Jacobs

Glasgow Transport Strategy Strategic Environmental Assessment

Environmental Report

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Glasgow City Council



Glasgow Transport Strategy Strategic Environmental Assessment

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Client Name: Glasgow City Council

Project Manager: Andrew Kelly
Author: Erika Schmolke

Jacobs U.K. Limited

160 Dundee Street Edinburgh, EH11 1DQ United Kingdom T +44 (0)131 659 1500 F +44 (0)131 228 6177 www.jacobs.com

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Purpose and/or objectives of PPS



Key Facts

Name of Responsible Authority Glasgow City Council

Title of plan, programme or strategy (PPS)

Glasgow Transport Strategy (GTS)

Requirement for the PPS Transport Scotland guidance recommends local authorities

prepare a Local Transport Strategy (LTS) every 3 years, plus certain measures enshrined in legislation e.g. workplace parking levy also have to be justified within an LTS. Glasgow City Council's LTS is out of date (2007-09) and requires updating in this context. It is also important for the city to respond to the report from the Connectivity Commission for Glasgow, which made a number of recommendations. Further to this the city declared a Climate Emergency and outlined 61 actions to achieve carbon neutrality by 2030, which have since informed a new Climate Plan, some of which relates to transport.

Subject of the PPS Transport, mobility and placemaking.

Period covered by the PPS 2021 – 2030/31

Frequency of updates To be confirmed – most likely a review & refresh every 5

years.

Requirement for SEA In accordance with The Environmental Assessment of Plans

and Programmes (Scotland) Act 2005 (the Act), the GTS

requires a SEA under Section 5(3) of the Act.

Geographic area covered by the PPS

The main focus of the GTS will be the Glasgow City Council area. However, it will also examine wider regional transport

issues, seeking to address the adverse impacts of transport

movements originating or terminating in Glasgow.

To set out the objectives, policies, priorities and investment plan for the next ten years and beyond. Glasgow Transport

Strategy will form the overarching framework for transport decision-making and investment in the city, whilst more detailed plans sit underneath – a new Liveable Neighbourhoods workstream, a City Centre

Transport Plan to update the City Centre Transport Strategy, and a new Active Travel Strategy to build on the

existing Strategic Plan for Cycling.

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Non-Technical Summary

Introduction

This report summarises the findings of the Strategic Environmental Assessment (SEA) which was conducted for Glasgow City Council's (GCC) Glasgow Transport Strategy (here after referred to as 'GTS'). The Environmental Assessment (Scotland) Act 2005 sets out the statutory requirements for conducting a SEA, which ensures the environment and other sustainability aspects are considered at an early stage of decision making when preparing public plans, programmes and strategies (PPS).

The purpose of the Environmental Report is to:

- Provide information on the Glasgow Transport Strategy
- Identify, describe and evaluate the likely environmental influence of the draft Strategy; and
- Provide an opportunity for the Consultation Authorities and the public to comment on any aspect of this Environmental Report.

Background to the Glasgow Transport Strategy

Transport Scotland recommends local authorities prepare a new transport strategy every 3 years. The GTS will succeed Glasgow City Council's Local Transport Strategy (2007-09) (LTS).

The Council is producing a new Glasgow Transport Strategy. This new local transport strategy is city-wide, and provides a framework for investment and decision-making on transport issues up to 2030. The GTS is being published in two parts. Part 1 is a Policy Framework, which sets out transport policies and related actions, to guide decision-making in the delivery of significant change in sustainable transport provision in the Part 1 of the Glasgow Transport Strategy, a Policy Framework, has already been adopted (2022) and was subject to an interim SEA assessment. This assessment is summarised in section 5 of this report,. It is now supported by the proposed Part 2, a Spatial Delivery Framework, which has been informed by further SEA assessment and is to be published for consultation alongside this Environmental Report.

The GTS aims to provide an overarching framework for transport decision making and investment in the City. The GTS has more detailed plans sitting underneath the overarching Framework including a Liveable Neighbourhoods workstream, a City Centre Transport Plan and an Active Travel Strategy.

The Glasgow Transport Strategy (GTS) sets out the City's objectives, policies, priorities and investment plan up to 2030. It follows from key recent work undertaken by the Glasgow Connectivity Commission and by Glasgow City Council (GCC) in developing the Case for Change that sets the framework for the GTS, and the extensive Public Conversation on Glasgow's Transport Future. The GTS sits within a framework of bold policy and strategy developments at national, regional and local level.

The GTS has been developed using a multi-criteria appraisal approach, in line with STAG. The 'Case for Change' constitutes the first stage of the STAG process and involved data analysis and stakeholder engagement to provide a baseline for the study area (the Glasgow City Council area) and to identify transport-related problems and opportunities, as well as any constraints that could exacerbate future transport issues and influence the development of solutions. This analysis enabled the development and refinement of a set of Transport Planning Objectives, which informed the development of options to both address the identified problems and enable the realisation of opportunities.



Assessment Methodology

The SEA process has been aligned with the GTS development to ensure the SEA has had influence at each stage of the strategy development and, along with the Equality Impact Assessment process, has informed the refinement and revision of the proposed strategy.

The baseline and policy review were carried out to determine the SEA topics which should be scoped into the assessment and would be anticipated to have a positive and/or negative impact, as well as topics where a significant cumulative impact is anticipated. Schedule 3 of the 2005 act requires the GTS to be assessed against the following environmental issues:

- Air quality
- Climate
- Population and human health
- Material assets
- Water
- Biodiversity, flora and fauna
- Land and soil
- Cultural heritage
- Landscape and townscape

The SEA assessments used a set of SEA objectives and assessment that cover each of the environmental topics scoped into the assessment. The SEA objectives and assessment criteria presented have been developed from a comprehensive review of the baseline issues and policy requirements.

Focussed assessments have been undertaken by SEA specialists and the GTS development team, who worked together to understand both the intention and ambition of the draft policies and interventions. This includes examining the options available and making recommendations to strengthen the likely environmental gain or improve the sustainability benefits associated with the intervention. Assessments were undertaken at each stage of the GTS development. The stages are:

- Stage 1 Compatibility Assessment with the Transport Strategy Objectives
- Stage 2 Detailed assessment of the draft Policy Framework
- Stage 3 Assessment of Spatial Delivery Framework's packages of interventions

These assessments included examining the options available and making recommendations to strengthen the likely environmental gain or improve the sustainability benefits associated with the GTS. Stage 2 and 3 followed a matrix-based approach, using the STAG scoring matrix to identify likely significant effects on SEA objectives

Policy Context

The GTS plays a pivotal role in linking national, regional and city policy context through to guiding delivery plans and resourcing across the city. The SEA considered the Strategy within the context of a focussed range of other plans, programmes and strategies (PPS). This process helped to identify a range of environmental protection objectives and problems and issues that the Strategy should take cognisance of and might support with its delivery. This comprehensive policy review has been undertaken and is included as Appendix B to this Environmental Report.



Environmental Context

A baseline information gathering exercise was carried out in order to summarise the key characteristics of GCC, focusing on the SEA issues. The full baseline report is provided in Appendix A of this Environmental Report and outlines the relevant environmental issues and the challenges for the GTS. Some key challenges for the GTS are:

- Reducing traffic volumes into the city centre and imposing stricter conditions on vehicle movements through city centre, whilst minimising equality impacts;
- Contribution towards Glasgow's Climate Plan which places strong emphasis on role of transport in the city's move towards a net zero carbon city by 2030;
- Implementing and designing solutions that to build more resilient societies and communities to respond to the impacts of climate change, reducing the need to travel and reducing journey lengths, while also improving connectivity and accessibility of opportunity for disconnected communities;
- Facilitating and promoting active travel and providing a network that people feel safe to use;
- [Supporting a transition to low / zero carbon vehicles in the city]
- With the need for multifunctional green infrastructure, ensuring provision for flood management, sustainable drainage, access and biodiversity; and
- Preserving and enhancing any unique landscape characteristics. Ensuring new development is informed by landscape character assessment as different landscapes have different capacities to absorb new development.

In the absence of the GTS it is possible that some existing environmental problems would persist or even worsen. in line with Schedule 3 of the 2005 Act, the environmental evolution without the PPS should be considered. Environmental issues identified in the GTS Case for Change Report (GCC, 2021) and the evolution of the environmental baseline, particularly the environmental problems and trends identified, are presented in Section 3.3 of this Environmental Report.

Key Findings

The interim SEA assessment in 2021 concluded that the draft Policy Framework would have predominately positive effects across the SEA topics. At stage three the final package of interventions which will form the Spatial Delivery Framework (SDF) also appeared to have predominately positive impacts on the SEA topics. A summary of the Policy and SDF findings are presented in the table below against each SEA topic.



SEA Topic	Policy Framework Findings (Cumulative Assessment)	Spatial Delivery Framework Findings (Cumulative Assessment)
Air Quality & Climatic Factors	Creation of 20minute neighbourhoods and the encouraging of hybrid models of working is expected to reduce unsustainable travel for short journeys. The policy framework makes reference to the sustainable travel hierarchy and a mode shift towards sustainable transport / low emission vehicles to realise air quality and climate change improvement targets. Air quality and climatic factors scored positively across all nine packages.	The final package of interventions is expected to reduce the number of private road trips across the GCC study area and increase the number of trips made by public transport within all the AQMAs. The final package of interventions is not expected to achieve the GTS Policy Framework target of a 30% reduction in private car km, however, should additional uptake in active travel materialise the car km reduction could be around 16% by 2030. This equates to a 7% reduction in carbon emissions. Further detail on carbon reductions is provided in Section 5. Overall, a positive moderate impact is expected on air quality and climatic factors.
Population and Human Health	The policies recognise the links between poor air quality and health, as well as the inequalities around access to sustainable transport, and aim to address these issues. There is a focus on fair and safe access to services for all in the city including, women, people with disabilities, people from ethnic minorities and the LGBT+ community. Children in particular are recognised as requiring access to affordable transport to allow access to education and recreational activities. Affordable public transport is identified as an important mechanism in ensuring equality in access to healthcare and food, as well as employment and training for adults. Population and human health scored positively across all nine packages.	Some interventions such as CYC1, CYC2A, DEV6B and WLK1,2,3, for example, is aimed at promoting active travel and encouraging physical activity, this leads to improvements to health and wellbeing for communities. The final package of interventions is expected to have a positive moderate impact on population and human health.
Material assets	Integrated travel is expected to improve access to essential services, employment, and the natural environment for people living in the city. Additionally, the policies seek to utilise existing technology to improve travel experience and planning for travel across several mode types. The policies would have a positive impact on Materials through supporting active and sustainable travel and facilitation of last-mile delivery solutions which would reduce the impact of heavy traffic on infrastructure. Material assets scored positively across eight packages with the exception of Package 4 (Collective transport) where the impact is uncertain.	Much of the interventions that require infrastructure development, for example PT6, PT10 and WAT3, will aim to integrate the public transport network and provide new connections across the city centre. The final package of interventions is expected to have a positive minor impact on material assets.



