal, architecture, real estate management and recruitment.
- House prices are low and stagnant: average house prices in Barnsley are £129,355 compared to £180,824 in Sheffield.
- Barnsley has high levels of deprivation, ranking at 32 for number of LSOA's within the 10% most deprived nationally.
- Barnsley has workplace earnings below the national average at £490.4(p/w), with lower resident earnings of £477.3 (p/w).

Barnsley suffers from relatively high levels of deprivation, and low skills, however graduate numbers have improved over recent years and the city has reduced levels of deprivation. Interventions should be focused on increasing the quality of jobs in Barnsley, not just the numbers, to retain graduates within the area.

Doncaster

- Across South Yorkshire, Doncaster has the lowest proportion of graduates (24.7%) however displays a higher percentage of people with NVQ level 1 and 2 and 7.9% with no qualifications.

- Doncaster specialises in different types of manufacturing, transport and distribution, retail and construction. Most of its jobs are not high value jobs and demand for skills is relatively low.
- House prices are relatively low: £144,588 in Doncaster compared to £180,824 in Sheffield.
- Doncaster has relatively high levels of deprivation – it ranks at 37 for the number of LSOA's within the top 10% most deprived.
- Both workplace and resident based earnings (£479), are below national and regional averages, the similarity between earnings signify that the majority of working individuals work within the city.

Like Barnsley, Doncaster has relatively high levels of deprivation, however has displayed the same upwards trend regarding its skill profile. Doncaster's economy is reliant on low-skilled jobs. Interventions should be targeted at increasing the quality of jobs not just the numbers.

Rotherham is characterised by a mix of industries, with a medium level of skills, earnings, house prices and deprivation scores.

- Rotherham has a similar skills profile to both Doncaster and Barnsley, with a 25% of the population educated to degree level and 11% holding no qualifications.
- Rotherham's industrial specialisms are manufacturing, retail, construction, hospitality with increasing numbers of professional and technical occupations.
- House prices are substantially below those of Sheffield: average house prices in Rotherham are £142,091 compared to £180.824 in Sheffield.
- Rotherham has lower levels of deprivation than Barnsley and Doncaster – ranking at 43 in terms of proportion of LSOA's within the top 10% most deprived.

Resident and workplace earnings are far lower than Sheffield and are well below regional and national averages, and resident earnings have fallen against other areas, although from a high base.

B3.2 Economic: Employment

South Yorkshire suffered during the recent recessions and experienced significant job loss which led to a rise in unemployment, most notably in 2012. In recent years' unemployment has begun to decline to levels that are comparable to the pre-recession year of 2005. It should be noted that all local authorities across South Yorkshire have a higher unemployment rate when compared to the English average.

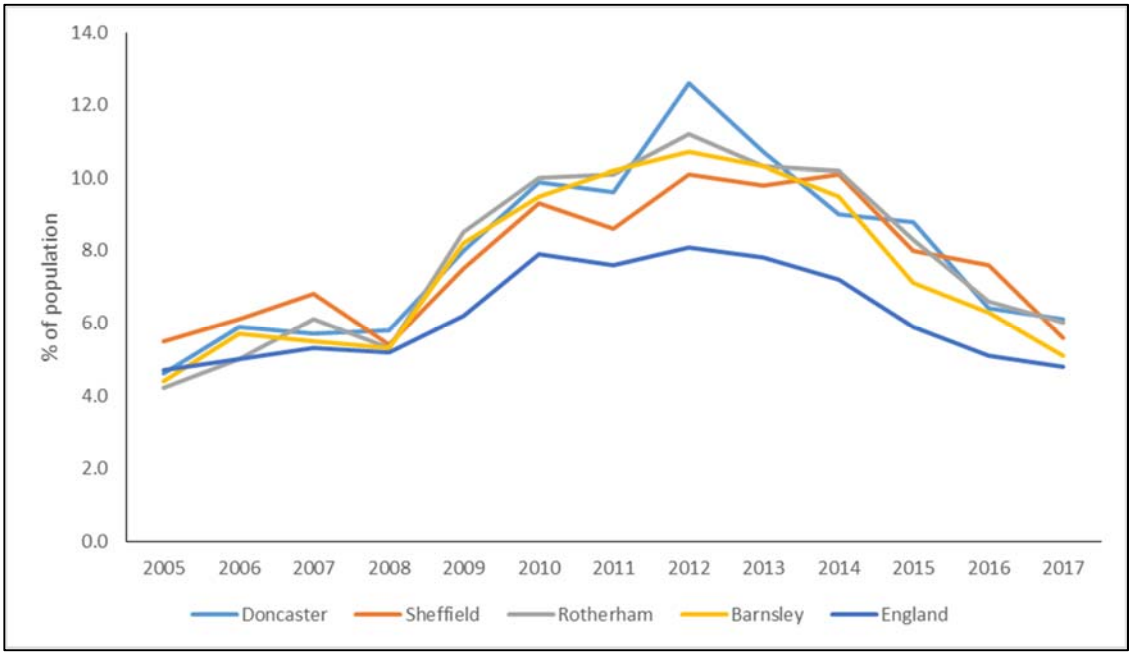

Figure B2.17: Unemployment rate of Local Authorities within South Yorkshire in comparison to England.

Overall employment rates, for those aged over 16, across South Yorkshire are less than the English average at 56.5% compared to 60.5% between April 2016 and March 2017. Of the local authorities within South Yorkshire, Rotherham had the lowest employment rate at 53.4%.

The proportion of residents of working age on Job Seekers Allowance, in 2017, across the local authorities within South Yorkshire are:

- Barnsley: 1.7%
- Doncaster: 1.8%
- Rotherham: 1.8%
- Sheffield: 1.9%
- South Yorkshire: 1.8%
- England: 1.2%

Average earnings of employees in the area (per week) by residence for both full time and part time workers for 2016 can be found in Table B2.9 below.

Area	Full Time Weekly Earning (£)	Part Time Weekly Earning (£)
Rotherham	£563.0	£191.4
Doncaster	£551.5	£192.8
Sheffield	£573.1	£214.5
Barnsley	£557.8	£215.9
South Yorkshire	£563.9	£206.0
England	£652.5	£218.0

Table B2.9: Average earnings per week

Both Full Time and Part Time workers across all local authorities within South Yorkshire are paid below the English average. Whilst the weekly income of the local authorities within South Yorkshire have increased since 2003 the difference between the region in comparison to the English average has increased between 2003 and 2016. The income difference was previously £79 in 2003 between England and South Yorkshire which has now risen to £87.

B3.3 Economic: Transport and Accessibility

Access to services and facilities by public transport, walking and cycling is set at the local level. Therefore, it is hard to draw comparisons with other areas, and test how well the sub-region is performing relative to other areas of the country. However, of the other authorities who measure these figures in the similar way to the South Yorkshire authorities, South Yorkshire performance on these indicators appear to be very strong. The journey time statistics, published by the Department for Transport, note that the average time from an employment centre by public transport within the South Yorkshire region is 9 minutes, with a frequency score of 97 (out of 100) for this service[13].

The total number of bus patrons has fluctuated over recent years, reversing a historic downward trend. In 2013/2014 the total number of bus passenger journeys in South Yorkshire was 108.5 million14. As the population of the sub-region increases, increasing strain will be put on the bus network, so it is essential that Transport Strategy interventions are tailored to ensure that network can cope with these increases. Figure B2.18 below shows the Transport Network in South Yorkshire.

[13] Travel time, destination and origin indicators to key sites and services, by local authority (ACS04). 2013. Available Online at: https://www.gov.uk/government/statistical-data-sets/acs04-travel-time-destination-and-origin-indicators-to-key-sites-and-services-by-local-authority

[14] Quicker, Smarter, Smoother in South Yorkshire. 2014. Available Online at: https://www.sypte.co.uk/uploadedFiles/Corporate/Projects_and_Awards/Better%20Bus%20Area%20Fund%20Report%20FINAL%2017092014.pdf

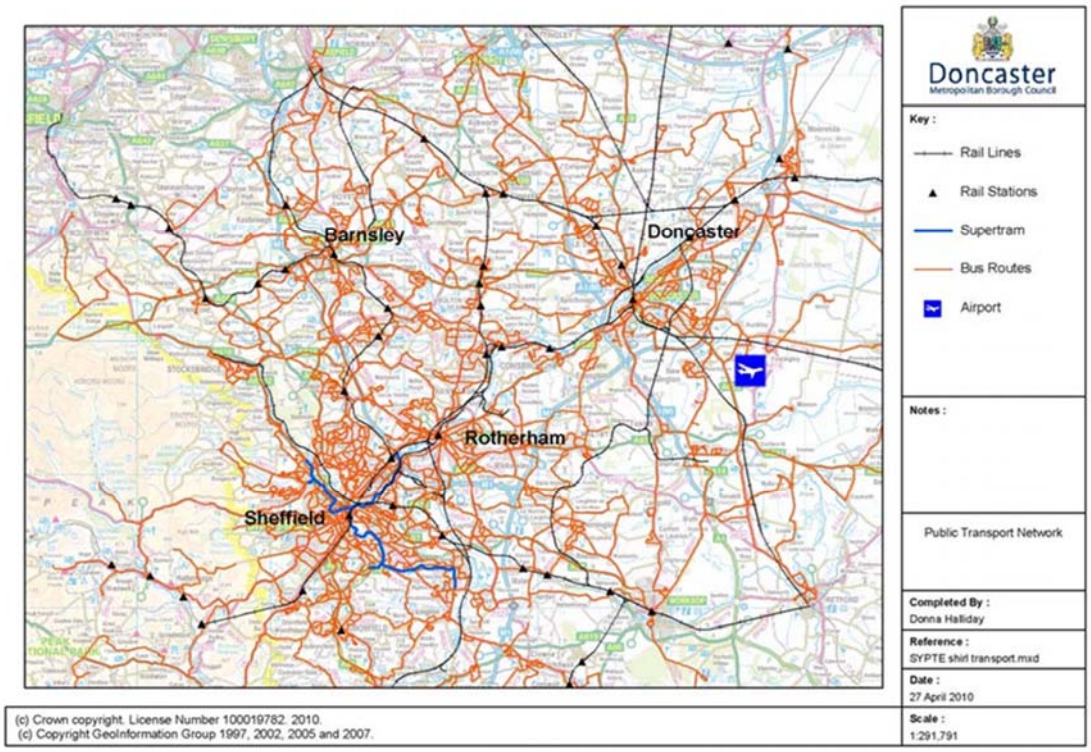

Figure B2.18: Transport Network in South Yorkshire.