SEA Topic	Policy Framework Findings (Cumulative Assessment)	Spatial Delivery Framework Findings (Cumulative Assessment)
Water	The policies are expected to have a positive impact on the water environment as it sets out the importance of the blue infrastructure in the travel network and as part of a high-quality public realm. The policies explicitly refer to designing infrastructure taking climate resilience into account, particularly in relation to flood risk management. Water quality would also be improved by the requirement to manage run-off from roads through SUDS and other appropriate drainage. Water scored positively in three packages (packages 2,5 and 8).	WAT1 and WAT2 have a negative impact on water as their use of the River Clyde for transport may result in a reduction in water quality and may increase the likelihood of pollution incidents from boats. Infrastructure proposed as part of the final package of interventions such as Mobility hubs (MS1) and the Freight Distribution centres (FRE12) are not located in areas that have a high likelihood of surface water flooding. Overall, the final package of interventions is expected to have a neutral impact on water. Later stages of the Spatial Delivery Framework development will need to take into consideration areas of current and future flood risk and how water moves through the catchment when identifying the location of certain interventions particularly those that require infrastructure development.
Biodiversity, Flora and Fauna	The policies are focussed on enhancing access to green space, improving blue/green network connectivity, increasing tree cover and creating habitats, protecting wildlife, and promoting sustainable travel. Biodiversity scored positively in two packages (package 2 and 8).	The final package of interventions is expected to have a neutral impact on biodiversity. Later stages of the Spatial Delivery Framework development will need to take into consideration the location of designated biodiversity sites (SSSI, LNRs and SNH Country parks) when identifying the location of certain interventions particularly those that require infrastructure development.
Soil and Geology	Interventions that reduce the volume of traffic on the roads that use fossil fuels may have an indirect positive impact on land quality as there will be less pollutant run off to soils. Soil and geology scored positively in two packages (package 2 and 8).	The final package of interventions is expected to have a neutral impact on soils and geology. Later stages of the Spatial Delivery Framework development will need to take into consideration the location of greenspace, derelict land and brownfield sites when identifying the location of certain interventions particularly those that require infrastructure development.

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SEA Topic	Policy Framework Findings (Cumulative Assessment)	Spatial Delivery Framework Findings (Cumulative Assessment)
Cultural Heritage	Encouraging the move to active travel and away from private vehicles will reduce congestion in the city centre. The reduced traffic will improve townscape and public realm which could benefit the setting of cultural heritage assets The policies would have a positive impact on Cultural Heritage through facilitating effective transport for Glasgow as a tourist destination Cultural heritage scored positively across five packages (2, 3, 5, 8 and 9).	The final package of interventions is expected to have a neutral impact on cultural heritage. Later stages of the Spatial Delivery Framework development will need to take into consideration the location of designated historic and cultural assets when identifying the location of certain interventions particularly those that require infrastructure development.
Landscape and townscape	Encouraging the move to active travel and away from private vehicles will reduce congestion in the city centre. The reduced traffic will improve townscape and public realm. The policies are focussed on demand management for travelling by private vehicle through implementing parking restrictions. Landscape scored positively across 6 packages with the exception of packages 4, 5 and 6 where the impact was not clear or neutral.	The majority of the interventions in Package E reduce the ability for private vehicles to travel and park in the city centre, improving public realm and amenity for residents and visitors. The final package of interventions is expected to have a positive minor impact on landscape and townscape.

Next Steps and Monitoring Framework

The Environmental Report will be issued alongside the draft GTS Part 2 – Spatial Delivery Framework for public consultation for a period of 6-8 weeks. It should be noted that the GTS Part 1 – Policy Framework, has already been subject to public consultation alongside an interim SEA assessment, and has been adopted by the Council. All comments and representations will be considered before finalising the GTS Part 2 SDF and Environmental Report. Where elements of Part 2 change in response to consultation, the assessment will be reviewed and updated within the Environmental Report prior to the adoption of the final GTS Part 2 SDF.

Best practice in SEA Monitoring requires that a detailed monitoring framework reflects the implementation of the Strategy actions, identifies where existing indicators (from the delivery of related PPS) can be used to track progress and, ideally, is embedded within the final Strategy to ensure that monitoring is undertaken as part of GTS delivery.

A monitoring framework and associated targets/indicators will be presented in the Post Adoption statement, the final stage in the SEA process.



1. Introduction

1.1 Purpose of this Report

Strategic Environmental Assessment (SEA) provides plan-making authorities with a transparent process to incorporate environmental considerations into decision making at an early stage and in an integrated and documented manner.

The overall objective of SEA is to:

"Provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development" (Article 1 of the European SEA Directive 2001/42/EC).

This report presents the findings of the SEA of the Glasgow Transport Strategy. The assessment has been carried out in accordance with statutory SEA requirements and presents the anticipated impacts from the strategy on the SEA topics scoped into the assessment and relevant to the study area. In accordance with the statutory SEA requirements, a Non-Technical Summary (NTS) will accompany the report. The main objectives of this report are to fulfil the statutory SEA reporting requirements, identify anticipated significant environmental effects from the Transport Strategy and propose mitigation and enhancement measures which should be incorporated into both the Part 1 Policy Framework and Part 2 Strategic Delivery Framework.

1.2 How to Comment on this Report

This Environment Report and accompanying NTS are being issued for consultation. Subject to approval from GCC, the document will be available for consultation for a minimum period of six to eight weeks. Details of how to participate in the consultation and progress on the GTS will be posted on the GCC's dedicated Transport Strategy webpage at https://www.qlasgow.gov.uk/transportstrategy.

1.3 Structure of this Report

This report is structured as follows:

- This section introduces the report, identifies the statutory requirement for undertaking the SEA, explains the background to the development of the GTS and provides a summary of the strategy.
- Section 2 provides an overview of the SEA process which has been undertaken to date including which SEA topics have been scoped in and how the report responds to consultation comments.
- Section 3 provides a review of the relevant plans, programmes and strategies (PPS) and a summary of the
 baseline characteristics and the evolution of the baseline in the absence of the GTS. A detailed baseline is
 provided in Appendix A. A full list of relevant PPS, which identifies applicable legislative and policy
 requirement and targets at international, national, regional and local scale provided in Appendix B.
- Section 4 presents the approach to the SEA assessment, providing the assessment criteria, scoring system and approach to reasonable alternatives.
- Section 5 presents the SEA assessment findings for the three stages of the strategy development.
- Section 6 identifies embedded and future mitigation, as well as enhancement measures
- Section 7 presents the approach to cumulative assessment.
- Section 8 identifies the next steps in the SEA process and outlines potential monitoring arrangements.

The report is supported by the following appendices:

- Appendix A: GTS SEA Baseline
- Appendix B: Relationship with relevant Plans, Programmes and Strategies



- Appendix C: Consultation Responses
- Appendix D: Detailed Policy Framework Assessment
- Appendix E: Alternative Packages of Interventions

1.4 Statutory Requirements for the SEA

In Scotland, the 2005 Act transposes the EU Directive (2001/42/EC) into Scottish legislation, and Section 1 of the Act sets out the primary requirement, which is to secure the completion of an environmental assessment during the preparation of a qualifying plan or programme. The Act requires responsible authorities to assess the likely significant effects on the environment of implementing PPS, as defined within the 2005 Act. This assessment must also examine the likely significant effects of implementing reasonable alternatives to the PPS under consideration (i.e. the GTS).

The GTS is a qualifying plan under Section 5(3) of the 2005 Act, therefore a SEA is required.

Under the 2005 Act, once the need for a SEA of a PPS has been established, a three-stage process is required:

- SEA Scoping (Section 15): Responsible Authorities must provide the Consultation Authorities
 with sufficient information to enable them to consider the proposed scope, level of detail and consultation
 period for an ER to accompany the PPS;
- Preparation of an ER, and consultation on it (Section 14): Responsible authorities must prepare an ER to "identify, describe and evaluate the likely significant effects on the environment of implementing" a PPS. This report should be based on the outcomes of the SEA Scoping and the information requirements specified in Schedule 3 of the 2006 Act. The report must be consulted on in tandem with the PPS for a minimum period of six to eight weeks as agreed with the Consultation Authorities in the SEA Scoping Report. This report responds to these legislative requirements; and
- Preparation of a Post Adoption SEA Statement (Section 18): Following the adoption of a PPS, the Responsible Authority must prepare a statement setting out, amongst other matters, how environmental considerations and the SEA have been considered within the adopted PPS.

1.5 Background to the Glasgow Transport Strategy

Transport Scotland recommends local authorities prepare a new transport strategy every 3 years. The GTS succeeds Glasgow City Council's Local Transport Strategy (2007-09) (LTS). The current LTS and proposed GTS aim to provide an overarching framework for transport decision making and investment in the City. The GTS has more detailed plans sitting underneath the overarching Framework including a Liveable Neighbourhoods programme, a City Centre Transport Plan and an Active Travel Strategy. The details of these are described below:

- An ongoing Liveable Neighbourhoods programme this responds to the need to put people and place at the heart of how people experience the City, and focus on developing a series of Liveable Neighbourhood plans within an overarching policy framework;
- The adoptedCity Centre Transport Plan (2022) this aims to provide a coherent framework for all transport related policies and projects in the city centre, with a primary goal of putting people and place at the heart of the city and reducing the impact of vehicular traffic, and updates the existing City Centre Transport Strategy; and
- An adopted Active Travel Strategy (2022) this update the existing Strategic Plan for Cycling and cover walking, wheeling and cycling policies and projects in the city.

These plans, although they have their own set of objectives, share the same overarching outcomes and have been considered in the context of the proposed GTS and are therefore subject to the same SEA.



1.6 GTS Development Approach

The Glasgow Transport Strategy (GTS) sets out the City's objectives, policies, priorities and investment plan up to 2030. It follows from key work undertaken by the Glasgow Connectivity Commission and by Glasgow City Council (GCC) in developing the Case for Change that sets the framework for the GTS, and the extensive Public Conversation on Glasgow's Transport Future. The GTS sits within a framework of bold policy and strategy developments at national, regional and local level.

The GTS is being developed using a multi-criteria appraisal approach, in line with STAG. The 'Case for Change' constitutes the first stage of the STAG process and involved data analysis and stakeholder engagement to provide a baseline for the study area (the Glasgow City Council area) and to identify transport-related problems and opportunities, as well as any constraints that could exacerbate future transport issues and influence the development of solutions. This analysis enabled the development and refinement of a set of Transport Planning Objectives, which informed the development of options to both address the identified problems and enable the realisation of opportunities.

Consultation with stakeholders, community representatives and the public on draft outcomes, objectives and options was carried out as a "Public Conversation on Glasgow's transport future" in 2020, which included stakeholder & community representative workshops, an online survey and the use of an online transport simulator tool. Outcomes, objectives and options were revised following the consultation and subjected to an initial appraisal. This included an initial sift against their relevance to the study area and to the Transport Planning Objectives, to arrive at a set of options for further consideration, packaging and appraisal.

The <u>Case for Change</u> was undertaken by GCC and a draft report was published in September 2020 to present the evidence for issues that need to be tackled by the GTS. The publication of the Draft Case for Change was to support a major public engagement exercise on transport issues in the city - the Public Conversation on Glasgow's transport future. The report provides a comprehensive review of the problems and opportunities that the GTS requires to respond to, confirms the outcomes and objectives for potential interventions and provides a long list of potential options that have been taken forward for development and assessment in this project. Following the completion of the public engagement, the Case for Change report was updated with findings from that exercise and published as a Final Case for Change report.

The GTS has been published in two parts. Part 1 a Policy Framework, which sets out transport policies and related actions, to guide decision-making in the delivery of significant change in sustainable transport provision in the city. It was published Spring 2022, following public and stakeholder consultation on a draft Policy Framework in autumn 2021. Interim SEA and EqIA assessments were carried out of the Policy Framework and published alongside the Draft Policy Framework for consideration by the public and stakeholders. The Policy Framework is supported by Part 2, a Spatial Delivery Framework, which accompanies this Environmental Report for consultation. Both parts have been informed by this SEA.