Appendix C

Assessment Stage A3 – Confirm the environmental, social and economic issues which may exist

Environmental, Economic and Social Issues

Area	Issue	Description
Environment	Statutory Designations	South Yorkshire has a number of statutory designations for nature conservation and heritage, including: • Internationally important sites for nature conservation, including Hatfield Moor SAC and SPA, Thorne Moor SAC and SPA and the Peak District Moors SAC and SPA; • A number of national, regional and local geological and biodiversity sites • Nationally important landscapes (Peak District National Park) • Large area of Green Belt (with the exception of east Doncaster and west Sheffield) • Scheduled Monuments, listed buildings and conservation areas The location and design of capital projects must seek to avoid adverse impacts on the regions environmental designations whilst exploring opportunities to enhance and provide Green Infrastructure. Transport projects have the potential to cause both direct and indirect impacts. Direct impacts occur as a result of the direct loss of habitat whilst indirect impacts can occur, for example, by increasing pedestrian access through a wildlife site resulting in increased disturbance. Air pollution can also adversely impact on ecological and heritage features by eroding the fabric of designated buildings or increasing nitrogen deposition on sensitive ecological sites. These potential impacts will need to be carefully managed.
	Environmental Resources	South Yorkshire has significant environmental resources, including: • Areas of high quality agricultural land (ALC grade 2 and 3) (although also significant former industrial brownfield areas) • Areas of brownfield land which have developed over the years to provide important habitats for local biodiversity and are therefore an important environmental resource. • Mineral Resources (including aggregates, industrial and energy minerals) • Aquifers (Limestone and Sherwood sandstone) providing ground water must be protected from potential pollutants.
	Climate Change and Flooding	The need to achieve regeneration and create more and better quality jobs is likely to lead to a growth in the number of journeys. It is realistic to assume that at least some of these will be by private car, and therefore there is a potential conflict with reducing the level of greenhouse gas emissions (GHG) that contribute to climate change. However, the development of Green Industries, as well as a move towards more sustainable commuter travel (such as car sharing schemes) will help to off-set this. Furthermore, the provision of quality Green Infrastructure will help to address the impacts of climate change (by providing functions such as Sustainable Urban Drainage Systems (SUDS) and Urban Cooling). Recent flood events have demonstrated the need for transport infrastructure to be resilient to extreme weather events (as part of adaptation and mitigation of climate change). The energy use of associated transport infrastructure (such as street lighting, park and ride shelters etc.) could also be managed to maximise efficiency and make use of renewable sources.
Economic	Interconnectivity of Sheffield City Region and connectivity to other regions	Increasing connections across the Sheffield City Region, as well as links to other cities (especially Manchester, Leeds and London) will facilitate local people accessing jobs and other opportunities.

Area	Issue	Description
	Local Connectivity	There are more localised transport deficiencies, especially between former coal mining/manufacturing settlements (many of which are also the most deprived areas) and employment opportunities. These issues are especially acute in North Doncaster, the south east of Sheffield and the west and east of Barnsley. The qualifications and skills of the population will be key to achieving economic regeneration and growth, and so it is important that people have access to learning and skills opportunities.
	Affordability of Transport	The relatively high levels of deprivation and unemployment, with lower than average earnings together with a dispersed settlement pattern means that, within the sub-region, the cost of transport is a key issue. This can be addressed both by reducing the relative cost of travel, but also by ensuring that local job opportunities (and other services) are maximised which reduce the need to travel.
	Transport Sectors	Within Doncaster there is the potential to grow a logistics hub to support the local economy, although this will have an impact on the road network. The growth of other transport related opportunities, such as Doncaster Sheffield Airport, must be carefully managed to maximise benefit (both job creation and potential to fund additional infrastructure) whilst avoiding unacceptable impacts on existing infrastructure.
Social	Health and Quality of Life	Transport can have an adverse impacts on quality of life, particularly as a result of noise and air quality pollution from vehicles. Congestion within the main built up areas has led to the designation of a number of Air Quality Management Areas (AQMAs). Well maintained and attractive waterways, footpaths and cycleways can provide important recreational space that contribute to broader Green Infrastructure provision and encourage healthier lifestyles.
	Housing Supply	The significant number of additional homes planned need to be supported by sufficient sustainable transport provision. It is therefore important the distribution of these homes informs, and is informed by, the Transport Strategy.
	Safety	It is important that increased pressure on transport services associated with economic growth does not increase road accidents. Measures to address congestion may result in vehicles travelling at higher speeds which in turn could lead to more (serious) accidents; this will need to be carefully managed.
	Equalities: Demographics	A relatively large proportion of younger people and an aging population will have impacts on transport. Whilst these demographics are likely to be more reliant on public transport, changes in car ownership and use patterns, especially amongst older women, suggest that an increasing number of older and/ or retired people would like to retain use of private cars. Recently retired people will be accustomed to the accessibility of private cars and may not easily adapt to public transport services, even if free or at low cost, unless it is available on demand.
	Equalities: Disability	It will be important that transport infrastructure takes accounts of the needs of the less able. Learning disabilities and mental health issues may act as a barrier to using mainstream transport systems
	Equalities: Ethnicity	Potential language and cultural barriers may prevent people from using transport systems; these need to be overcome to reduce inequalities and improve access to transport

Appendix D

Assessment Stage A4 – List of Objectives

D1 Objectives

Objective No.	Description	Sub Objective	Indicators	Link to other assessment
Environment				
1	Protect and enhance our environmental heritage	Improve the quality and wildlife connectivity of geological and biodiversity sites To improve the access of local communities to natural greenspace Have due regard to protected species Positively contribute to a locally distinctive landscape and townscape. No significant loss of Green Belt Protect and create carbon sinks. Conserve the heritage assets in a manner appropriate to their significance. Where necessary have due regard to the assessment of tranquillity.	Condition of SSSIs Local Wildlife and Geological Sites in favourable condition (NI-197) ANGST Standards (Access to Natural Green Space) Number of heritage assets or their settings harmed or enhanced by the proposal. Developments which support Conservation Area Appraisals and Action Plans	SEA: Biodiversity, fauna and flora SEA: Cultural heritage and landscape NATA: Landscape NATA: Townscape NATA: Heritage NATA: Biodiversity
2	Minimise use and loss of environmental resources	Avoid run-off/pollution of aquifer Reduce loss of best and most versatile (BMV) agricultural land Avoid capital projects which would sterilise high quality mineral deposits, and maximise the use of secondary and/or recycled materials	Ground Water Quality Amount of BMV land	SEA: water and soil NATA: Water Environment

Objective No.	Description	Sub Objective	Indicators	Link to other assessment
		within such schemes Ensure the construction, use and decommissioning of new infrastructure minimises waste and facilitates		
3	Improve Air Quality	Improve air quality within management areas Reduce levels of congestion Promote more sustainable travel options, including innovations in alternative fuels and technologies	Nitrogen Dioxide Emissions Carbon Dioxide Emissions PM10 Emissions	SEA: Air NATA: Local Air Quality NATA: Greenhouse Gases
4	Support a managed response to climate change and reduce greenhouse gas emissions	Promote urban cooling and mitigate against flooding through provision of Green Infrastructure Maximise use of SuDS within transport schemes Avoid new infrastructure within high flood risk areas where possible, and if not ensure it is resilient to flooding	Net number of trees and green spaces resulting from transport schemes Number of schemes which incorporate SuDs and resilience measures Amount and design of new infrastructure within flood risk areas	SEA: water and soil SEA: Climatic Factors NATA: Water Environment
Economic				
5	Maximise access to jobs, training, skills and other services	Increase interconnectivity within the Sheffield City Region Increase the connectivity of the Sheffield City Region with other City Regions, especially Leeds and Manchester	Overall Employment Rate (NI-151) Access to services and facilities by public transport, walking and cycling (NI-175)	NATA: Access to the public transport system NATA: Public Accounts NATA: Business Users &

Objective No.	Description	Sub Objective	Indicators	Link to other assessment
		Increase local transport connectivity Provide the right type of sustainable transport, to the right place at the right time Increase and promote the affordability of sustainable transport options	Working age people with access to employment by public transport (and other specified modes) (NI- 176)	Providers NATA: Consumer Users
6	Support economic growth and the creation of jobs within transport related sectors	Growth of the Logistics Sector Maximise airport related jobs (both at the RHADS airport business park, but also off-site)	Net number of Jobs Created	
Social				
7	Increased levels of physical activity	More opportunities and infrastructure for walking and cycling Improving the interchange between sustainable transport modes and to facilitate longer journeys (e.g. cycling to a train station)	Obesity among primary school age children in year 6 (NI- 56) Children Travelling to school –mode of transport usually used (NI-198)	Health Impact Assessment SEA: Population and Human Health NATA; Physical fitness
8	Improved road safety, reduced levels of transport related crime and reduced fear of crime	Designing out crime applied to transport sites (such as park and ride schemes) Speed reduced (traffic calming measures etc.) Interventions take account of the needs of vulnerable groups and promote social inclusion	People killed or seriously injured in road traffic accidents (NI-47)	Health Impact assessment Equalities Impact Assessment SEA: Population and Human Health NATA: Accidents NATA: Security

Objective No.	Description	Sub Objective	Indicators	Link to other assessment
9	Improve Local Amenity	Reduce Noise Pollution Reduce Vibrations Reduce Light Pollution.	Net change in the average daily flow through residential areas and proportion of HGVs	Health Impact Assessment SEA: Population and Human Health NATA: Noise
10	Transport interventions benefit everyone	Targeted interventions to improve access to jobs and services within deprived communities Interventions take account of the needs of vulnerable and isolated individuals, to facilitate social inclusion	Scheme details	Equalities Impact Assessment NATA: Community severance

Appendix E

Assessment Stage B1: Testing the Transport Strategy Goals and vision against the SEA objectives

E1 Stage B1: Testing the compatibility of the Transport Strategy goals with SEA objectives

Objectives:

1. Support inclusive economic growth
2. Create healthy streets where people feel safe
3. Improve the quality of our outdoors
4. Promote, enable and adapt different technologies

SEA Objective ↓	2018 Transport Strategy Goals			
	1. Support Inclusive economic growth	**2. Create healthy streets where people feel safe**	**3. Improve the quality of our outdoors**	**4. Promote, enable and adapt different technologies**
1. Protect and enhance our environmental heritage.	X There are potential tensions between this goal and this objective. The Development of major road schemes, new dedicated public transport schemes and major development create tensions with this IA objective. **Recommendation:** Such developments of significant size which are considered to be important for the City Region should have due regard to: • protected species • improve the quality and wildlife connectivity of geological and biodiversity sites • provide significant environmental protection and mitigation to ensure that any loss of biodiversity or habitat fragmentation is addressed. This will help to ensure that this objective is taken into consideration throughout the plan period.	✓ This goal and this objective are compatible. The Transport Strategy goal, facilitates access to green and recreational spaces that promote healthy streets and the benefits that are associated with factors such as clean air, shade and shelter, places to stop, low noise levels, things to see and do and there is a choice of transport options, amongst others. The presence of green space will indirectly protect the natural and built heritage through the benefits associated with carbon reduction, congestion reduction and improved air quality. **Recommendation:** This goal should also seek to make space for nature in order to reduce habitat fragmentation.	✓ This goal and this objective are compatible. The Transport Strategy evidence base has suggested a policy approach which will aim to lower the carbon impacts of transport in the Sheffield City Region. The broad themes are to actively improve air quality, especially in designated AQMAs, to deliver a low carbon public transport network and to work in tandem with town planning to create attractive places. This approach will help protect the natural environment in particular designated European Sites (Thorne and Hatfield Moors and the South Pennine Moors (SAC, SPA) which are located within the Sheffield City Region which may be vulnerable to atmospheric pollution some of which is associated with vehicle emissions (such as PM10 & NOx).	**NO DIRECT LINK**