2. SEA Process

2.1 Introduction

The SEA process has been aligned with the GTS development to ensure the SEA has had influence at each stage of the strategy development and, along with the Equality Impact Assessment process, has informed the refinement and revision of the proposed strategy.

Assessments were undertaken by SEA specialists at each stage of the GTS development. This includes examining the options available and making recommendations to strengthen the likely environmental gain or improve the sustainability benefits associated with the GTS.

Following each stage of the GTS development, any negative impacts or positive opportunities that were identified were discussed with the project team to determine effective mitigation and enhancement recommendation. The key recommendations from the SEA specialists have included refinements to the objectives, alternative interventions and package wording, caveats and monitoring controls based on the environmental criteria that consider and respond to both direct impacts and indirect, secondary and cumulative impacts. Key findings and recommendations are presented in Section 5.

2.2 Scoping of SEA Topics

The baseline and policy review were carried out to determine the SEA topics which should be scoped into the assessment and would be anticipated to have a positive and/or negative impact, as well as topics where a significant cumulative impact is anticipated. Schedule 3 of the 2005 act requires the GTS to be assessed against the following environmental issues:

- Air quality
- Climate
- Population and human health
- Material assets
- Water
- Biodiversity, flora and fauna
- Land and soil
- Cultural heritage
- Landscape and townscape

The <u>SEA Scoping Report</u> for the GTS was published in March 2021. It was determined that the GTS has the potential to significantly impact all of the environmental issues. Accordingly, all of the issues were scoped into the SEA and provide the framework for the SEA objectives and the criteria and questions which have been used in the assessment process (see Table 4.1: SEA objectives and the assessment criteriaTable 4.1).

Due to the absence of any European Designated Sites within the study area, it is not proposed to carry out a Habitat Regulations Appraisal. An HRA screening has previously been prepared by GCC in relation to the City Development Plan in 2014, and concluded an appropriate assessment was not required. Any schemes emerging with cross-boundary and regional characteristics would more appropriately be assessed at the regional level.



2.3 Response to Consultation Comments

Statutory requirements of the SEA include the requirement to provide consultation authorities with a detailed explanation of the plan in order to fully understand the likely environmental effects. In February 2021 the GTS SEA Scoping Report was sent for consultation to the Statutory Authorities (Nature Scot, Scottish environment Protection Agency (SEPA) and Historic Environment Scotland (HES)). A summary of the key comments from the statutory consultation authorities and the response from the SEA specialists is provided in Appendix C Consultation Responses.

In October 2021 the three statutory authorities (NatureScot, SEPA and HES) were consulted on the Glasgow City Council Glasgow Transport Strategy draft Policy Framework as well as the interim SEA appraisal summary. HES had no comments referring to the requirements of the Environmental Assessment Act 2005 or the SEA process but acknowledged that the full Environmental Report (ER) would be provided in future for consultation alongside the GTS Part 2: Spatial Delivery Framework.



3. Policy and Environmental Context

3.1 Introduction

This section summarises relevant baseline environmental characteristics, environmental issues and considers the evolution of the baseline in the absence of the GTS. It also notes the relationship between the GTS and other relevant PPS. This has served as an important base upon which to build the SEA Framework.

3.2 Relationship with other Plans, Programmes or Strategies

The GTS plays a pivotal role in linking national, regional and local policy through to guiding delivery plans and resourcing across Glasgow, this is illustrated in Figure 3.1.

National

- Government's purpose
- National Performance Framework
 - · Planning / Spatial / Land Use
 - Scottish Planning Policy
 - National Planning Framework
 - Transport
 - National Transport Strategy
- Strategic Transport Projects Review 2
 - Economic Development
 - Scotland Economic Strategy
- · Climate, Energy, Low Carbon, Clean Air
 - Scotland's Climate Change Plan
 - Scottish Energy Strategy
 - Cleaner Air for Scotland
 - Infrastructure Commission for Scotland reporting

Glasgow

- Community Plan and Action Plan 2018-20
 - City Council Strategic Plan 2022-2027
- City Council Equality Outcomes 2021-25
- City Development Plan 2017-27 and related frameworks
- Strategic and Local Development Frameworks
 - Economic Strategy 2016-23
 - Housing Strategy 2017-22
 - Open Space Strategy
- Energy and Carbon Master Plan, Climate Change
 - Implementation Plan, Climate Plan
- Glasgow Climate Adaptation Plan 2022-2030
 Glasgow Transport Strategy

Regional

- Glasgow City Region Economic Strategy 2017-35 and City Region Deal
- Regional Transport Strategy 2008-21 (updated Plan in progress at time of writing)
- Strategic Development Plan / Regional Spatial
 Strategy in progress
- Climate Ready Clyde Climate Adaption Strategy (in development)
 - Clyde and Loch Lomond Local Flood Risk Management Plan (2022)

Figure 3.1: Glasgow Transport Strategy position in relation to national, regional and city policies (Case for Change – Glasgow's Transport Strategy 2021-2031)¹

¹ Glasgow City Council (2021). Available from: https://www.glasgow.gov.uk/transportstrategy



A comprehensive policy review has been undertaken and is included in Appendix B to this report. An understanding of the relevance of other legislation, policy and plans to the GTS is an essential step in the SEA process.

A summary of the key environmental objectives identified through the review is presented in Table 3.1.

Table 3.1: Key Environmental Requirements/Objectives

SEA Topic	Key Environmental Requirements/Objectives
Air Quality	 The need to minimise harmful emissions (CO₂, NO_x and Particulate Matter) to the air Improve air quality particularly within two Air Quality Management Areas (AQMAs) within Glasgow Reducing traffic volumes into the city centre and imposing stricter conditions on vehicle movements through city centre, whilst minimising equality impacts Managing the 'last mile' of goods delivery Encouraging active travel and the switch to more sustainable, cleaner and low carbon transport Ensuring links between transport projects and policies on low carbon and air quality to maximise benefits.
Climactic Factors	 Support target for Glasgow to be net zero carbon by 2030 Contribution towards Glasgow's Glasgow's Climate Plan Support outcomes set out in Glasgow's climate adaptation plan Climate Ready Clyde Reducing the need to travel and reducing journey lengths Improving connectivity and accessibility of opportunity for disconnected communities Reducing use of fossil fuel based energy for transport Ensuring links between transport projects and policies on low carbon and air quality to maximise benefit
Population and Human Health	 Protect health and well-being of Glasgow's population Being proactive in ensuring transport's role reduces poverty and improves access to life opportunities and quality open space Facilitating and promoting active travel and providing a network that people feel safe to use Work towards eliminating serious or fatal accidents on our road network Embedding equalities and Fairer Duty Scotland into decision-making, and prioritising people over vehicles Acknowledge the uncertainties caused by the Covid-19 pandemic
Material Assets	 Continuing maintenance of our footways, paths and cycle infrastructure to ensure longevity and ease of use Careful choice of materials utilised in transport infrastructure to ensure robustness and longevity against wear and tear, minimising carbon emissions in construction Use of sustainable and / or recycled materials for infrastructure project Developing a suitable EV network for the city.
Water	 Ensuring the protection and improvement in quality of the city's watercourses; Ensuring adequate drainage is included in infrastructure schemes; Ensuring provision for flood management, sustainable drainage, access and biodiversity



SEA Topic	Key Environmental Requirements/Objectives
Biodiversity, Flora and Fauna	 Achieving the vison of a cleaner, greener, sustainable Glasgow which is protective of its natural environment and natural heritage.
	 Protect biodiversity by reducing the requirement for large-scale transport facilities.
Soil & Geology	 Managing the conservation of/improvement of soil quality in any place making / infrastructure schemes
	 Connecting communities through making use of vacant/derelict land
	 Including consideration to manage carbon storage and drainage (SUDS) to alleviate flooding
Cultural Heritage	Requirement to protect and enhance cultural heritage sites and their settings
	 Achieving a high quality sustainable built environment and maintaining the sense of character in any place making
	 Consideration of the visual intrusion of schemes, including choice of materials to be relevant for the location
	 Protect buildings from deterioration caused by air and noise pollution
Landscape (and Townscape)	 Preserving and enhancing any unique landscape characteristics. Ensuring new development is informed by landscape character assessment as different landscapes have different capacities to absorb new development

3.3 Environmental Baseline Evolution

A baseline information gathering exercise was carried out in order to summarise the key characteristics of Glasgow City Council, focusing on the SEA issues. Information on air quality, climatic factors, land, soil, water, landscape, biodiversity, material assets, population, human health and cultural heritage have been included in establishing the environmental baseline. The detailed baseline is presented in Appendix A SEA Baseline.

In the absence of the GTS it is possible that some existing environmental problems would persist or even worsen. in line with Schedule 3 of the 2005 Act, the environmental evolution without the PPS should be considered. Taking account of the environmental issues identified in Appendix A and in the GTS Case for Change Report (GCC, 2021) the evolution of the environmental baseline, particularly the environmental problems and trends identified, are presented in Table 3.2.

Table 3.2: Evolution of Environmental Baseline

SEA Topic	Baseline Evolution Without the GTS
Air Quality and Climatic Factors	If the GTS is not implemented, the decline of bus passengers is likely to continue with increased reliance of motorised forms of transport as the city grows. Glasgow already lags behind other large urban areas in Scotland in terms of the proportion of people who walk and cycle for journeys and without the GTS opportunities to encourage active travel is likely to be lost.
	Increased traffic will increase air pollution and worsen the AQMAs within the city. GCC could fail in meeting its obligations under the Climate Change (Scotland) Act 2009, while continued breaches of European air quality limits could see fines being imposed on the UK government, which could eventually filter down to the City Council itself.
	If the GTS is not implemented, it is likely that the transport networks and wider communities would be less resilient and less able to accommodate future climate impacts.



SEA Topic	Baseline Evolution Without the GTS
Population and Human Health	Glasgow's population is projected to grow by 2.9% from 2019 to 2028, with the largest component of this being net migration. Single person households will continue to grow in Glasgow, and the population is forecast to grow overall.
	If the GTS is not implanted the transport network across the city will not be able to accommodate this growth in population, this is likely to cause delays to commuters, congestion in streets and an overall poorer quality of life for the people of Glasgow.
	In Glasgow in 2018, some 73% of households had no private access to a bike according to the Scottish Household Survey. This is substantially higher than the Scotland average of 65% and higher than the comparable figure for large urban areas in Scotland. If the GTS is not implemented the shift towards active travel modes would not be encouraged which would provide the people of Glasgow with more opportunities for physical exercise and its associated health benefits.
Material Assets	If the GTS is not implemented, it is likely that a range of sustainable transport facilities (including walking and cycling routes, cycle parking, public transport hubs) would not be delivered. This in turn could continue the declining use of buses in the city. The high reliance on cars and demand for cars and could jeopardise Glasgow's vision of being carbon neutral by 2030.
Water	If the GTS is not implemented, it is likely that run-off from private vehicles into Glasgow's watercourses will increase. This poses a risk to the quality of Glasgow's water bodies and the species that live there. It also poses a risk to the health of Glasgow's population.
	The GTS also presents an opportunity to consider how it can make a positive contribution to wider community adaptation / resilience with regard to flood risk.
Biodiversity, Flora and Fauna	If the GTS is not implemented and demand for motorised travel increases, there will likely be demand for new and significant transport infrastructure. Construction of such infrastructure could put pressure on biodiversity, including the loss and fragmentation of habitats, while increases in traffic, vehicle emissions and noise could disturb sensitive species.
Soil	If the GTS is not implemented and demand for motorised transport increases, it may be necessary to construct further large-scale transport facilities, such as new roads and bridges, to cope with demand. Construction and use of such facilities could lead to land contamination, soil erosion and soil sealing. Avoidance of constructing on brownfield sites, given there may be likely soil contamination, creates disconnect in the transport network.
Cultural Heritage	If the GTS is not implemented, improvements to public realm as part of transport projects would not go ahead while traffic congestion would worsen the setting of historic assets around the city centre.
Landscape (and Townscape)	If the GTS is not implemented, the proposed improvements to public realm as part of transport projects would not go ahead. The landscape of the city would be expected to worsen as private vehicle use increases causing congestion on the streets and leads to parking provision demand outweighing supply. The townscape would be negatively impacted, with the city becoming a less attractive place for residents and visitor.