SEA Objective ↓	Transport Strategy Goals			
	1. Support Inclusive economic growth	**2. Create healthy streets where people feel safe**	**3. Improve the quality of our outdoors**	**4. Promote, enable and adapt different technologies**
2. Minimise use and loss of environmental resources.	**X** There are potential tensions between this goal and this objective. Developments may include the loss of significant farm land (agricultural land) which is considered to be an important natural resource by the Department for Environment and Rural Affairs (Defra) "Soil is a fundamental natural resource on which life depends. It provides many essential services on which we rely including food production, water management and support for valuable biodiversity and ecosystems. As a large store of carbon it also plays a vital role in the fight against climate change" (Defra Safeguarding our Soils 2009). **Recommendations:** It is acknowledged that such traffic interventions are particularly	✓ This goal and this objective are compatible. This Transport Strategy goal facilitates access to Green and safe spaces which will and will indirectly protect the natural environment and enhance these areas to ensure they are suitable for a range of uses. **Recommendation:** This Transport Strategy goal could be made more robust by incorporating the protection and enhancement of natural and green spaces to promote the multi-functional aspect of green corridors and green infrastructure across the region and ensure these are encouraged.	✓ This goal and this objective are compatible. This Transport Strategy goal is focused upon providing sustainable transport choices good public transport choices and carbon reduction initiatives and is not focused upon development of land.	**NO DIRECT LINK**

	important for the development for regional and local economies, and proposals for their development need to be incorporated within the relevant spatial strategies. In such cases, developments should where possible take into account the presence of the best and most versatile agricultural land alongside other sustainable considerations and try to use the option which will have the least negative impact overall, where this is still considered to be sustainable.			

SEA Objective ↓	2018 Transport Strategy Goals			
	1. Support Inclusive economic growth	**2. Create healthy streets where people feel safe**	**3. Improve the quality of our outdoors**	**4. Promote, enable and adapt different technologies**
3. Improve Air Quality	X There are potential tensions between this goal and this objective. With economic growth comes an increase in transport use and activity which will have negative effects on the objective to improve air quality. Most calculations for emissions are based on economic spend as they correlate so closely, highlighting that air quality and economic growth are related. The Strategy therefore supports economic growth while improving air quality through good planning and the use of efficient and low carbon means of transportation of goods, encouraging sustainable forms of transport such as walking cycling and public transport modes.	✓ This goal and this objective are compatible. This Strategy goal makes provision for creating places where people feel safe, where there is a choice to walk or cycle and there are things to do and see. These all contribute towards creating better facilities for sustainable modes of transport and improving access to green spaces and thus facilitating a reduction in emissions. The goal aims to improve sustainable and inclusive access to green and recreational spaces.	✓ This goal and this objective are compatible. This Transport Strategy goal encourages the uptake of more sustainable modes of transports with reduced emissions. The three broad themes are to: • Actively improve air quality, especially in designated AQMAs • Deliver a low Carbon transport network, including a zero Carbon public transport network • Work in tandem with town planning to create attractive places The first two of these are vital to achieving this objective.	NO DIRECT LINK

SEA Objective ↓	Transport Strategy Goals			
	1. Support Inclusive economic growth	**2. Create healthy streets where people feel safe**	**3. Improve the quality of our outdoors**	**4. Promote, enable and adapt different technologies**
4. Support a managed response to climate change and reduce green-house gas emissions.	X There are potential tensions between this goal and this objective. This Transport Strategy goal illustrates a strong drive towards the economic growth of the Sheffield City Region. Future transport Interventions will unlock development land around the Region. However, the Strategy aims to deliver 'future land use developments which allow and facilitate use of lower carbon modes, to make them more attractive than car use.' Planned future growth needs to also take into account the need for planned developments to reduce carbon (i.e. incorporate park and ride and cycling infrastructure, provide greenery for urban cooling, provide employment close to population base to reduce work related travel and increase active travel.	✓ This goal and this objective are compatible. This Transport Strategy goal indirectly supports this objective as it encourages the use of sustainable non-carbon modes of travel (better facilities for cycling and improving access to green spaces	✓ This goal and this objective are compatible. This Transport Strategy goal supports this SEA objective, as its purpose is to reduce carbon emissions. Carbon emissions are directly attributed to the associated effects of climate change (extreme weather events such as floods and droughts).	NO DIRECT LINK

	As referenced in relation to Air Quality, Economic Growth and increased carbon emissions currently go hand in hand. The reversal of this trend will present a challenge. **Recommendation:** In addition, to the existing policy framework (adaption to Climate Change), as well as reducing the need to travel, transport initiatives should also ensure that the associated effects of Climate Change (extreme weather events such as flooding and droughts) are considered. This approach will ensure that flood mitigation and resilience is considered.			

SEA Objective ↓	2018 Transport Strategy Goals			
	1. Support Inclusive economic growth	**2. Create healthy streets where people feel safe**	**3. Improve the quality of our outdoors**	**4. Promote, enable and adapt different technologies**
5. Maximise access to jobs training and skills and other services.	✓ This goal and this objective are compatible. This Strategy objective address the connectivity gaps between key areas and employment, education, retail and leisure opportunities for residents as well as providing a mechanism for businesses to transport goods and services. The goal seeks to improve access to jobs, markets, skills and supply chains within the region, and beyond. **Recommendation:** There needs to be a clear link made between this objective and land use planning, as this will be a key driver in connecting people to jobs and services.	✓ This goal and this objective are compatible. This Transport Strategy objective aims to provide access to opportunities, promoting health by enabling sustainable and active travel choices and also ensuring safety and security. This will in turn give people more choice and provide more access to transport modes with an enhanced multi-modal transport system.	✓ This goal and this objective are compatible. This Transport Strategy Objective highlights the need to provide more low carbon transport options and improve air quality. This encourages the use of public and sustainable transport modes and another aim is to work with town planners to create attractive places.	✓ This goal and this objective are compatible. Transport Strategy objective supports the IA objectives as it seeks to ensure the City Region is at the forefront of transport innovation and a fully integrated transport service is provided. Improving perceptions of safety and security strongly supports this SEA objective.

SEA Objective ↓	2018 Transport Strategy Goals			
	1. Support Inclusive economic growth	**2. Create healthy streets where people feel safe**	**3. Improve the quality of our outdoors**	**4. Promote, enable and adapt different technologies**
6. Support economic growth and the creation of jobs within transport related sectors.	✓ This goal and this objective are compatible. The Transport Strategy objective supports economic growth of the Sheffield City Region which is the overarching aim of this goal, with a focus on improving access to jobs, markets, skills and supply chains.	✓ This goal and this objective are compatible. The life style choices which are available to people can have a significant impact upon their health. Creating better urban environments with healthy streets and safer places, alongside improved access to green and recreational spaces The objective is aiming to enhance the multi-modal transport system	✓ This goal and this objective are compatible. By developing a transport strategy to reduce greenhouse gas emissions and improve the quality of the outdoors this has a strong focus on the promotion of public transport, and therefore jobs within the public transport sector, associated demand sectors within the economy and the development of green solutions / technologies.	✓ This goal and this objective are compatible. By developing a transport Strategy which promotes, enables and adopts different technologies which wants the City Region to be at the forefront of transport innovation and adopt technologies which will stimulate change, jobs within the transport sector and the development of green solutions / technologies.

SEA Objective ↓	2018 Transport Strategy Goals			
	1. Support Inclusive economic growth	**2. Create healthy streets where people feel safe**	**3. Improve the quality of our outdoors**	**4. Promote, enable and adapt different technologies**
7. Increase levels of physical activity.	✓ This goal and this objective are compatible. This Transport Strategy goal indirectly supports this SEA objective, as it aims to encourage more use of walking and cycling and public transport.	✓ This goal and this objective are compatible. This goal strongly supports this IA objective, and promotes healthy modes (walking and cycling) of travel across the city region.	✓ This goal and this objective are compatible. The strategy supports carbon reduction (reducing the need to travel by carbon intensive modes) by using public transport, walking and cycling.	✓ This goal and this objective are compatible. The strategy wants to encourage alternative modes of transport which are more sustainable and therefore indirectly encourages walking and cycling.

SEA Objective ↓	2018 Transport Strategy Goals			
	1. Support Inclusive economic growth	**2. Create healthy streets where people feel safe**	**3. Improve the quality of our outdoors**	**4. Promote, enable and adapt different technologies**
8. Improved road safety, reduce levels of transport related crime and reduce of crime.	**NO DIRECT LINK**	✓ This goal and this objective are compatible. This Transport Strategy goal supports the IA objective, as it aims to make create healthy streets where people feel safe through ensure people feel safe when they travel, particularly using sustainable modes creating more attractive streets with high activity levels and increased attractiveness. Improving public perception of safety is also important for the strategy.	**NO DIRECT LINK**	**NO DIRECT LINK**

SEA Objective ↓	2018 Transport Strategy Goals			
	1. Support Inclusive economic growth	**2. Create healthy streets where people feel safe**	**3. Improve the quality of our outdoors**	**4. Promote, enable and adapt different technologies**
9. Improve local amenity.	✓ This goal and this objective are compatible. This Transport Strategy goal indirectly supports this IA objective as economic growth and associated increases in private sector development will be one of the key drivers for the provision of new and improved local amenities. Conversely improved local amenity will help support economic growth, as it will help add value to the surrounding area.	✓ This goal and this objective are compatible. The Transport Strategy goal indirectly supports this IA objective as it encourages sustainable modes of transport across the Sheffield City Region which will help to establish more investment in the outdoor environment and use modes which are less noise and vibration intensive whilst improving access to green and recreational spaces.	✓ This goal and this objective are compatible. This Transport Strategy goal indirectly supports this IA Objective as aims to improve the quality of the outdoors, and encourages the use of public transport and which are less noise intensive.	**NO DIRECT LINK**

SEA Objective ↓	2018 Transport Strategy Goals			
	1. Support Inclusive economic growth	**2. Create healthy streets where people feel safe**	**3. Improve the quality of our outdoors**	**4. Promote, enable and adapt different technologies**
10. Transport interventions which benefit everyone.	✓ This goal and this objective are compatible. This Transport Strategy goal indirectly supports this IA objective as it will regenerate the Sheffield City Region and provide wider benefits such as access to jobs through increased connectivity.	✓ This goal and this objective are compatible. This Transport Strategy goal strongly supports the IA objective in that the transport interventions proposed will deliver sustainable transport choices which are accessible, affordable, safe and inclusive.	✓ This goal and this objective are compatible. This Transport Strategy goal indirectly supports this IA Objective by providing public transport services targeted on accessibility to work, training and education. More importantly making public transport interventions affordable, reliable and stable so that people who use public transport can depend upon the service being there.	✓ This goal and this objective are compatible. This transport strategy goal supports this SEA objective, particularly in relation to policies W, Y and Z which seek to reduce casualties among vulnerable groups and reduce overall casualties on the public transport and road network.