4. SEA Assessment Approach

4.1 Introduction

The 2005 Act requires the Environmental Report to present the assessment and evaluation of the likely significant effects that GTS will have on the environment. It is important to recognise that the SEA focuses on strategic level issues and does not consider detailed measures for specific developments and construction projects within the study area. Such effects would be the focus of a project level Environmental Impact Assessment (EIA), where appropriate. Strategic mitigation has been identified throughout the assessment and this will form the basis of future, project level assessments that focus on interventions identified in the GTS.

4.2 SEA Objectives and Assessment Criteria

The SEA assessments used a set of SEA objectives and assessment questions identified in Table 4.1, that cover each of the environmental topics scoped into the assessment. The SEA objectives and assessment criteria presented have been developed from a comprehensive review of the baseline issues and policy requirements and were refined following comments received at the Scoping Stage and the Interim SEA report of the Policy following the Interim SEA Assessment of the draft Policy Framework.

Table 4.1: SEA objectives and the assessment criteria

GTA SEA Objectives	Assessment Guide Questions How will the policy
1. Air Quality: Reduce emissions from all forms of transport related air pollution and improve the air quality for all across Glasgow	 Reduce the emissions and pollution associated with the most polluting vehicles i.e. private vehicles? Contribute towards a reduction in NOx and PM levels, particularly within the city's AQMAs? Assist in meeting AQMA targets and support LEZ objectives? Help to limit polluting traffic growth? Help to reduce traffic congestion? Encourage and facilitate the use of active travel, particularly for short journeys?
2a. Climatic Factors: Reduce the need to travel and encourage modal shift from private vehicles to sustainable public transport to address Glasgow's climate emergency and meet wider greenhouse gas emission targets.	 Encourage modal shift from private vehicles to more sustainable transport options? Support reduction in GHG emissions? Facilitate ongoing co-ordination with spatial development planners to ensure communities are close to key services and places of employment, to the maximum extent possible?
2b. Climatic Factors: Adapt transport system so there is less reliance on fossil fuels and it is more resilient to the predicted effects of climate change.	 Reduce the use of non-renewable resources and fossil fuels? Promote and support the best use of clean fuels/technologies? Help adapt the transport network and support the wider community to respond to direct and indirect risks associated with climate change projections for Scotland?



GTA SEA Objectives	Assessment Guide Questions How will the policy
3. Population and Human Health: Improve quality of life and human health and increase sustainable access to essential services, employment and the natural environment 4. Material Assets: Improve	 Reduce exposure to air pollution by most vulnerable groups? Ensure safe and sustainable access for all users to essential services and employment? Reduce and avoid community severance or other detriment to existing active travel routes, including maintaining or improving pedestrian crossings? Increase and enhance provision of non-motorised transport, especially walking and cycling links and facilities? Improve accessibility to open spaces and the path network for physical recreational purposes? Reduce the use of natural resources e.g. fossil fuels?
and enhance Glasgow's existing transport infrastructure.	 Reduce the impact of heavy traffic on infrastructure? Support or lead more sustainable maintenance activity where new development is required? Support improvements to transport technology, interchanges and timetabling? Plan for future travel arrangements where journeys are made by a number of different modes? – e.g. electric vehicle for most of the journey, which is then parked and left to charge at a hub, cycle and walking assets, such as connected off-road paths, bike/e-bike share infrastructure.
5. Water: Prevent the deterioration and where possible, enhance the status of Glasgow's watercourses and reduce/manage flood risk in a sustainable way.	 Protect and where possible improve water quality within GTS region? Contribute to reducing emissions and particulates of key pollutants to water from road transport? Support network resilience and wider communities to anticipated extreme weather events and climate change? Promote the reduction of flood risk? Reduce the financial and carbon costs of wastewater pumping and treatment?
6. Biodiversity, Flora & Fauna : Ensure the city's biodiversity, natural habitat networks and green infrastructure including green and blue networks are protected.	 Protect and or enhance the national and local integrity of designated biodiversity sites and wildlife sites? Protect and or enhance the integrity of existing habitat and green/blue networks and other wildlife corridors? Protect protected species? Provide opportunities for habitat enhancement, habitat creation or biodiversity net gain?
7. Soil & Geology : Prevent soil degradation and improve soil quality where possible while safeguarding valuable land resources.	 Prevent soil degradation? Seek to improve and utilise brownfield sites and reduce impact on greenspace? Reduce the impact on soil quality from pollutants from transport? Reduce loss of soil from extreme events and flooding?
8. Cultural heritage : Protect and enhance (where appropriate) Glasgow's cultural and historic environment.	 Impact on designated and non-designated historic sites, places and spaces? Improve accessibility to all townscape including historic sites, places and spaces? Improve access to and understanding of the historic environment? respect/respond to the historic urban spatial structure / plan of the city?



GTA SEA Objectives	Assessment Guide Questions How will the policy	
9. Landscape (and townscape): protect and enhance the landscape and townscape character and setting of the city	 Create and maintain an attractive public realm? Respect existing urban landscape, settlement pattern and sensitive views? Protect and enhance the character, integrity and liveability of key streetscapes, including removing barriers to use? Improve sustainable access to open space and the countryside? 	

4.3 SEA Scoring System

The SEA assessment has followed a matrix-based approach, using the STAG scoring matrix to identify likely significant effects on SEA objectives. The scoring system used for the assessment of effects is described in Table 4.2. This approach has several advantages including the systematic recording of potential effects and their significance together with any assumptions, uncertainties and suggested mitigation or enhancement measures.

Table 4.2: SEA Scoring System for Likely Significant Effects

Symbol	Score	Descriptions
+++	Major benefit	The option is anticipated to have a major benefit or positive impact (significant). These are benefits or positive impacts which, depending on the scale of benefit or severity of impact, the practitioner feels should be a principal consideration when assessing an option's eligibility for funding
++	Moderate benefit	The option is anticipated to have a moderate benefit or positive impact (significant). Moderate benefits and impacts are those which taken in isolation may not determine an option's eligibility for funding, but taken together do so
+	Minor benefit	The option is anticipated to have only a minor benefit or positive impact (not significant). Small benefits or impacts are those which are worth noting, but the practitioner believes are not likely to contribute materially to determining whether an option is funded or otherwise.
0	No benefit or impact/Neutral	The option is related to but does not have any benefit or impact on the SEA objective.
-	Small negative impact	The option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for funding, but taken together could do so.
	Moderate negative impact	The option is anticipated to have only a moderate cost or negative impact. Moderate costs/negative impacts are those which taken in isolation may not determine an option's eligibility for funding, but taken together could do so
	Major negative impacts	The option is anticipated to have a major disbenefit or negative impact (significant). These are costs or negative impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option's eligibility for funding.
?	Uncertain Impact	The option has an uncertain relationship with the SEA objective or the relationship is dependent on the way in which the aspect is managed. In addition, insufficient information may be available to enable an assessment to be made.
~	No or negligible relationship	There is no clear relationship between the option and the achievement of the SEA objective or the relationship is negligible.



4.4 GTS elements subject to SEA

In line with the Scottish Governments *Strategic Environmental Assessment Guidance 2013* the assessment has been focused on the key elements within the GTS which are likely to have significant environmental effect to ensure a proportionate approach to assessment.

The GTS is being published in two parts. Part 1 is a Policy Framework, which sets out transport policies and related actions, to guide decision-making in the delivery of significant change in sustainable transport provision in the city. It is supported by Part 2, a Spatial Delivery Framework, which accompanies this Environmental Report for consultation. An Integrated Transport Assessment was undertaken to develop and assess interventions to inform both the development of the Part 1 policy framework and the Part 2 Spatial Delivery Framework of which the SEA undertook the Environmental criteria of this assessment.

Table 4.3: GTS elements subject to SEA Assessment

Stage	Element of GTS	Subject to SEA Assessment/Review	Comment
1	GTS Policy Framework Objectives	Yes	The GTS Objectives (presented in the Final Policy Framework (2022)) were assessed to ensure it supported a positive environmental outcome. Assessment provided in Section 5.1.
2	Part 1 Policy Framework	Yes	A review of the policy framework which went for public and stakeholder consultation in autumn 2021 is provided in Section 0.
3	Packages of Interventions from the Integrated Transport Assessment	Yes	The SEA undertook the environmental assessment of the wider integrated transport assessment, this included an assessment of the alternative packages and the preferred package, Assessment provided in Section 5.3.

The overall approach to the SEA has been refined to take account of Scoping consultation responses (see section 2.3).

4.5 SEA Assessment Stages

The Strategic Environmental Assessment (SEA) has been aligned with the GTS development to ensure the SEA has had influence at each stage of the strategy development and, along with the Equality Impact Assessment (EQIA) will be used to inform and refine the finalised Strategy. Figure 4.1 sets out the SEA approach alongside the stages of development of the GTS.

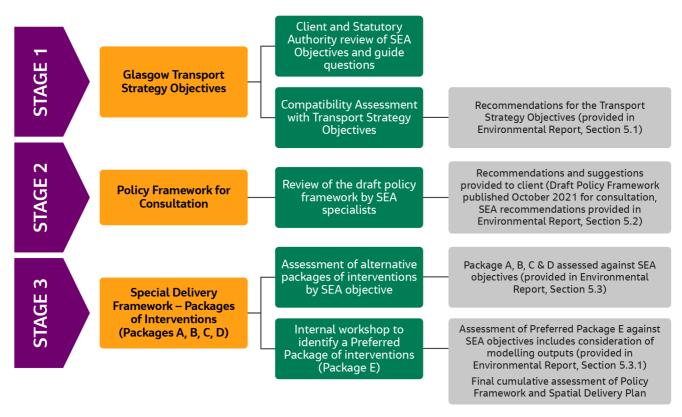


Figure 4.1: SEA approach alongside the GTS development

Focussed assessments have been undertaken by SEA specialists and the GTS development team, who worked together to understand both the intention and ambition of the draft policies and interventions. This includes examining the options available and making recommendations to strengthen the likely environmental gain or improve the sustainability benefits associated with the intervention.

4.6 Approach to Reasonable Alternatives

Article 14(2) of the 2005 Act requires that:

"The report shall identify, describe and evaluate the likely significant effects on the environment of implementing (a) the plan or programme; and (b) reasonable alternatives to the plan or programme, taking into account the objectives and the geographical scope of the Plan or Programme".

The evolution of the baseline scenario was not considered to constitute a reasonable alternative and instead consideration was given at each stage of the GTS development to identify and assess any reasonable alternatives to the key components of the draft GTS. As shown in Figure 4.1 the SEA considered alternatives and made recommendations at the key GTS stages - objective setting, developing packages of interventions and individual interventions. SEA recommendations and the findings of the assessment directly fed into the development of the final list of interventions presented in the draft GTS.



5. Assessment Findings

This section outlines the findings of the Stage 1, 2 and 3 of the SEA process.

5.1 Stage 1 - Glasgow Transport Strategy Objectives

For Stage 1 a compatibility assessment was undertaken to consider the likely significant environmental effects arising from the proposed GTS Transport Strategy Objectives presented in the <u>Final Policy Framework (2022)</u>.

A high-level compatibility assessment was used to determine if the GTS objectives were compatible with the SEA objectives and assessment criteria (see Table 4.1), the compatibility assessment is presented in Table 5.1. The key used for the compatibility assessment is provided below:

Compatibility	Symbol
Compatible	+
Not compatible	-
No or negligible relationship	0
Uncertainty over compatibility	?

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Table 5.1: Compatibility Assessment of the GTS Transport Objectives against the SEA Objectives

GTS Objectives	SEA OI	ojectives				Summary				
	Air Quality	Climate	Population and Human Health	Material Assets	Water	Biodiversity	Soil	Cultural Heritage	Landscape (and Townscape)	
1. To encourage low carbon movement of people and goods in a resilient transport system that can adapt sustainably in the future	+	+	0	0	0	0	0	0	0	The GTS objective is compatible with the air quality and climate objectives. There is no direct relationship identified with the other SEA objectives. However, the GTS objective could indirectly contribute to the other seven objectives. Recommend using the word 'promote' instead of encourage.
2. To promote clean air through sustainable transport investment and decision-making	+	+	+	+	0	0	0	0	0	The GTS objective is compatible with the air quality, climate, population and human health and material assets objectives. There is no direct relationship identified with the other SEA objectives. However, the GTS objective could indirectly contribute to the other five objectives. Recommend using the word 'achieve' instead of
3. To encourage and enable physical activity and health improvement through travel	0	0	+	0	0	0	0	0	0	The GTS objective is compatible with the population and human health objectives. There is no direct relationship identified with the other SEA objectives. Recommend mentioning 'active travel' and expanding health to include 'wellbeing'.
4. To promote an affordable and inclusive sustainable travel system, particularly to support economic success	+	+	+	0	0	0	0	0	0	The GTS objective is compatible with the air quality, climate and population and human health objectives. There is no direct relationship identified with the other SEA objectives. Recommend the term 'growth' over 'success'.



GTS Objectives	SEA O	bjectives	5							Summary
	Air Quality	Climate	Population and Human Health	Material Assets	Water	Biodiversity	Soil	Cultural Heritage	Landscape (and Townscape)	
5. To improve reliability, integration and convenience of sustainable travel modes	+	+	+	+	0	0	0	0	0	The GTS objective is compatible with the air quality, climate, population and human health and material assets objectives. There is no direct relationship identified with the other SEA objectives. Recommend a different term to 'convenience' is used.
6. To ensure the transport system is accessible by all including those with additional support needs	0	0	+	0	0	0	0	0	0	The GTS objective is compatible with the population and human health objectives. There is no direct relationship identified with the other SEA objectives. No recommendation provided.
7. To improve the safety and personal security of all transport users (and the quality of public spaces that they use)	0	0	+	0	0	0	0	0	ş	The GTS objective is compatible with the population and human health objectives. There is no direct relationship identified with the other SEA objectives. Recommend saying 'safety and personal security of all transport users and public spaces that they use'
8. To deliver spaces for people first and foremost, with high quality public spaces and an effective sustainable travel hierarchy	0	0	+	?	0	0	0	+	+	The GTS objective is compatible with the population and human health, cultural heritage and landscape (and townscape) objectives. There is no direct relationship identified with the other SEA objectives. Recommend integrating the historic and natural environment into this objective.



In addition to assessing compatibility of each objective against the SEA Objectives the SEA specialists also provided recommendations for each of the GTS objectives. The changes to the GTS objectives were not considered to be significantly different (mostly wording changes) and therefore did not require a re-assessment. The final GTS objectives were:

- 1) To promote low carbon movement of people and goods in a resilient transport system that can adapt sustainably in the future
- 2) To achieve clean air through sustainable transport investment and decision-making
- 3) To encourage and enable physical activity and improved health & wellbeing through active travel
- 4) To promote an affordable, inclusive and equitable sustainable travel system
- 5) To improve reliability, integration and convenience of sustainable travel modes for people and goods
- 6) To ensure the transport system is accessible by all
- 7) To improve the safety and personal security of all transport users and the public spaces that they use
- 8) To deliver spaces for people first and foremost, with high quality public spaces which respect and respond to the natural and built environment, and an effective sustainable travel hierarchy

5.2 Stage 2 Review of Draft Policy Framework

The GTS Policy Framework set out policies and actions and follows on from the GTS Case for Change report (2021). It will be further supported by a Spatial Delivery Framework in 2022. The Draft GTS Policy Framework as consulted upon in late 2021 set out a series of transport policies and related actions under 9 parts (packages). This was then subject to an interim strategic environmental assessment, to ensure the Policy Framework responded to issues raised during that assessment.

The interim assessment was undertaken at a package level and a score assigned to each SEA objective as per the scoring criteria in Table 4.2. Details of the interim assessment are presented in Appendix D with a summary of the package assessment is presented in Table 5.2. Following these interim SEA recommendations, the Draft Policy Framework was published in October 2021 for 7 weeks of public and stakeholder consultation. The Final Policy Framework (2022) was published on in February 2022, and adopted by the Council in March 2022. A full consultation report on the Draft Policy Framework is available at www.glasgow.gov.uk/transportstrategy.

Table 5.2: Assessment of the Policy Framework – Findings and Recommendations

Package	Summary	Recommendations
1. Reducing the need to travel unsustainably	This package would have a positive effect on several of the SEA objectives, primarily in relation to creation of 20 min neighbourhoods and the encouraging of hybrid models of working. Positive effects are anticipated on climate change and air quality objectives with a reduction in unsustainable travel for short journeys. Population and Human Health will also be positively impacted by policies that reduce the amount of travelling that needs to be undertaken by individuals, improved active travel opportunities/facilities and as a result improved quality of life.	It is not clear if development management decision making will include consideration of safeguarding valuable land and resources. Recommend that policy 1.2 takes into consideration sustainable maintenance activity where new development is required.



Package	Summary	Recommendations
2. Decarbonising transport and achieving cleaner air	This package would have a positive effect on all the SEA objectives, illustrating the interlinkages between decarbonisation and the built and natural environment. A significant positive effect is expected on Air Quality, Climate And Population and Human Health. Reference is made to the sustainable travel hierarchy and a mode shift towards sustainable transport / low emission vehicles to realise air quality and climate change improvement targets. The policies recognise the links between poor air quality and health, as well as the inequalities around access to sustainable transport, and aim to address these issues. Reference is also made to key policies this package would support - Circular Economy, Air Quality Action Plan, Glasgow Climate Plan.	Recommend that the link is made between policies and their impact on AQMA's local air pollutants. Recommend explicit link is made between nature and clean air (e.g. planting / retaining trees) and how decarbonisation strategy could link into biodiversity/tree policies and programmes.
3. Inclusive and safe places for people and supporting sustainable travel choices	This package will have a positive effect across several of the SEA objectives with significant positive effects anticipated on Population and Human Health due to the focus on fair and safe access to services for all in the city including, women, people with disabilities, people from ethnic minorities and the LGBT+ community. The reduction in the reliance on private vehicles and anticipated modal shift due to improved access for all is anticipated to have positive effects on Air Quality, Climatic Factors, Cultural Heritage and Landscape. The development of mobility hubs helps support the development of future travel arrangements where journeys are made by different modes resulting in positive effects on Material Assets. Reference is made to linked policies, GCC's Circular Economy Route Map, Climate Change Strategy, Poverty Action Plan, Glasgow Road Safety Plan	Further assessment will be required to ensure any new facilities to support walking/cycling and wheeling and mobility hubs are sensitively designed and do not detract from the public realm and do not negatively impact on cultural heritage assets.
4. Collective transport – public, community, shared and demand responsive transport	This package would have positive effects on Air Quality, Climate and Population and Human Health objectives through anticipated modal shift, reduction in emissions and in proved public realm. Encouraging the move to active travel and away from private vehicles will reduce congestion in the city centre. The reduced traffic will improve townscape and public realm which could benefit the setting of cultural heritage assets. There is potential for negative effects on Biodiversity, Soil, Material Assets, Water, Landscape and Cultural Heritage with any new infrastructure including metro, new park and ride facilities and the HS2 terminus. However as the scale and location of the infrastructure is unknown at this stage it is considered that there will be an uncertain effect on these objectives. Reference is made to linked policies, Glasgow Climate Change Plan, Active Travel Strategy, Open Space Strategy	Further environmental assessment will be required as infrastructure projects are developed. Brownfield land for new infrastructure should be prioritised where possible. Further assessment will be required to consider the carbon footprint of the construction of new infrastructure e.g. Glasgow Metro, HS2 terminus Reference could be made to encourage clean fuels and technologies in taxi's and private car hires.



Package	Summary	Recommendations
5. Managing and developing assets and infrastructure	This package would have a significant positive impact on several of the SEA objectives, primarily in relation to reducing use of materials through effective management of existing assets and future proofing new infrastructure. Population and Human Health would also be positively impacted by the policies through accessibility improvements and ensuring accessibility to transport and opportunities during the winter months. The policies generally support a mode shift towards sustainable transport which would have associated benefits for Air Quality and Climate. The Water objective would be positively impacted by the policies related to flood risk adaption and mitigation Improving the existing road network is likely to have an indirect positive impact on the water environment as a result of associated drainage improvements/upgrades. Policy refers directly to building climate resilience of road infrastructure with particular focus on reducing flood risk and increasing drainage capacity. This package indirectly supports the SEA objectives in relation to Soil, Cultural Heritage and Landscape but is not expected to have a significant impact on these. Reference is made to linked policies, GCC's Circular Economy Route Map and Open Space Strategy.	To link to the Biodiversity objective this package could make a connection between policy and providing biodiversity improvements where possible as part of infrastructure upgrades, e.g. through planting (refer to LBAP / Glasgow Pollinator Plan) Policy should ideally specifically refer to green infrastructure and nature-based solutions Policy could make specific reference to its role in promoting sustainable management of surface water and highlight the importance of delivering infrastructure to support outcomes of the Clyde and Loch Lomond Flood Risk Management Plan Link to Landscape and Soil SEA objectives could be strengthened through reference to utilising vacant/derelict land where possible to unlock sustainable development and improve soil quality. Link to Cultural Heritage could be strengthened through reference to enhancing connections between Glasgow's existing transport infrastructure and the history associated with it.
6. Smart and Digital City	This package would have a minor positive impact on several of the SEA objectives, primarily in relation to Air Quality, Climate, Population and Human Health, and Materials. The policies generally support integrated / connected travel and prioritisation of sustainable modes through use of technology, which would facilitate a mode shift and result in emissions reductions and air quality improvements. Integrated travel is expected to improve access to essential services, employment, and the natural environment for people living in the city. Additionally, the policies seek to utilise existing technology to improve travel experience and planning for travel across several mode types. This package indirectly supports the SEA objectives in relation to Biodiversity, Soil, Cultural Heritage and Landscape but is not expected to have a significant impact on these. Reference is made to linked policies: Open Government Partnership, Glasgow Economic Recovery Group Action Plan 2020, Connectivity Commission Recommendation.	Consideration should be given to whether technology could show real time pollution hotspots? Consideration should be given to whether technology could show the approximate carbon emissions for a given trip, comparing each transport mode? Additional measure recommended around reducing inequality in access to technology and providing support to 'hard to reach' people to ensure no one is left behind. Consider how technology could be used to link more closely with other SEA objectives, e.g. in relation to Water and Biodiversity. Could be opportunities to use technology to improve flood response and raise awareness of blue/green networks in the city. Could technology be used to provide brief historical background to key historic transport assets, as the traveller passes by them