E2 Stage B1 – Testing the vision of the strategy:

The key vision of the strategy is:

By 2040 we will be a forward-looking City Region with integrated transport connections that support economic growth and improve quality of life for all.

The assessment of the vision has been undertaken against the draft IA objectives and the accompanying Sub Objectives.

SEA Objectives		Detailed decision making criteria (Sub Objectives)	Score	Comments/Recommendations
1	Protect and enhance our environmental heritage.	• Improve the quality and wildlife connectivity of geological and biodiversity sites • To improve the access of local communities to natural greenspace • Have due regard to protected species • Positively contribute to a locally distinctive landscape and townscape • No significant loss of Green Belt • Protect and enhance built heritage and have due regard to archaeology.	?	The vision does not provide detail on environmental heritage, due to its strategic nature. Therefore as the Strategy is implemented, this could have either positive or negative effects on the environmental heritage in the City Region. **Recommendation** It is therefore recommended that the vision acknowledges the environmental heritage and the potential to protect and enhance this as part of the strategy.

SEA Objectives		Detailed decision making criteria (Sub Objectives)	Score	Comments/Recommendations
2	Minimise use and loss of environmental resources.	• Avoid run-off/pollution of aquifer • Reduce loss of best and most versatile (BMV) agricultural land • Avoid capital projects which would sterilise high quality mineral deposits, and maximise the use of secondary and/or recycled materials within such schemes • Ensure the construction, use and decommissioning of new infrastructure minimises waste and facilitates recycling/reuse initiatives	?	The vision at present does not make direct reference to environmental resources and including an awareness of this would enable a clear view on how this would be dealt with through the strategy. **Recommendation** It is therefore recommended, that the vision should acknowledge that where environmental issues/potential impacts may result from the strategy, subsequent environmental compensation and mitigation will be provided.

SEA Objectives		Detailed decision making criteria (Sub Objectives)	Score	Comments/Recommendations
3	Improve Air Quality and reduce greenhouse gas emissions.	• Improve air quality within management areas • Reduce levels of congestion • Promote more sustainable travel options, including innovations in alternative fuels and technologies		The vision supports this objective by aiming to improve quality of life for all by establishing integrated transport connections. This will in turn reduce congestion and provide more choice for how people travel, whilst optimising sustainable modes which will improve air quality and reduce greenhouse gas emissions.

SEA Objectives		Detailed decision making criteria (Sub Objectives)	Score	Comments/Recommendations
4	Support a managed response to climate change.	• Promote urban cooling and mitigate against flooding through provision of Green Infrastructure • Maximise use of SuDS within transport schemes • Avoid new infrastructure within high flood risk areas where possible, and if not ensure it is resilient to flooding		The vision supports this objective, and draws upon improving the quality of life for all, which will be established through integrated transport connections. The enhancements in transport connections will be achieved through using more sustainable transport modes which will therefore support the objective and the response to climate change.

SEA Objectives		Detailed decision making criteria (Sub Objectives)	Score	Comments/Recommendations
5	Maximise access to jobs training and skills and other services.	• Increase interconnectivity within the Sheffield City Region • Increase the connectivity of the Sheffield City Region with other City Regions, especially Leeds and Manchester • Increase local transport connectivity • Provide the right type of sustainable transport, to the right place at the right time • Increase and promote the affordability of sustainable transport options		The vision strongly supports this objective by providing a more integrated transport system and connections that are able to support economic growth.
6	Support economic growth and the creation of jobs within transport related sectors.	• Growth of the Logistics Sector Maximise airport related jobs (both at the RHADS airport business park, but also off-site)		The vision strongly supports this objective as the strategy is aiming for the Sheffield City Region to support economic growth through the development of the integrated transport connections.
7	Increase levels of physical activity.	• More opportunities and infrastructure for walking and cycling • Improving the interchange between sustainable transport modes and to facilitate longer journeys (e.g. cycling to a train station)		The vision mainly supports this objective by aspiring to integrate public transport to both support economic growth and improve the quality of life for all. This is relating to the need to create healthy streets and encourage more sustainable modes of transport, such as walking and cycling.

SEA Objectives		Detailed decision making criteria (Sub Objectives)	Score	Comments/Recommendations
8	Improved road safety, reduce levels of transport related crime and reduce fear of crime.	Designing out crime applied to transport sites (such as park and ride schemes) Speed reduced (traffic calming measures etc.). Interventions take account of the needs of vulnerable groups and promote social inclusion.	?	The vision at present does not directly support this objective as it does not clarify within the vision that this objective will be supported, however details are provided in the more detailed policies. **Recommendation** It could be referenced in the vision how this objective will be addressed and highlight the importance of these topics. How many mainly supports this objective as it seeks to empower people to 'get around their communities under their own steam', reinforcing key streets as safe places to be and build upon people friendly urban environments.
9	Improve Local Amenity	Reduce Noise Pollution Reduce Vibrations		The vision supports this objective through improving quality of life which links to the provision of further green and recreational spaces, reducing emissions and improving air quality and encouraging the use of more sustainable modes of transport.
10	Transport Interventions which benefit everyone	Targeted interventions to improve access to jobs and services within deprived communities Interventions take account of the needs of vulnerable and isolated individuals, to facilitate social inclusion		The vision strongly supports this objective. The vision aims to establish integrated transport connections which support economic growth, which is a benefit to individuals as well as the City Region as it will improve connectivity, including access to jobs and services. The vision also seeks to improve quality of life for all, which will work towards facilitating social inclusion.

Key

-	No connection identified
X	The vision could create tensions with the IA Objective
?	The vision could both support or create tensions with the IA Objective depending on how it is implemented
	The vision supports the IA Objective

Appendix F

Assessment Stage B2 – Developing Strategic Alternatives

F1 Stage B2 - Developing Strategic Alternatives

The ethos of the refreshed Transport Strategy continues to favour a balanced approach to provision of transport across SCR, respecting the outcome of the previous alternatives appraisal process. The 2018 Transport Strategy focuses on setting out the policy position of SCR. It does not advocate schemes and further work will be undertaken to develop an implementation plan. As part of this, further consideration will be given to potential alternatives and the impacts of these will be considered through further Integrated Appraisal work and Environmental Impact Assessments as appropriate.

At this stage, no new alternatives have been proposed and the following section has been reviewed and updated to bring the 2011 Transport Strategy in line with the 2018 Transport Strategy. This is set out in the following table.

IA Objective	Scenario 1 (2011 Transport Strategy)	Scenario 2 (Public Transport Interventions)	Scenario 3 (Highway Interventions)
Overall	The 2018 Transport Strategy is expected to cover the period over the next 40 years, and will replace the 2011 Transport Strategy. The protection and enhancement of the environment in the medium and long term will be subject to national legislation once the 2018 Transport Strategy has lapsed. If the 2018 strategy was not produced, then the 2011 strategy would potentially continue, however would become out of date and provide a limited framework for SCR. Although other strategies would seek to reduce the need to travel etc. without the Transport Strategy there may no sub-regional strategic overview on transport issues and interventions to maximise public transport use and ensure the existing highway network functions effectively. The digital region project may increase the potential for home working for some sectors, but is unlikely to avoid the majority of commuting. It is therefore assumed that without the Transport Strategy there would be: • Increasing car ownership and use (especially for commuting) increased congestion. • Less public transport use less walking and cycling.	A strategy focused on public transport interventions (and, It is assumed, promoting walking and cycling) may help to deliver increased use of public transport and healthier travel choices. However, without measures to ensure an effective transport network, including highways, it is likely that congestion would become increasingly problematic. It is unrealistic to expect all journeys to be made by public transport and so some car use is likely to continue. Without measures to manage this there are likely to be lost opportunities (such as promoting car sharing) as well as a failure to address issues such as safety. Furthermore, without measures to manage highway freight local amenity impacts and safety issues are unlikely to be addressed.	It is important that the road network functions effectively, although without interventions to promote public transport the volume of traffic, and so the scale of the challenge, is likely to be greater. A level of road freight is likely to continue and it is important to manage this, to maximise efficiency and minimise impacts – especially on local amenity. Furthermore, failure to promote modes of transport such as walking and cycling means that opportunities to contribute to healthier lifestyles will be lost. Issues of inequalities, and the mobility of those without access to private cars, are unlikely to be addressed, meaning that deprived communities may be unable to access educational, employment, health and cultural opportunities. Thus wider strategies to address deprivation will be undermined.

IA Objective	Scenario 1		Scenario 2		Scenario 3	
Individual Objectives	**Score**	**Commentary/ Explanation**	**Score**	**Commentary/ Explanation**	**Score**	**Commentary/ Explanation**
1. Protect and enhance our environmental heritage	+/-	Increased levels of congestion and so emissions (especially CO2 and NOx) is likely to have a negative impact on the built and natural environment. Failure to promote walking and cycling will not improve access to natural greenspace. No new capital projects may minimise loss of Green Belt and impact on landscape and archaeology.	+	Increased levels of congestion and so emissions (especially CO2 and NOx) is likely to have a negative impact on the built and natural environment, although with increased public transport use the level of emissions may be minimised. Improved opportunities for walking and cycling may improve access to natural greenspace Capital projects may impact on Green Belt, landscape and archaeology (depending on scale and location).	-	A more efficient road network may reduce congestion, but the overall level of emissions is likely to be higher with impacts (especially CO2 and NOx) on the built and natural environment Failure to promote walking and cycling will not improve access to natural greenspace Capital projects may impact on Green Belt, landscape and archaeology (depending on scale and location).
2. Minimise use and loss of environmental resources.	+/-	Without schemes to manage the existing highway network, run-off and pollution may increase. No new capital projects may minimise loss of agricultural land and impact on minerals (but would also mean no opportunities to use recycles aggregate).	0/-	Without schemes to manage the existing highway network, run-off and pollution may increase. Capital projects may impact on agricultural land and minerals (but the impact on the latter could be minimised by making use of recycled aggregate).	0/-	Actions could ensure that the existing highway network does and pollution may increase Capital projects may impact on agricultural land and minerals (but the impact on the latter could be minimised by making use of recycled aggregate).