Package	Summary	Recommendations
7. Managing Travel Demand	This package would have a significant positive impact on the Air Quality, Climate and Population and Human Health objectives. The policies are focussed on demand management for travelling by private vehicle through implementing parking restrictions. Reducing road traffic in the city would have a significant positive impact on air quality and emissions and would bring associated health and wellbeing benefits. The townscape and setting of the city would be improved by the removal of traffic, contributing towards public realm improvements. This package indirectly supports the SEA objectives in relation to Water, Soils and Cultural Heritage but is not expected to have a significant impact on these. Reference is made to linked policies: Glasgow Climate Plan, Connectivity Commission.	No specific recommendations identified
8. Natural Environment	This package would have a significant positive impact on the Climate, Population and Human Health, Water and Biodiversity SEA objectives, illustrating the interlinkages between the natural environment and the built/human environment. The policies are focussed on enhancing access to green space, improving blue/green network connectivity, increasing tree cover and creating habitats, protecting wildlife, and promoting sustainable travel. Improving biodiversity and reducing road traffic in the city would have a positive impact on air quality and emissions and would bring associated health and wellbeing benefits. The townscape and setting of the city would also be improved by the removal of traffic, contributing towards public realm improvements and also providing wellbeing benefits. The policies are expected to have a positive impact on the water environment as it sets out the importance of the blue infrastructure in the travel network and as part of a high-quality public realm. The policies explicitly refer to designing infrastructure taking climate resilience into account, particularly in relation to flood risk management. Water quality would also be improved by the requirement to manage run-off from roads through SuDS and other appropriate drainage. Reference is made to linked policies: Glasgow Climate Plan, Glasgow's LBAP, Liveable Neighbourhood Plans, Active Travel Strategy and City Centre Transformation Plan.	Recommend policy considers ecosystem services (NatureScot's Scottish Biodiversity Strategy clearly identifies that biodiversity conservation calls for an ecosystem approach) Recommend that wording included around prevention of soil degradation and improving soil quality where possible to strengthen contribution towards Soils objective. Recommend that wording included around the importance of green / blue space as a cultural resource within the city strengthen contribution towards Cultural Heritage objective.



Package	Summary	Recommendations
9. Access to vital services and opportunities and supporting economic success	This package would have a positive effect on most of the SEA objectives, primarily Air Quality, Climate, Population and Human Health, Materials, Soil, Cultural Heritage and Landscape. The policies are focussed on accessing services and socio-economic development in the city. Facilitating mode shift towards sustainable travel and ensuring equal access to transport and the opportunities that this provides are key elements of the policies. Children in particular are recognised as requiring access to affordable transport to allow access to education and recreational activities. Affordable public transport is identified as an important mechanism in ensuring equality in access to healthcare and food, as well as employment and training for adults. The policies would have a positive impact on Materials through supporting active and sustainable travel and facilitation of last-mile delivery solutions which would reduce the impact of heavy traffic on infrastructure. The policies would have a positive impact on Cultural Heritage through facilitating effective transport for Glasgow as a tourist destination, and on Landscape through removing traffic and improving public realm/access to open space and countryside. These would contribute towards improved health and wellbeing in the population. This package indirectly supports the SEA objectives in relation to Water and Soil. Reference is made to linked GCC policies: Glasgow Community Food Strategy and Food Growing Strategy, Circular Economy Routemap, Glasgow Climate Plan.	To make a clear connection with Biodiversity, the policies could link employment/training opportunities/volunteering to community initiatives in the city that support biodiversity. Refer to LBAP - Community Action for Biodiversity. To make a clear connection between accessibility to transport and access to the historic environment, there could be an additional policy around improving access to cultural heritage assets. This would recognise the importance of this for children/people in deprived areas and inequalities around access to cultural heritage (e.g. providing free / affordable transport to historic sites / buildings).

5.3 Stage 3 SEA Assessment of Alternative Packages of Interventions from the Integrated Transport Assessment work

As part of the development of the GTS, an underlying transport appraisal was carried out. This was named the Integrated Transport Assessment (ITA). That appraisal has informed both the GTS Part 1 Policy Framework and the GTS Part 2 Spatial Delivery Framework. The ITA developed a set of alternative packages to achieve the Transport Strategy Objectives presented in section 5.1.

Intervention options were developed to respond to the four key drivers: Carbon Neutral by 2030, Eliminate poverty and social inequality, Health and Wellbeing, Inclusive Economic Growth. Potential options have been gathered from a range of sources. These include existing GCC policy documents, interventions that apply to Glasgow which are referenced in the Regional Transport Strategy and the Second Strategic Transport Projects Review (STPR2) and from the project team's knowledge of the city and the problems to be addressed. These potential options were further developed by the project team and through structured interviews with stakeholders.



Options were then grouped together into four alternative packages for appraisal. This packaging has been undertaken on the following basis:

- Each of the four desired GTS outcomes has different actions that can be taken to achieve it (reducing the need to travel, encouraging modal transfer, improving accessibility, etc)
- Each of these actions then in turn has different intervention option categories that can deliver it (demand management, improved public transport service provision, new services, etc)
- Each package contains complementary options from different categories that link back to each outcome, to demonstrate that each package represents a true alternative means of achieving the intended outcomes
- Each action or set of options is also linked to the nine groups in the Policy Framework

This process has defined four initial packages for appraisal, all of which contain options from different categories and all of which contain options that can address the 'action types' linked to the desired outcomes.

The packages are:

- a) Cost driven incentives, comprising cost- and regulatory- based carrot and stick measures to influence the changes to travel behaviour need to meet the objectives
- More efficient use of the current network, comprising measures which reallocate the use of roadspace to active travel and public transport, make better use of existing public transport and water-based transport assets
- c) Improved local connectivity, focussing measures on providing improved connections between local centres and neighbourhoods, through space reallocation and targeted network improvements
- d) Enhanced radial capacity, focussing measures on established radial corridors to improve walking, cycling and public transport access and levels of service on these corridors.

This section presents the findings of the SEA assessment of the alternative ITA packages of interventions A, B, C and D, identified as part of the Appraisal Framework, against the SEA Objectives. A full list of the interventions and corresponding reference codes for each of the alternative packages in presented in **Appendix E of this report.**

Table 5.3 summarises the interventions within each package that perform well against the SEA objectives and also highlights those which perform poorly. An overall score has been assigned to each package in line with the SEA scoring matrix.

Table 5.3: Summary of the Packages against the SEA Objectives

Package	Summary against SEA Objectives	Impact
Package A: Cost Driven Incentives	This package scores a minor positive impact across 4 of the SEA objectives: air quality, climate, population and human health and landscape (and townscape). Several interventions within the package score a moderate positive impact on the following SEA objectives: PT3 – Population and human health; DM2 – Air quality; DM4 – Air quality; and DEV6A – Population and human health and landscape (and townscape). Two interventions score a minor negative impact for population and human health, these are DM2 and DM4. The impacts on the water, biodiversity, soil and cultural heritage SEA objectives are assessed to be negligible at this strategic level across Package A.	Overall Package A is expected to have a minor positive but not significant effect on the SEA objectives.

Package	Summary against SEA Objectives	Impact
Package B: More Efficient Use of Network	This package scores a minor positive impact across 5 of the SEA objectives: air quality, climate, population and human health, material assets and landscape (and townscape). Two interventions score moderate positive impacts on material assets, these are PT7 and DEV5B. No other moderate impacts are identified. Interventions within Package B that performed poorly against the SEA objectives are: TECH1 which scored a minor negative impact on air quality, climate, material assets and landscape; WAT 1 and WAT 2 had a minor negative impact on water and biodiversity; and DEV4A scored a minor negative impact on climate. The impacts on the water, biodiversity, soil and cultural heritage SEA objectives are assessed to be negligible at this strategic level across Package B.	Overall Package B is expected to have a minor positive but not significant effect on the SEA objectives.
Package C: Improved Local Connectivity	This package scores a minor positive across 4 of the SEA objectives: air quality, climate, population and human health and material assets. Three interventions score moderate positive impacts on material assets, PT6, SM1 and WAT3. While DEV6B has a moderate positive impact on air quality and population and human health. GOV1 also has a moderate positive impact on air quality. Interventions within Package C that performed poorly against the SEA objectives are: ROAD2 which scored a minor negative impact on air quality, population and human health and landscape; WAT3 scored a minor negative impact on water and biodiversity; and PT6 scored a minor negative impact on soil, cultural heritage and landscape. The impact on the water, biodiversity, soil, cultural heritage and landscape (and townscape) SEA objectives are assessed to be negligible across Package C.	Overall Package C is expected to have a minor positive but not significant effect on the SEA objectives.
Package D: Enhanced Radial Capacity	This package scores minor positive across 3 of the SEA objectives: air quality, population and human health and material assets. Three interventions score a moderate positive for material assets, these are PT8, PT9 and PT10. PT8 also scores a moderate positive impact on air quality. No interventions scored a negative impact against any of the SEA objectives. The impact on the climate, water, biodiversity, soil, cultural heritage and landscape (and townscape) SEA objectives are assessed to be negligible across Package D.	Overall Package D is expected to have a minor positive but not significant effect on the SEA objectives.

Table 5.3 shows that Packages A, B C and D scored a minor positive impact overall across the SEA objectives.

The ITA report recommended a package of the best performing measures identified as Package E. This package has been considered against the SEA objectives and is presented in section 5.3.1 below.



5.3.1 Cumulative Findings of Package E

Package E is comprised of the following interventions

Objective	Best Performing Interventions	Supporting Interventions
Public Transport	 PT1B: Bus services and quality improvements – new services where none exist and evidence of demand PT1C: Bus services and quality improvements – More frequent services and adjusted timings PT3: Bus Fares PT8: Metro Scheme GOV1: Single body overseeing transport (& possibly region) (link to SOFT1) GOV3: Franchise system for buses 	 PT1A: Bus service and quality improvements – improved quality, security, accessibility of shelters, information. PT5: Integrated ticketing PT6: New rail stations PT7: Subway modernisation and increased operating hours PT10: Park and Ride – City outskirts PT15: Bus infrastructure improvements PT16: FastLink Phase 2 PT17: Level of Service ROAD5: Road Improvements to enable new bus interchange (M8 Junction 15) GOV2: Public ownership of buses (linked to PT3, to be explored as longer term alternative to GOV3) GOV4: Bus Service Improvement Partnership (linked to PT15, to be explored as shorter term alternative or precursor to GOV2 or GOV3)
Active Travel	 CYC2A: Cycle network – full network (reallocation of roadspace) DM5: Road safety targets & updated road safety plan WALK1: Improved walking experience in all key routes DEV6B: Full Liveable Neighbourhoods package. Facilitating more active travel within & between neighbourhoods 	 CYC1: Free or subsidised bikes to lower income groups DM3: Road safety: Speed related interventions WALK3: Promote walking/better information
New Mobility	 SM1: Mobility Hubs CYC6: Expansion of NextBike STREET4: Streetspace Priority Framework 	 CST1: Enhanced Community Transport PT2: Demand responsive transport SOFT2: Mobility as a Service SM2: E Scooters in Glasgow TECH2: Development/Promotion of Connected & Autonomous Vehicles
Water Based Movement	N.A.	 WAT1: River based movement (Clydebank to Glasgow Green)



Objective	Best Performing Interventions	Supporting Interventions
Demand Management	 DM2: Workplace Parking Levy SOFT2: Rebranding of Sustainable Transport System DEV5C: Traffic restrictions begin at 'inner orbital'. The Streetspace Allocation Framework (SAF) that will support the GTS recognises the need for reduced traffic volumes on the inner radial corridors approaching the city centre, where space is at a premium. This could be achieved through gateway treatments at upstream junctions, providing reduced capacity for through movements as they approach the areas where restrictions are most needed. 	 AIR3: LEZ Phase 2 DEV5A: car parking reduction and vehicle access restrictions at edge of city centre DEV5B: restrictions + reallocation of half road space to walk/cycle/place in the city centre, to maximise the opportunity from reduced traffic in the city cntre DEV7: Pavement parking implementation DM1: Controlled parking ROAD3: Managed Motorways SOFT3: Promote Sustainable Travel as First Choice
Capacity Improvements & New Links	N.A.	 DEV3: Overcoming severance of M8 for direct access into city centre DEV4A: Improve traffic flow from Clydeside Expressway to M8 (as part of wider junction improvement) DEV4B: Overcoming severance on Clydeside Expressway (and Springburn Expressway) WAT3: New river crossings to improve local connections WALK2: M8 Cap at Finnieston/Woodlands
Goods	N.A.	 FREI1: Last mile delivery and kerbside management FREI2: Distribution centres for HGV FREI3: Low carbon freight movements FREI5: Improved reliability of freight movements via smart network ops

The majority of the interventions in Package E reduce the ability for private vehicles to travel and park in the city centre. For example, AIR3, DM1, DM2 and FREI3, have a positive impact on air quality and will therefore deliver associated health benefits from reduced air pollution. Some interventions such as CYC1, CYC2A, DEV6B and WLK1,2,3, for example, are aimed at promoting active travel and encouraging physical activity, this leads to improvements to health and wellbeing for communities. Much of the interventions that require infrastructure development, for example PT6, PT10 and WAT3, will aim to integrate the public transport network and provide new connections across the city centre.



Although the majority of interventions in Package E perform positively against the SEA objectives there are a number that are expected to have a negative impact on certain aspects of the environment, these are:

- WAT1 and WAT3 have a negative impact on water and biodiversity as they use of the River Clyde for transport may result in a reduction in water quality and may increase the likelihood of pollution incidents from boats. The use of the Clyde for commuting and recreational travel may also impact the integrity of blue networks and species that use it.
- DM2 scores a negative impact on population and human health. Although the improved air quality would have benefits for human health there is also the negative health impacts associated with employees unable to get to their job as quickly. Commuting for long periods of time, particularly when driving can cause stress to individuals. In addition, businesses may also choose to hire locally in order to avoid paying the charge, potentially discriminating against applications from those who are located further from the city centre.
- ROAD2 is expected to have a negative impact on air quality, population and human health and landscape due to the increase in capacity for private vehicles which is likely to increase emissions and have a negative impact on visual amenity.
- PT6 is expected to have benefits for air quality, climate and population and human health as a result of reducing emissions whilst also improving the material assets within the transport network, however depending on the location of the new train stations this intervention could have a negative impact on the soil, cultural heritage and landscape objectives.

The assessment of package E has included spatial detail of the interventions across the GCC and has therefore enabled a more detailed assessment to be undertaken for this package compared to Package A, B, C and D. Figure 5.1, Figure 5.2, Figure 5.3 and Figure 5.4 present the modelling outputs for public transport and road trips (AM and PM) impacts as a result of the Package E interventions against key environmental considerations.

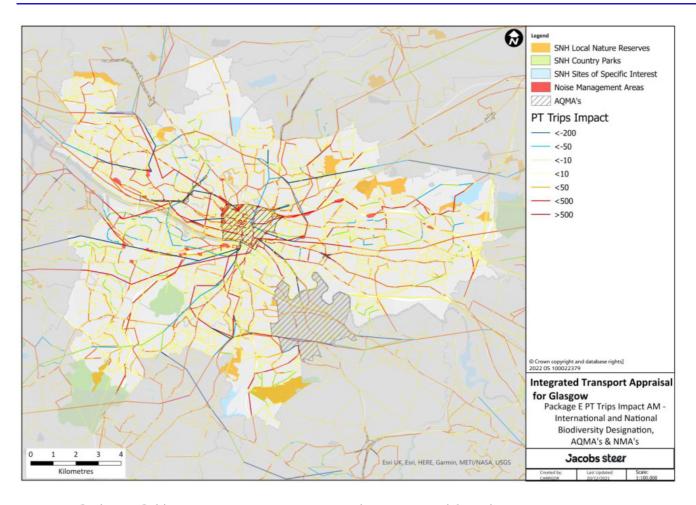


Figure 5.1 Package E Public Transport Trips impacts AM and Environmental Considerations

Jacobs

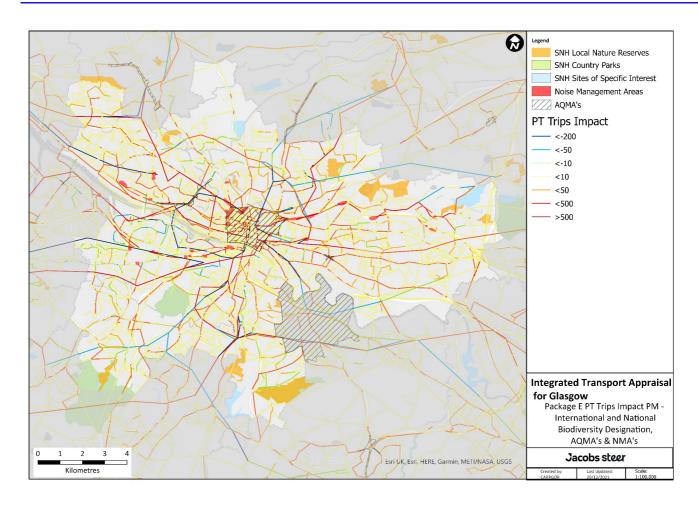


Figure 5.2 Package E Public Transport Trips impacts PM and Environmental Considerations



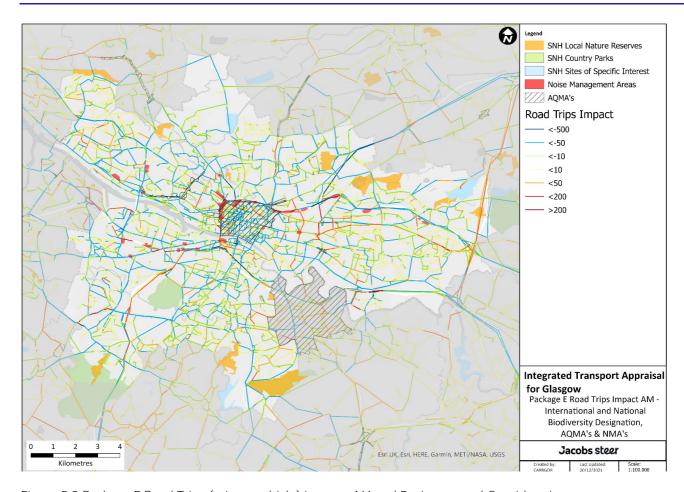


Figure 5.3 Package E Road Trips (private vehicle) impacts AM and Environmental Considerations

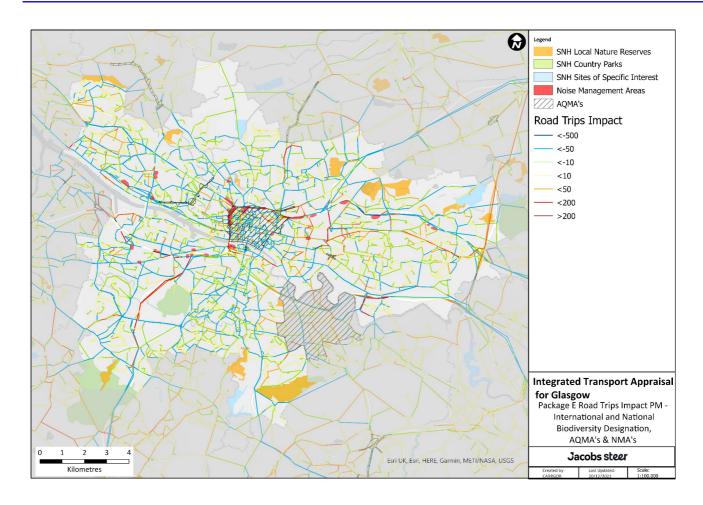


Figure 5.4 Package E Road Trips (private vehicle) impacts PM and Environmental Considerations

Within GCC there are three Air Quality Management Areas (AQMAs). These are located at the City Centre, Byres Road/Dumbarton Road and Parkhead Cross 2. All of these have been declared for the pollutant nitrogen dioxide (NO2). The City Centre and Byres Rd / Dumbarton Rd AQMAs have also been declared for the pollutant particles (PM10). Figure 5.3 and Figure 5.4 shows that there could be an increase in AM and PM road trips by private vehicles within the Parkhead Cross AQMA but a decrease across the City Centre and Byres Road AQMAs. Figure 5.3 and Figure 5.4 show that overall, there is likely to be a decrease in private road trips across the GCC study area. Figure 5.1 and Figure 5.2 show the number of trips made by public transport are expected to increase within all the AQMAs. Modelling results also indicated a reduction in CO2 emissions of approximately 3%, reducing from 550,000 tonnes per year in the reference case to 530,000 per year (with a more pronounced 14% reduction in the city centre). Overall Package E is expected to have a positive, moderate impact on air quality and climatic factors.

There are multiple Noise Management Areas (NMAs) within GCC³. Package E is expected to reduce the number of road trips made by private vehicles across the city (see Figure 5.3 and Figure 5.4), it is therefore expected that the majority of NMAs would not be negatively impacted by the Package E interventions, however there may be localised impacts on NMAs which may have negative impacts on health for local residents at these locations. Overall, Package E is expected to have a positive, moderate impact on population and human health.

Figure 5.1 to Figure 5.4 show that there are five Scottish Natural Heritage (SNH) Sites of Special Scientific Interest (SSSIs) – Fossil Grove, Possil Marsh, Bishop Loch, Waulkmill Glen and Cart & Kittoch, 12 SNH Local

² Local Air Quality Management, GCC

³ City Development Plan, 2017



Nature Reserves (LNR)⁴ and 3 SNH Country Parks, Pollock, Dams to Darnley and Cathkin Braes in the GCC. Depending on the location of certain public transport interventions there is the potential for interventions within Package E to have an impact on these designated sites and on the biodiversity, flora and fauna SEA objective.

Package E is expected to have a neutral impact on the Water objective at this strategic level as it is considered that the interventions are not expected to reduce water quality within the GTA region given the expected reduction in emissions from private vehicles. Due to the fact the majority of the interventions are proposed within the existing network/roadway areas of flood risk have not been specifically reviewed as it is considered that the interventions will not impact negatively on this however it is recognised that there is a significant opportunity for positive impacts on surface water management and improved resilience on the transport network. To ensure positive effects on flood risk interventions should be developed in line with mitigation set out in section 6 of this report.

Table 5.4 provides a summary of Package E against the SEA objectives. At this stage the impact on the water, biodiversity, soil and cultural heritage SEA objectives is assessed to be neutral for Package E. However during specific project development will need to take into consideration the location of designated biodiversity sites (SSSI, LNRs and SNH Country parks) as well as important historic and cultural assets and areas prone to flooding when identifying the location of certain interventions particularly those that require infrastructure development. Overall Package E is expected to have a moderate positive but not significant impact on the SEA objectives.