IA Objective	Scenario 1		Scenario 2		Scenario 3	
Individual Objectives	**Score**	**Commentary/ Explanation**	**Score**	**Commentary/ Explanation**	**Score**	**Commentary/ Explanation**
3. Improve Air Quality	--	The delivery of the Air Quality Action Plans is very closely linked to the Transport Strategy. Therefore it is unlikely that the air quality aspirations could be delivered without the Transport Strategy, especially in relation to managing Air Quality Management Areas, resolving Health issues and avoiding climate change. The Transport Strategy also aims to improve air quality and therefore this will continue as this Strategy goes forward. Opportunities to promote alternative fuels (and so the growth of Green Sectors) would be lost.	++/-	Reduced overall levels of travel by car may help to minimise CO2 emissions. However, without actions to manage the highway network congestion on urban area pinch points may continue – leading to additional Air Quality Management Areas and localised health issues. There may be opportunities to promote alternative fuels (and so the growth of Green Sectors).	-	Increased highway interventions have the potential to reduce congestion by allowing people to move around more efficiently. This in turn can help reduce carbon emissions associated with idling engines, and can, as a consequence improve air quality. There may be opportunities to promote alternative fuels (and so the growth of Green Sectors). However, to have a scenario purely based upon highways interventions (in relation to Air Quality) would be contrary to government policy and legislation (Climate Change Act 2008).
4. Support a managed response to climate change and reduce greenhouse gas emissions.	--	Without interventions increasing the effectiveness and coverage of the Green Infrastructure network. Without interventions it is unlikely that there will be increased use of SuDS on the existing highway network or that issues of resilience will be addressed.	+/-	Schemes to promote walking, cycling and Smarter Travel Choices could be linked to wider Green Infrastructure strategies to promote multi-functional areas. However, without interventions it is unlikely that there will be	+/-	Without promoting walking and cycling a key aspect of GI is ignored, although highway verges may still provide opportunities. Interventions could be included to maximise the use of SuDS and increase resilience to climate change.

IA Objective	Scenario 1		Scenario 2		Scenario 3	
Individual Objectives	**Score**	**Commentary/ Explanation**	**Score**	**Commentary/ Explanation**	**Score**	**Commentary/ Explanation**
				increased use of SuDS on the existing highway network or that issues of resilience will be addressed.		
5. Maximise access to jobs, training and skills and other services.	--	Historically, many jobs within South Yorkshire were in walking distance (such as coal mines etc.). This is no longer the case and so without interventions to maximise connectivity there is a danger that those with access to cars will increasingly use them to commute – causing congestion and other issues, whilst those without access to cars will simply find it more difficult to access employment and other opportunities – exacerbating issues of deprivation in some areas.	++	Interventions which facilitate travel by bus and train, both within the SCR and to other city regions will contribute significantly to this objective.	--	This approach may allow some management of congestion, the increasing levels of car use may make this difficult. This approach would also be unsustainable and exclude many potentially vulnerable individuals without access to cars (young, old and those on lower incomes).
6. Support economic growth and the creation of jobs within transport related sectors.	--	Without interventions increasing the effectiveness and coverage of the Green Infrastructure network. Without interventions it is unlikely that there will be increased use of SuDS on the existing highway network or that issues of resilience will be addressed.	+/-	Schemes to promote walking, cycling and Smarter Travel Choices could be linked to wider Green Infrastructure strategies to promote multi-functional areas. However, without interventions it is unlikely that there will be	+/-	Without promoting walking and cycling a key aspect of GI is ignored, although highway verges may still provide opportunities. Interventions could be included to maximise the use of SuDS and increase resilience to climate change.

IA Objective	Scenario 1		Scenario 2		Scenario 3	
Individual Objectives	**Score**	**Commentary/ Explanation**	**Score**	**Commentary/ Explanation**	**Score**	**Commentary/ Explanation**
				increased use of SuDS on the existing highway network or that issues of resilience will be addressed.		
7. Increased levels of physical activity.	--	Unlikely to deliver more opportunities for walking or cycling or to facilitate the interchange between sustainable transport modes.	++	Most likely to deliver opportunities for walking or cycling and to facilitate the interchange between sustainable transport modes.	--	Unlikely to deliver more opportunities for walking or cycling or to facilitate the interchange between sustainable transport model.
8. Improved road safety reduced levels of transport related crime and reduced fear of crime.	--	Without interventions road safety is unlikely to improve. Transport crime and fear of crime could be addressed by other strategies and through day-to-day actions of police etc., however the effectiveness of these will be reduced without the Transport Strategy.	+/-	Without management of the highway network outcomes to improve the safety of all road users are unlikely. However, if interventions to increase public transport use are successful these may reduce overall traffic levels which could benefit safety.	+/-	Potential to improve safety for all road users (including cyclists). However, without interventions to increase use of public transport the level of traffic (and therefore risk) may increase.
9. Improve local amenity.	--	Without interventions there will be less effective management of road freight and lost opportunities to promote GI.	+	Actions to provide a network of multifunctional green-infrastructure (which facilitates walking and cycling) may improve local amenity if it acts as a buffer between residential areas and noise sources such as roads.	+	Actions to manage the use of the road network for freight could benefit local amenity.

IA Objective	Scenario 1		Scenario 2		Scenario 3	
Individual Objectives	**Score**	**Commentary/ Explanation**	**Score**	**Commentary/ Explanation**	**Score**	**Commentary/ Explanation**
10. Transport interventions benefit everyone.	--	An approach which does not promote public transport is unlikely to benefit all, as many of the most vulnerable members of society do not have access to a car (deprived communities).	++	Public transport interventions are most likely to have maximum benefit for the young, old and those on lower incomes.	--	An approach which does not promote public transport is unlikely to benefit all, as many of the most vulnerable members of society do not have access to a car (deprived communities).

Key:
+ positive - negative 0 neutral ? uncertain

+/- mixture of both positive and negative effects ++ major positive effect - -major negative effect

Appendix G

Assessment Stage B3/B4 - Predicting and Evaluating the Effects of the Plan or Programme

G1 Summary of Assessment Impacts

Assessment of policy goals

The significance of these effects has been donated through the detail within Table 1 and 2 below.

IA Appraisal Matrix 1: Policy Goal Group *Support inclusive economic growth*

- Improve access to jobs, markets, skills and supply chains.
- Enhance productivity by making our transport system faster, more reliable and more resilient.
- Invest in integrated packages of infrastructure to unlock growth and support Local Plans

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Protect and enhance our environmental heritage	+	+	+	Indirect Permanent	Local and City Regional	Both	Receptors: Visitors to the City region, investors, residents and natural and historic assets.	**Policy 1 and Policy 2**: The proposed improvements to access jobs, skills and supply chains through transport infrastructure improvements, and increasing the speed, reliability and resilience of transport systems, will have a permanent effect making the City Region more attractive to visitors and potential investors. By increasing inter-regional connectivity and pan-Northern connectivity, this may allow for improved links to and greater awareness of regional attractions, including natural and historic assets, making these more accessible to all groups.	N/A
	+/-/?	+/-/?	+/-/?	Direct Permanent	Local	Both	Receptors: Heritage Assets	**Policy 3**: There may be instances were investment in integrated packages of transport infrastructure may have an impact on historical assets within the City Region. The scale and the magnitude of these impacts is currently unknown. Historic assets should be sensitively incorporated as necessary into the design of integrated packages of	Mitigation links to Policy 9, which would encourage impacts to be addressed through the Town Planning and Environmental Impact Assessment processes.

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
								infrastructure; an approach which may be managed through the Town Planning process. The development of integrated packages of infrastructure to unlock growth could create the opportunity to enhance/ improve existing heritage assets which may be impacted by existing transport infrastructure.	
Minimise use and loss of environmental resources	0	0	0	Direct Permanent	Local, City Regional and Wider	Both	Receptors: Residents of the Sheffield City Region and neighbouring City Regions.	**Policy 1 and Policy 2**: Over the long term, improving access to jobs, markets, skills and supply chains through better local, city-regional and pan-Northern accessibility will likely allow people to travel further and potentially work in different City Regions. Increased travel may encourage greater use of environmental resources, however this could be a neutral effect if all types of multi-modal access (such as cycling and walking) are adopted at the same rate, and the transport system is made faster and more efficient.	Mitigation links to Policy 7 and 8 by encouraging low carbon transport.

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
	-- or 0	-- or 0	-- or 0	Direct/Indirect Permanent/ Temporary	Local	Both	Receptors: Human and Habitat populations within close proximity of the seven growth areas.	**Policy 3**: This policy seeks to deliver investment in integrated packages of infrastructure across the City Region to unlock growth. This has the potential to be permanent depending on the siting and location of proposals. Whilst investment in targeted locations is arguably likely to have a more limited effect than widespread application of the policy, the effect may be positive or negative and could result in habitat loss, habitat fragmentation, altering the spatial distribution of air pollution, altering land drainage and increasing levels of disturbance to wildlife. Impacts of targeted interventions would need to be assessed in detail through the EIA and Habitats Directive legislation, and appropriate mitigation proposed.	Mitigation links to Policy 9, which would encourage impacts to be addressed through the EIA processes.

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Improve Air Quality and reduce greenhouse gas emissions	--	--	--	Direct Permanent	Local and City Regional	Both	Receptors: Widespread groups, with greater concentrations of receptor effected in proximity to the priority spatial growth areas.	**Policy 1, Policy 2 and Policy 3**: Increasing access to markets and employment through improved accessibility and increasing the speed, reliability and resilience of transport systems is likely to have a permanent long-term implications for air quality. With regard to the seven priority spatial growth areas, it may be the case that the effect on air quality is more pronounced within these areas. Whilst there are other policies within the Plan which are likely to offset the effects of this policy, it should be noted that there are many types of impact in relation to air quality, including quality of life, natural and historic environment. Improving the resilience of transport infrastructure may enhance the ability to reduce greenhouse gas emissions.	Mitigation links to Policy 7 which seeks to actively improve air quality, especially in designated AQMAs. This encourages the uptake of low carbon and zero emission vehicles, enforcing low emission and clean air zones and considering different technologies.

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Support a managed response to climate change	+/-	+/-	+/-	Direct Permanent	Local, City Regional and National	Both	Receptors: Employees and residents in the City Region.	**Policy 1**: Increasing access to jobs, markets, skills and supply chains will likely increase the ability for people to live and work in increasingly separate destinations, which is likely to have an impact on carbon emissions and a resultant impact on climate change. Improving accessibility may however reduce travel times and congestion, which in turn could result in a positive impact on minimising climate change. On the contrary, **Policy 3** supports concentrated investment in the Spatial Priority Areas which may result in people living in closer proximity to employment and reduced travel times.	Mitigation links to Policy 7, 8 and 9 which seeks to actively reduce the impact on climate change, through delivering a low carbon network, integrating transport with land-use and seeking to reduce the impact on air quality.
	+	+	+	Direct Permanent	Local and City region	Built environment	Receptors: Infrastructure	**Policy 2:** Enhance productivity by making our transport system faster, more reliable and more resilient may allow for a more managed response to climate change by increasing the resilience of infrastructure.	

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Maximise access to jobs, training and skills and other services	++	++	++	Direct Permanent	Local, City-regional and National	Both	Receptors: Investors, residents and employees and employers within the City region.	**Policy 1 and 2**: Increasing access to jobs, markets, skills and supply chains and enhanced reliability of transport systems will have a major positive impact on maximising access to jobs, training, skills and other services and boosting productivity. Specifically, improving affordable connectivity between destinations will allow for wider choice and access for all community groups to jobs and training, which could in turn address issues of low productivity deprivation and equality within the region.	It must be ensured that improved travel remains affordable for all groups.
	++	++	++	Direct Permanent	Local and City region	Built environment		**Policy 3** will directly result in better access to priority spatial growth areas within the City Region. The effect is likely to be widespread across the City Region and permanent.	
Support economic growth and the creation of jobs within transport related sectors	++/?	++/?	++/?	Direct Permanent	Local, City-regional and National	Both	Receptors: Investors, residents and employees and employers	**Policy 1, Policy 2 and Policy 3**: Improving access to jobs, markets, skills and supply chains and greater reliability of transport systems could act as a city-regional catalyst for economic growth, development	It is recommended that that any employment provision is linked to provision of education and training and should also link with other

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
							within the City region.	and regeneration. This is likely to have a direct positive impact improving the creation of jobs across most employment sectors, particularly in the spatial priority areas, which could have city-regional or national impacts. The specific impact on the extent to which this policy will increase employment in transport related sectors might be positive, however improvements in transport technology could increase skill-creation as opposed to having an impact on volume of jobs created in the transport sector.	sustainable modes of travel.
Increased levels of physical activity	++/?	++/?	++/?	Direct Permanent	Local and City-regional	Both	Receptors: Residents and employees within the City region.	**Policy 1, Policy 2 and Policy 3**: Given improved access to jobs, markets, skills and supply chains is likely to boost multi-modal connectivity and modal choice, there is an opportunity for this to increase take-up of walking and cycling which could improve physical activity. However access to a faster transport system, which is more reliable and more resilient, may actually encourage people to choose alternative forms of	Mitigation links to Policy 5 which specifically encourages multi-modal travel and opportunities for sustainable travel choices.

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
								transport which may not always be active forms. On balance, the effect is considered to be major positive and unknown.	
Improved road safety, reduced levels of transport related crime and reduced fear of crime	+/?	+/?	+/?	Indirect Permanent	Local and City-regional	Both	Receptors: Road Users.	**Policy 1, Policy 2 and Policy 3**: Improving access to jobs and markets and targeted investment in integrated infrastructure packages, is unlikely to have a notable impact on road safety, reduced levels of transport crime or fear of crime. However, it is conceivable that better transport infrastructure which is resilient and more reliable, with greater embedded levels of safety design, is likely to improve user-experience and quality of life when travelling between home and work.	Mitigation links to Policy 4 which states that safety, crime and the needs of vulnerable groups is addressed.
Improve Local Amenity	+/-/?	+/-/?	+/-/?	Indirect Permanent	Local and City-Regional	Both	All	**Policy 1, Policy 2 and Policy 3**: Improving access to jobs and markets, skills and supply chains through improvements to transport infrastructure can have a short- and long-term impact on receptors within proximity of enhancements, particularly in relation to the	Mitigation links to Policy 4 which requires streets to be made healthy and people to feel safe. In addition, Policy seeks to work in tandem with town

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
								Spatial Priority Areas. During implementation, effects are likely to be temporary, however once completed the potential effects of such infrastructure will be permanent. Potential negative effects, such as noise or vibration, should be mitigated accordingly through the town planning and environmental impact processes.	planning to create attractive places.
Transport interventions benefit everyone	++	++	++	Direct Permanent	Local, City-Regional and National	Both	All	**Policy 1, Policy 2 and Policy 3**: By improving access to jobs and markets, skills and supply chains through improvements to transport infrastructure and reliability of existing systems will result in more travel choice for all equality groups.	Mitigation links to Policy 4, 5 and 6. However, future schemes should complete and equalities impact assessment, to ensure that targeted interventions take account of the needs of all groups.

Equalities Objectives									
Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Equalities 1: Age	+	+	+	Direct Permanent	City Region	Both	Receptors: All ages and all disabilities.	**Policy 1, Policy 2 and Policy 3:** By improving access to jobs, markets, skills and supply chains though better and more reliable transport initiatives, it is possible to create greater levels of freedom and social inclusion to groups which may have not owned a car before, increased independence and opportunities for all groups through public transport improvements and improved quality of life for all groups in society. Given the strategic nature of these policies, it is not possible at this stage to enforce implementation of specialist requirements for all groups. This will be completed through the design phase of specific interventions.	N/A
Equalities 2: Disability	+	+	+						
Equalities 3: Gender and Family	+	+	+				Receptors: All genders and families.		
Equalities 4: Race	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Equalities 5: Religion and Belief	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Equalities 6: Sexual Orientation	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A

Policy Recommendations

It is recommended that a policy matrix is established which considered the overlapping and feedback nature of specific policies within different policy 'goals'. This would ensure that:

- Historic and natural assets within the City Region are sensitively incorporated into any resultant policy proposals arising following the SCR Transport Study. Mitigation could include linkages to Policy 9 which would encourage all effects to be addressed through the Town Planning and Environmental Impact Assessment processes
- Impacts of targeted infrastructure interventions, particularly within the Integrated Infrastructure Packages, should be assessed against the EIA, Town Planning and Habitats Directive legislation (Policy 9)
- Effects of improved transport accessibility on air quality should be addressed through links to Policy 7, which seeks to actively improve air quality particularly in designated AQMAs Impacts on climate change should be addressed through connection to Policy 7, 8 and 9 which seeks to actively reduce the impact on climate change
- Linkages to Policy 4 and Policy 9 would ensure that temporary negative effects of construction of transport interventions is addressed through place-making and planning principles
- Local Employment Requirements could be conditioned to the delivery of targeted infrastructure interventions.

IA Appraisal Matrix 2: Policy 'Goal' Group Create *Healthy Streets Where People Feel Safe*

- Make our streets healthy and people feel safe
- Enhance our multi-modal transport system which encourages sustainable travel choices and is embedded in the assessment of transport requirements for new development, particularly for active travel
- Improve sustainable and inclusive access to our green and recreational spaces

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Protect and enhance our environmental heritage	+	+	++	Indirect Permanent	Local	Both	Receptors: Heritage Assets, Widespread groups; Visitors to City Region.	**Policy 4, Policy 5 and Policy 6:** To make streets healthy where people feel safe is likely to result in greater investment in streets and public realm to encourage people to use and enjoy them. Whilst these policies are unlikely to have a direct effect on this objective, by improving public realm and increasing inclusive accessibility, this may enhance the setting of a range of heritage assets and allow all portions of the population to enjoy and access these environmental and historic assets. This is also likely to reduce the impact from traffic on the natural environment. Increasing visitor numbers to natural and heritage sites needs to be managed to ensure the effect on the features can be mitigated.	Effect on heritage assets should be mitigated through the Town Planning and EIA processes which would allow possible mitigation measures to be appraisal (Policy 9).

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Minimise use and loss of environmental resources	+/-	+	+	Direct Permanent	Local	Natural environment	Receptors: Widespread Groups	**Policy 4, Policy 5 and Policy 6**: These policies seek to increase accessibility, inclusivity and safety through sustainable modes of transport. Each policy should therefore reduce the use of environmental resources by shifting away from fossil-fuel dependent modes of transport. On the whole, interventions to support active modes of travel are unlikely to require substantial areas of physical development land for major transport infrastructure, and therefore the effects of delivery on environmental resources is likely to be limited. However, given the interventions required to enhance a multi-modal transport system have not yet been defined, it is anticipated that an objective of these multi-modal systems will be to reduce the loss and use of environmental resources.	N/A
Improve Air Quality and reduce greenhouse gas emissions	+	+	+	Direct Permanent	Local, City region	Natural environment	Receptors: Widespread Groups	**Policy 4, Policy 5 and Policy 6**: These policies seek to increase accessibility, inclusivity and safety through sustainable modes of transport, such as active travel. Each policy should therefore reduce the use of environmental resources by shifting away from fossil-fuel dependent modes of transport.	N/A

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
								These policies will therefore have a positive impact on air quality and greenhouse gas emissions by shifting towards more sustainable forms of public transport, whilst giving residents more opportunities to make choices on the forms of transport which they use.	
Support a managed response to climate change	++/?	++/?	++/?	Direct Permanent	Local, City Region	Natural environment	Receptors: Widespread Groups	**Policy 4, Policy 5 and Policy 6**: These policies seek to increase accessibility, inclusivity and safety through sustainable modes of transport, such as active travel. Implementation of these policies is likely to have a long-term effect on climate change and reducing greenhouse gases by encouraging active travel. Until the forms of transport included in multi-modal is defined to a further degree of detail, the scale of positive effect will be unknown.	N/A
Maximise access to jobs, training and skills and other services	+	+	+	Direct Permanent	Local, City Region	Both	Receptors: Widespread Groups	**Policy 4, Policy 5 and Policy 6**: These policies support this objective by addressing issues such as accessibility, safety, inclusivity and affordability of travel choices. By improving the safety of streets and increasing accessibility through a multi-modal transport system, it will be possible	Emphasis should be placed on transport remaining affordable for the most

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
								to address issues of specific social groups by linking people to better opportunities, jobs, training, markets and services in remote areas. There is, however, a risk that any subsequent fare increases may preclude more deprived communities from utilising public transport.	deprived communities.
Support economic growth and the creation of jobs within transport related sectors	+/?	+/?	+/?	Direct Permanent	Local, City Region	Both	Receptors: Widespread Groups	**Policy 4 and Policy 6**: Whilst there are strong linkages between improved accessibility, public realm and economic growth, the scale of the positive effect currently unknown. Enhanced multi-modal transport and attractive places should support economic growth which lead to job creation in multiple sectors. The extent to which this encourages the creation of more employment in transport sectors is unknown. Whilst **Policy 5** should encourage social inclusion by increasing work opportunities and access to jobs in the region, again, there is a risk that fare prices (in line with wider economic growth) preclude more deprive communities from utilising public transport.	Emphasis should be placed on transport remaining affordable for the most deprived communities.

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Increased levels of physical activity	+	+	+	Direct Permanent	Local, City Region	Both	Receptors: Widespread Groups	**Policy 4** and **Policy 6** are likely to increase the physical activity by allowing choice and opportunities for walking and cycling for all groups in society. Access to green spaces may also encourage wider physical activity, healthy lifesyles and better quality of life. **Policy 5** is likely to enhance take-up of active modes of travel and sustainable travel choices which may indeed promote healthy lifestyles and physical activity for all groups.	N/A
Improved road safety, reduced levels of transport related crime and reduced fear of crime	+ and -/?	+ and -/?	+ and-/?	Direct Permanent	Local	Both	Receptors: Widespread Groups	**Policy 4** and **Policy 6** are likely to have a strong role in improving road safety, particularly through investment in streets to make them more attractive places for people to use and enjoy. **Policy 5** is likely to have a role in promoting safety on multi-modal transport systems, if design elements reduce opportunities for crime and fear of crime for all groups.	Emphasis should be placed on designing out opportunities for crime or the fear of crime on all modes of transport.
Improve Local Amenity	+/-	+	+	Direct Permanent	Local, City Region	Both	Receptors: Widespread Groups	**Policy 4**, **Policy 5** and **Policy 6** will have mainly positive effects on improving local amenity in urban environments where interventions take place. Amenity is likely to be effected negatively during the construction of specific interventions to facilitate active travel.	N/A

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Transport interventions benefit everyone	+	+	+	Direct Permanent	Local and City Regional	Both	Receptors: Widespread Groups	To a large extent, **Policy 4, 5 and 6** will benefit society in the long-term. By improving sustainable and inclusive access to green and recreational spaces, enhancing the usability and accessibility of streets and encouraging sustainable travel choices through opportunities for active travel.	N/A

Equalities Objectives									
Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Equalities 1: Age	+	+	+	Direct Permanent	City Region	Both	Receptors: All ages and all disabilities.	**Policy 4, 5 and 6** will benefit all groups in society in the long-term. By improving sustainable and inclusive access to green and recreational spaces, enhancing the usability and accessibility of streets and encouraging sustainable travel choices through opportunities for active travel this will create more opportunities for more groups in society. Given the strategic nature of these policies, it is not possible at this stage to enforce implementation of specialist requirements for all groups. This will be completed through the design phase of specific interventions.	N/A
Equalities 2: Disability	+	+	+						
Equalities 3: Gender and Family	+	+	+				Receptors: All genders and families.		
Equalities 4: Race	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Equalities 5: Religion and Belief	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Equalities 6: Sexual Orientation	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A

Policy Recommendations

- It is recommended that a policy matrix is established which considered the overlapping and feedback nature of specific policies within different policy 'goals'. This would ensure that:
    - Historic and natural assets, and their setting, are sensitively incorporated into any resultant policy proposals arising following the SCR Transport Study. Mitigation could include linkages to Policy 9 which would encourage all effects to be addressed through the Town Planning and Environmental Impact Assessment processes.
    - Effects of improved transport accessibility and multi-modal transport on air quality should be addressed through links to Policy 7, which seeks to actively improve air quality particularly in designated AQMAs
    - Impacts on climate change should be addressed through connection to Policy 7, 8 and 9 which seek to actively reduce the impact on climate change
- Introduction of Low Carbon technologies and public transport would be targeted towards reducing the use and loss of environmental resources, minimising climate change and minimising the effects on air quality within the City Region, both during construction of interventions and throughout operation.
- Negative effects on amenity from the delivery of transport interventions in the short term should be mitigated through good construction management and planning conditions.
- Emphasis should be placed on designing out opportunities for crime or the fear of crime on all modes of transport promoted through the Transport Study

IA Appraisal Matrix 3: Policy 'Goal' Group *Improve the Quality of Our Outdoors*

- Actively improve air quality, especially in designated AQMAs
- Deliver a low carbon transport network, including a zero carbon public transport network
- Work in tandem with the planning and development community to create attractive places

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Protect and enhance our environmental heritage	0 and +	0 and +	0 and +	Direct Permanent	City Region	Natural Assets	Receptors: Natural Features	**Policy 7** Improving air quality is unlikely to have a directly notable effect on heritage assets within the City Region. The policy is likely to have a direct impact on air quality associated with designated ecological assets.	N/A
	0	0	+	Indirect Permanent	City Region	Both	Receptors: Heritage assets and natural features.	**Policy 8** seeks to deliver a low carbon transport network. Whilst this is unlikely to have a direct impact on environmental heritage of the City Region, delivering low carbon infrastructure may seek to reduce the impacts of climate change in the longer term which can have a negative effect on heritage assets and the natural environment.	N/A

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
	+	+	+	Direct Permanent	Local and City Region	Both	Receptors: Heritage Asset	**Policy 9** aims to encourage transport infrastructure development whilst working in tandem with town planning to create attractive places, where competing priorities are mediated and the impact on heritage and natural assets is mitigated as necessary. By working alongside the Town and Country Planning Act and EIA processes, effects on heritage features within the region are likely to be balanced against wider goals to ensure that positive sustainable development is achieved. Chapter 12 within the National Planning Policy Framework encourages a positive strategy for the conservation and enjoyment of the historic environment. Therefore the overall effect is likely to be positive in the short, medium and long term.	N/A
Minimise use and loss of environmental resources	0 and +	0 and +	0 and +	Direct Permanent	City Region	Natural Assets	Receptors: Natural Features	**Policy 7** Improving air quality is unlikely to have a directly notable effect on heritage assets within the City Region. The policy is likely to have a direct impact on minimising the effects of poor air quality on designated ecological assets.	N/A

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
	+	+	+	Direct Permanent	City Region	Natural Assets	Receptors: Natural Features	**Policy 8** Given the interventions required to deliver a low carbon transport network have not yet been defined, and could include a 'step-change' in technologies used, it is unclear the extent to which this will minimise use and loss and environmental resources in the short-term. In the longer term, it is anticipated that a move towards a low carbon network would reduce the use and loss of environmental resources, however there is insufficient information at this stage to draw this conclusion.	Introduction of Low Carbon technologies and public transport should be as resource efficient as possible and reduce the impact on environmental resources.
	+	+	+	Direct Permanent	City Region	Both	Receptors: Stakeholders and environmental resources in SCR	**Policy 9** stipulated that the Transport Strategy will work in tandem with town planning to create attractive places. The TCPA and EIA processes are founded on sustainable development and reducing the use of environmental resources through construction and operation.	N/A
Improve Air Quality and reduce greenhouse gas emissions	++/?	++	++	Direct Temporary and Permanent	City Region and National	Both	Receptors: Wider groups, natural assets (such as the atmosphere)	**Policy 7** and **Policy 8** are strongly likely to improve air quality in the long term through encouraging a step-change in air quality and GHG emissions. This will be particularly important within Air Quality	Air Quality impacts of construction should be mitigated.

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
								Management Zones where air quality is managed. By encouraging all groups to choose sustainable travel choices over private cars and introduction of new technologies to address the most challenging areas, the overall effect is likely to be strongly positive and permanent. Given the exact methods and technologies to improve air quality have not yet been defined, it is possible that during construction air quality may be temporarily worsened in the short term.	
	++	+	+	Indirect Permanent	City Region	Both	Receptors: Wider groups, natural assets (such as the atmosphere)	**Policy 9** states that by working in tandem with town planning, it is possible to create attractive places. Paragraph 124 of the NPPF states that planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality management areas. Therefore, through the introduction of this objective, it is likely that Town Planning will be able to influence the framework for assessing positive effects on air quality and reducing GHG from an early stage.	N/A

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Support a managed response to climate change	++/?	++	++	Direct Temporary and Permanent	City Region and National	Both	Receptors: Wider groups, natural assets (such as the atmosphere)	**Policy 7 and Policy 8** are strongly likely to support a managed response to climate change. By encouraging all groups to choose sustainable travel choices over private cars and introduction of new technologies to address the most challenging areas, the overall effect on climate change is likely to be strongly positive by encouraging a reduction in carbon emissions, more sustainable patterns of travel and greater levels of active travel. However, given the exact methods and technologies to improve air quality have not yet been defined, it is possible that during construction, air quality may be temporarily worsened in the short term.	Air Quality impacts of construction should be mitigated.
	++	+	+	Indirect Permanent	City Region	Both	Receptors: Wider groups, natural assets (such as the atmosphere)	**Policy 9** states that by working in tandem with town planning, it is possible to create attractive places. The NPPF is founded on the principles of sustainable development, of which reducing contributions towards climate change is ingrained. Introducing this policy within the Transport Study will encourage early engagement with the stakeholders involved in the TCPA and EIA processes.	N/A

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Maximise access to jobs, training and skills and other services	+/?	+/?	+/?	Indirect Permanent	City Region	Built environment	Receptors: Wider groups	**Policy 7, 8 and 9** are likely to have an indirect positive effect on the access to jobs and markets in the long term. Policy 8 in particular, may create roles in the creation of high technology, zero carbon transport infrastructure. However, until technologies are determined, is unclear whether this objective would create better overall access to jobs and services, or whether these would be displaced from elsewhere.	N/A
Support economic growth and the creation of jobs within transport related sectors	+/?	+/?	+/?	Indirect Permanent	City Region	N/A	Receptors: Wider groups	**Policy 7, 8 and 9** are likely to have an indirect positive effect on supporting economic growth in the long term. Improving air quality is likely to have long term positive impacts on human health, and reduce the associated healthcare costs of treating the effects of poor air quality. Better air quality is also likely to result in greater labour productivity, greater levels of healthy economically active employees, reduce air-pollution related healthcare costs and greater crop yields. **Policy 8** in particular, may create roles in the creation of high technology, zero carbon transport infrastructure.	N/A

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
								However, until technologies are determined, is unclear whether this objective would create better overall access to jobs and services, or whether these would be displaced from elsewhere.	
Increased levels of physical activity	+	+	++	Direct Permanent	City Region	N/A	Receptors: Wider groups	**Policy 7 and 8** will seek to improve air quality, which will in turn have a positive impact on improving both human health and the ability to take part in exercise. By increasing opportunities for active travel, this will indirect increase levels of physical activity. Aligning with the Planning System (**Policy 9**) will ensure that public consultation and public awareness of planned interventions is maximised.	N/A
Improved road safety, reduced levels of transport related crime and reduced fear of crime	+/?	+/?	+/?	Direct Permanent	City Region	N/A	Receptor: Wider Groups	Whilst **Policy 7** will have a relatively limited impact on improving road safety, given it is targeted at improving air quality as opposed to improving opportunities for crime and the fear of crime. The fear of crime can prevent people from using public transport. Whilst **Policy 8** is not directly targeted at improving the safety of public transport, it is essential that people feel safe on	Safe by design elements should be embedded within all new sustainable transport measures to reduce opportunities for crime and fear of

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
								alternative, sustainable forms of transport to encourage use. Safe by Design elements should be embedded within all new sustainable transport measures to reduce opportunities for crime and fear of crime for all groups. By working closely with Town Planning processes from the start of the Transport Study, **Policy 9** will encourage safe and secure layouts of facilities which minimise conflicts between competing road users. Early engagement will support early engagement with all stakeholders.	crime for all groups.
Improve Local Amenity	+/-/?	+	+	Direct Permanent	City Region	N/A	Receptors: Wider Groups including street users,	**Policy 7, 8 and 9** are all targeted at improving local amenity within streets in the Sheffield City Region as part of the 'ten indicators of healthy streets'. Improving air quality, improving opportunities for active travel and reducing car use/congestion will all result in an improvement to local amenity in the longer term. Mediating completing land uses and the making of high quality spaces will be supported through the Local Planning process. However, it is possible that the implementation/ construction period of	Negative effects on amenity in the short term should be mitigated through good construction management and planning conditions.

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
								interventions actually results in short term negative effects on amenity, however there is too limited information at this stage to be able to determine the effect.	
Transport interventions benefit everyone	+	+	+	Indirect Permanent	City Region	Both	Receptors; Wider Groups (including stakeholders consulted through statutory planning processes) and natural receptors (such as the environment)	**Policy 7, 8 and 9** are all likely to have mainly positive impacts on receptors within the City Region, in terms of achieving transport interventions which improve air quality, improving local amenity, and reduce congestion through encouraging the use of sustainable transport measures and undertaking early engagement with stakeholders through the statutory planning process. Transport interventions should be positive in the longer term, however there is a possibility that temporarily, construction of interventions may have a short term negative effect on specific groups.	Negative effects on amenity in the short term should be mitigated through good construction management and planning conditions.

Equalities Objectives									
Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Equalities 1: Age	+	+	+	Direct Permanent	City Region	Both	Receptors: All ages and all disabilities.	By improving improve air quality, improving local amenity, and reducing congestion through encouraging the use of sustainable transport measures and undertaking early engagement with stakeholders through the statutory planning process, **Policy 7, 8 and 9** will benefit all groups in society in the long-term. Given the strategic nature of these policies, it is not possible at this stage to enforce implementation of specialist requirements for all groups. This will be completed through the design phase of specific interventions.	N/A
Equalities 2: Disability	+	+	+						
Equalities 3: Gender and Family	+	+	+				Receptors: All genders and families.		
Equalities 4: Race	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Equalities 5: Religion and Belief	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Equalities 6: Sexual Orientation	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A

Policy Recommendations

- It is recommended that a policy matrix is established which considers the overlapping and feedback nature of specific policies within different policy 'goals'. This would ensure that:
  - Effects of improved transport accessibility and transport systems on air quality should be addressed through links to Policy 7, which seeks to actively improve air quality particularly in designated AQMAs.
  - Impacts on climate change should be addressed through connection to Policy 7, 8 and 9 which seek to actively reduce the impact on climate change.
- Ensure low carbon transport networks are targeted towards reducing the use and loss of environmental resources, minimising climate change and minimising the effects on air quality within the City Region, both during construction of interventions and throughout operation.
- Emphasis should be placed on designing out opportunities for crime or the fear of crime on all modes of transport promoted through the Transport Study.
- Historic and natural assets, and their setting, are sensitively incorporated into any resultant policy proposals arising following the SCR Transport Study.

IA Appraisal Matrix 4: Policy 'Goal' Group *Promote enable and adapt different technologies.*

- Be at the forefront of transport innovation
- Enable different solutions to create a fully integrated transport and inclusive service
- Adopt technology solutions to stimulate change

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Protect and enhance our environmental heritage	+/-/?	+/-/?	+/-/?	Indirect/Direct Temporary and Permanent	Local and City Region	Both	Receptors: Heritage features and natural assets within the City Region.	**Policy 10, 11 and 12** are focussed on the improvement of transport innovation, the enabling of different solutions to create an integrated transport service and the adoption of technology solutions to stimulate change. These policy interventions may increase the extent to which heritage features and natural assets within the City Region are considered accessible, and reduce the overall impact of congestion and climate change on the setting and future success of these assets. However, there may be an impact on the historical assets within the City Region, for example, technology solutions may require additional features to be added to historic assets. The scale and the magnitude of these effects is currently unknown. However, technology solutions and transport innovation	Effects of transport innovation and technology solutions on heritage assets should be addressed through the typical town planning and EIA processes.

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
								should be sensitively incorporated as necessary into historic assets. This should be managed through the Town Planning and EIA processes, where the overall effects of this policy on heritage assets should be mitigated.	
Minimise use and loss of environmental resources	+/-/?	+	+	Indirect/Direct Temporary and Permanent	Local and City Region	Both	Receptors: Environmental assets.	**Policy 10, 11 and 12** are forward-looking and should incorporate efficient use of resources into the overall roll-out of transport innovation and technology solutions. However, given the innovative technologies have not yet been determined, it is possible that the 'step-change' in technologies results in greater use of environment resources in the short-term. In the longer-term, it is anticipated that a move towards innovative and fully-integrated technologies would reduce the use and loss of environmental resources, however there is insufficient information at this stage to draw this conclusion.	Introduction of transport innovation, technology solutions and a fully-integrated transport service should encourage the efficient use of environmental resources during construction.
Improve Air Quality and reduce greenhouse gas emissions	+/-/?	+	+	Indirect/Direct Temporary and Permanent	Local and City Region	Both	Receptors: Environmental assets, the atmosphere and populations in SCR.	**Policy 10, 11 and 12** are forward-looking and should incorporate air quality management measures into the overall roll-out of transport innovation and technology solutions. Better, forward-looking technologies should be	Introduction of transport innovation, technology solutions and a fully-integrated transport service

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
								inherently seeking to reduce the impact of transport and mobility on air quality. However, given the innovative technologies have not yet been determined, it is possible that the 'step-change' in technologies results in greater use of environment resources and increase in carbon emissions in the short-term through construction. In the longer-term, it is anticipated that a move towards innovative and fully-integrated technologies would improve overall air quality and reduce greenhouse gas emissions.	should encourage measures which minimise greenhouse gas emissions during the construction phases.
Support a managed response to climate change	+/-/?	++	++	Indirect/Direct Temporary and Permanent	Local and City Region	Both	Receptors: Environmental assets.	**Policy 10, 11 and 12** are forward-looking and should incorporate interventions to manage climate change into the overall roll-out of transport innovation and technology solutions. Better, forward-looking technologies should be inherently seeking to reduce the impact of transport and mobility on climate change. However, given innovative technologies have not yet been determined, it is possible that the 'step-change' in technologies results in greater use of environment resources and increase in	Introduction of transport innovation, technology solutions and a fully-integrated transport service should encourage measures which minimise greenhouse gas emissions and manage climate change during the

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
								carbon emissions in the short-term through construction. In the longer-term, it is anticipated that a move towards innovative and fully-integrated technologies would reduce greenhouse gas emissions.	construction phases.
Maximise access to jobs, training and skills and other services	+/?	+/?	+/?	Indirect Permanent	Local and City Region	Both	Receptors: Widespread user groups.	**Policy 10 and 12** are strongly focussed on improving transport innovation or adopting technology solutions to stimulate change. These solutions may improve the overall reliability and efficiency of services, which in turn may motivate greater numbers of receptors to access jobs and markets. Given the innovative technologies have not yet been determined, it is not yet possible to conclude the scale of this positive effect.	N/A
	+	+	+	Direct Permanent	Local and City Region	Both	Receptors: Widespread user groups.	**Policy 11** seeks to enable different solutions to create a fully integrated service. This should allow a multi-modal transport system which achieves a seamless user experience on more sustainable modes of transport. This may encourage behavioural change and encourage people to access jobs in different city regions or in different markets. Increasing awareness of these interventions should maximise access.	N/A

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Support economic growth and the creation of jobs within transport related sectors	+	+	+	Indirect Permanent	City Region	Both	Receptors: Widespread user groups.	**Policy 10 and 12** are likely to have an indirect positive effect on supporting economic growth in the long term. Transport innovation and technology solutions should support a more reliable and efficient service across the City Region. Greater and more reliable movement of people is likely to support opportunities for greater economic growth.	N/A
	+/?	+/?	+/?	Indirect Permanent	City Region	N/A	Receptors: Widespread user groups.	**Policy 11** in particular, may create employment in the creation of high technology, innovative transport infrastructure. However, until technologies are determined, it is unclear whether this objective would create better overall access to jobs and services, or whether these would be displaced from elsewhere.	N/A
Increased levels of physical activity	+	+	+	Indirect Permanent	City Region	Both	Receptors: Residents and Employees	**Policy 10, 11 and 12** are likely to have a positive effect on increasing levels of physical activity within the City Region, as technology becomes more accessible of all. It will be important to ensure that these step-change improvements in technology is accessible to all groups.	N/A

Sustainability Objectives									
SEA Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Improved road safety, reduced levels of transport related crime and reduced fear of crime	+	+	+	Indirect Permanent	City Region	Both	Receptors: Residents and Employees	It is possible that smart technologies could be integrated to increase road safety within the City Region, to reduce the fear of crime and to increase the level of safety on public transport. Indeed, it is likely adopting technology solutions to support changes may indeed reduce use of the car.	N/A
Improve Local Amenity	+	+	+	Indirect Permanent	City Region	Both	Receptors: Residents and Employees, local environment	It is possible that smart technologies could be integrated to increase local amenity within the City Region. Indeed, it is likely adopting technology solutions to support changes may indeed reduce use of the car and congestion.	N/A
Transport interventions benefit everyone	+	+	+	Indirect Permanent	City Region	Both	Receptors: Residents and Employees, local environment	It is possible that smart technologies improve accessibility to markets and services, local amenity, reliability and use of public transport. However it is necessary that technology is made available to all receptors to ensure that this encourages inclusivity of all groups within the City Region.	N/A

Equalities Objectives									
Objective	**Timescales**			**Analysis of Effects**			**Likely receptors**	**Commentary**	**Opportunities for Mitigation**
	Short (0-5 years)	**Medium (5-10 years)**	**Long (10+ years)**	**Type of Effect (Direct or Indirect, and Permanent or Temporary)**	**Scale (Local, City Regional, Wider)**	**Location (Natural or Built Environment)**			
Equalities 1: Age	+	+	+	Direct Permanent	City Region	Both	Receptors: All ages and all disabilities.	By improving technology in the City Region it is possible that transport becomes accessible for all groups in society, by improve accessibility to markets and services, local amenity, reliability and use of public transport. However it is necessary that technology is made available to all receptors to ensure that this encourages inclusivity of all groups within the City Region. Given the strategic nature of these policies, it is not possible at this stage to enforce implementation of specialist requirements for all groups. This will be completed through the design phase of specific interventions.	N/A
Equalities 2: Disability	+	+	+						
Equalities 3: Gender and Family	+	+	+				Receptors: All genders and families.		
Equalities 4: Race	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Equalities 5: Religion and Belief	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A
Equalities 6: Sexual Orientation	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A

Policy Recommendations

- It is recommended that a policy matrix is established which considers the overlapping and feedback nature of specific policies within different policy 'goals'. This would ensure that:
  - Historic and natural assets, and their setting, are sensitively incorporated into any resultant policy proposals arising following the SCR Transport Study. Mitigation could include linkages to Policy 9 which would encourage all effects to be addressed through the Town Planning and Environmental Impact Assessment processes.
  - Impacts on climate change should be addressed through connection to Policy 7, 8 and 9 which seek to actively reduce the impact on climate change. Ensure innovation in transport is targeted towards reducing the use and loss of environmental resources, minimising climate change and minimising the effects on air quality within the City Region, both during construction of interventions and throughout operation.
- Emphasis should be placed on designing out opportunities for crime or the fear of crime on all modes of transport promoted through the Transport Study.