0	SEA Objective	Air Quality	Climatic Factors	Population and Human Health	Material Assets	Water	Biodiversity, Flora and Fauna	Soil & Geology	Heritage	Landscape (and townscape)
	Score	++	++	++	+	0	0	0	0	+

Table 5.4 Cumulative summary of Package E against the SEA Objectives

5.3.2 Additional External Influences: Package E+

It was recognised that Package E could be further strengthen by having a strategic approach to demand management and parking across the city, improving the competitiveness of sustainable travel options and avoiding traffic and parking displacement. To understand the relative performance of measures that can be delivered as part of the GTS and given the potential changes to the generalised cost of road travel, trip rates and vehicle occupancy that could each be influenced by external policy or trends a Package E+ was developed.

Package E+ assumes the following:

- Package E measures in place as described in Section 5.3
- Assumed 20% increase in the generalised cost of travel, aligned to STPR2 'low traffic growth scenario'. It is
 assumed that this could derive from future road user charging and or increased fuel cost
- Assumed 25% reduction in commuting trips rates, aligned to Covid Legacy scenario
- Assumed 10% increase in vehicle occupancy rates

It is considered that E+ will promote low carbon movement of people and goods in a resilient transport system that can adapt sustainably in the future. Package E+ could result in 15% car km reduction against reference case (compared to 14% for Package E) and a 7% reduction in carbon emissions against reference case (compared to 3% for Package E). Reducing road user carbon emissions over time will require action to be taken to both improve the local vehicle fleet (e.g. increased vehicle electrification) and modal shift from private cars to more sustainable forms of transport (e.g. public transport, cycling and walking). The changes in road user carbon emissions presented within this assessment relate solely to those that would occur as a result of modal shift from

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⁴ Glasgow Local Biodiversity Action Plan, 2020.



private cars as a result of the proposals. In order to provide context, it should be noted that road user carbon emissions in the study area considered are estimated to reduce by approximately 17% solely as a result of improvements to the national vehicle fleet between 2022 and 2030. The estimated reductions in road user carbon emissions presented in this report would therefore be in addition to such reductions.

As a result of this reduction in carbon emissions the impact on the air quality and climatic factors SEA objectives is expected to be major beneficial assuming that the uptake of active travel does materialise.

Package E+ would also create significant disincentives to car travel which in turn will make alternative active modes significantly more attractive and affordable. With improvements to air quality from reduced congestion on the roads, more affordable active travel options and providing a network that people feel safe to use would create a major beneficial impact on the population and human health SEA objective and a minor positive impact on the material assets SEA objective. Package E+ is not expected to change the neutral impact identified on the Biodiversity, Soil & Geology, Water and Cultural Heritage objectives and the positive impacts on Landscape and Townscape from Package E.

Package E+ is being presented within the draft Part 2 Spatial Delivery Framework which accompanies this Environmental Report for consultation.

Table 5.5 Cumulative summary of Package E+ against the SEA Objectives

SEA Objective	Air Quality	Climatic Factors	Population and Human Health	Material Assets	Water	Biodiversity, Flora and Fauna	Soil & Geology	Heritage	Landscape (and townscape)
Score	+++	+++	+++	+	0	0	0	0	+



6. Mitigation and Enhancement Recommendations

Schedule 3 of the 2005 Act requires consideration to be given to "the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme".

6.1 Mitigation

While no negative impacts were identified on any SEA topics from the draft Policy Framework; recommendations for further study or enhancements were provided within table 5.2.

During the ITA assessment of the final package E and E+ any negative impacts that were identified were discussed with the project team to determine effective mitigation and to embed these in the development of the strategy. Where mitigation could not be embedded at this stage due to the strategic nature of the policy, but the Package may still have a significant environmental effect, future mitigation measures were considered. This predominantly comprises recommendations for further studies and/or future project-specific environmental appraisals. Table 6.1 proposes mitigation and enhancement measures for each of the SEA topics These should be reviewed following the adoption of Part 2 of the GTS and as specific projects are taken forward.

Table 6.1: Mitigation Measures for Strategic Delivery Framework

SEA Topic	Mitigation and Enhancement Recommendations
Air Quality /	Ensure early planning for carbon reduction within every intervention taken forward.
Climate / Material Assets	 Develop a set of climate resilient design principles for major infrastructure projects including new railway stations.
	 Hold carbon opportunities workshops from the earliest planning stage onwards.
	• Close collaboration with the City Development Plan team to ensure travel demand and trip lengths are reduced.
	• Future-proof new transport infrastructure to allow the introduction or wider roll-out of emerging zero or low-carbon technologies.
	 Identify the key emission sources associated with each intervention, and how they can be reduced.
	• In addition to embedded carbon considerations, construction activities also need to be considered and planned for. Options requiring significant earthwork movements will have a high energy demand from earth moving equipment and tipper trucks moving earth around/off/to the site. The source of power supply is a significant factor when assessing emissions from construction – whether the machine is powered by diesel generators or can be plugged into the electricity grid.
	 Operational maintenance and refurbishment emissions also need to be considered for an asset throughout its operational life.
	 Opportunities for offsetting should be considered where appropriate to contribute towards the national legislative target of achieving net zero emissions by 2045.
	The potential impacts of climate change on existing and proposed infrastructure need to be planned for and considered in the delivery of the interventions, for example, sufficient space may need to be allowed for additional SuDS and permeable surfacing that can accommodate projected trends in rainfall and surface water flooding.
	 Interventions to be future-proofed for projected changes to flood risk from other sources and changes to temperature (variations and extremes) and storminess.
	 Recommendations from the Glasgow Flood Risk Management Plan and Climate Ready Clyde Strategy should be embedded in detailed project design



SEA Topic	Mitigation and Enhancement Recommendations
Population and Human Health	 Seek to deliver public transport improvements and active travel interventions in advance of All of the active travel recommendations are taken forward and implemented in order to maximise the potential modal shift from private vehicles to walking, wheeling and cycling.
	 Provision of high-quality, attractive, dense and safe networks for people to walk, wheel and cycle to places of work, essential services, community facilities and spaces and public transport hubs should be considered. These should be provided within communities and link with other communities.
	 Seek opportunities to implement active travel measures in, or close to areas with concentrations of poor health, low levels of physical activity, areas of deprivation or areas where the air quality is poor.
	• The development of the transport intervention options should prioritise the provision of high-quality green or blue infrastructure or improve accessibility to existing green and blue infrastructure. This is likely to lead to significant benefits for mental and physical health, as well as sense of place and local pride.
Water	■ The development of the interventions will provide opportunities to reduce flood risk and increase the installation of SuDS which will help maintain or improve water quality. The design of upgrades to existing transport infrastructure or new infrastructure should be undertaken in line with best practice and relevant SEPA guidance, and the Glasgow Flood Risk Management Plan.
	 Early on in intervention design a review should be undertaken to identify potential conflict with adaptation interventions to be delivered through the Flood Risk Management Plan
	Project-specific flood risk assessments should be undertaken where required.
	 Ensure the design of SuDS features considers opportunities for multi-functionality and delivers amenity and biodiversity benefits as well as attenuation and treatment.



SEA Topic	Mitigation and Enhancement Recommendations
Biodiversity / Soil and Geology	Further environmental assessment will need to be undertaken to ensure site-level biodiversity constraints and opportunities are identified and thereby allow any negative effects on biodiversity to be avoided or minimised. This includes consideration of designated and undesignated biodiversity. This environmental assessment will need to prioritise delivering nature-based solutions with multiple benefits and achieving positive effects for biodiversity, such as the Scottish Government's agreement to protect at least 30 per cent of Scotland's land and seas by 2030 (also known as the '30 by 30' commitment) and to highly protect 10 per cent (NatureScot, 2022a).
	Where new transport infrastructure is proposed, particularly linear infrastructure including works on any water bodies, opportunities to provide green or blue infrastructure for biodiversity benefits and climate resilience should be explored – for example to provide new wildlife corridors between biodiversity sites. Careful design will be required to ensure any new wildlife corridors support connectivity without facilitating the spread of invasive non-native species. This green or blue infrastructure is also likely to provide benefits for other SEA topics – for example, tree planting can provide shading and cooling and potentially intercept airborne particulate matter.
	 Opportunities to enhance habitats with a high carbon sink value should be explored. New interventions should also look to deliver positive effects for Biodiversity by interesting patters into pay or rates fitted infrastructure projects.
	 integrating nature into new or retro-fitted infrastructure projects. Where new transport infrastructure is proposed, this should seek to reduce overall land-take and avoid sites designated for their biological interest, particularly sites of international and national importance.
	• Further engagement with NatureScot will be required in relation to the development of any new infrastructure, improvements to existing infrastructure or provision of green and blue infrastructure. This will allow any biodiversity opportunities to be maximised.
Cultural Heritage / Landscape and Townscape	• Further environmental assessment will need to be undertaken to ensure site-level heritage constraints and opportunities are identified. This includes consideration of designated and undesignated heritage assets. For rail infrastructure, the environmental assessment will also need to consider the potential impacts associated with access work, electrification and issues for historic bridges and other heritage assets relating to gauge clearance work. Consultation with HES is likely to be required for site-specific work at heritage assets on the transport network, such as railway stations and road bridges.
	 At the project level, the location and design of transport interventions should avoid direct effects on cultural heritage resources or their setting where feasible.
	 Interventions should be designed to respect existing urban landscape, settlement pattern and sensitive views
	 Interventions should be designed to protect and enhance the character, integrity and liveability of key streetscapes, including removing barriers to use



7. Cumulative Effects

Cumulative effects have been considered throughout the GTS development and the summary below presents the policy framework (intra-plan) cumulative impacts and the inter-plan (the impact of the strategy alongside other PPS).

Firstly, an intra-cumulative impacts of draft policy framework packages have been considered for assessment as outlined in Table 7.1. This is the cumulative impact across each SEA objective if all nine packages were to be delivered at the same time.

Table 7.1: Cumulative Effects of the Draft Policy Framework

Policy Framework Package	Air Quality	Climatic Factors	Population and Human Health	Material Assets	Water	Biodiversity	Soil	Cultural Heritage	Landscape
1	+	+	+	+	~	0	0	~	+
2	++	++	++	+	+	+	+	+	+
3	+	+	++	+	~	~	~	+	+
4	+	++	++	?	?	?	?	?	?
5	+	+	++	++	++	~	0	+	0
6	+	+	+	++	0	0	0	0	0
7	++	++	++	+	0	~	0	0	+
8	+	++	++	+	++	++	+	+	+
9	+	+	++	+	0	~	0	+	+
Cumulative Score	+	+	++	+	+	+	+	+	+

The cumulative effect on almost all SEA objectives is expected to be minor positive impact. Population and human health is expected to experience a moderate positive benefit.

Table 7.2 presents a summary of the cumulative effects on each SEA topic, providing detail behind the scoring presented in Table 7.1.

Table 7.2: Cumulative Assessment of Stage 2 Policy Framework Summary

SEA topic	Summary of Cumulative Assessment
Air Quality and Climatic Factors	Creation of Liveable Neighbourhoods and the encouraging of hybrid models of working is expected to reduce unsustainable travel for short journeys. The policy framework makes reference to the sustainable travel hierarchy and a mode shift towards sustainable transport / low emission vehicles to realise air quality and climate change improvement targets.
	Potential adverse effects could arise where parking controls and/or street closures result in the displacement of private vehicles to other parts of the city. However, these would be localised and mitigated through further assessment at the project level
	Overall, a major positive cumulative effect on air quality and climatic factors is expected from the Strategy.



SEA topic	Summary of Cumulative Assessment
Population and Human	The policies recognise the links between poor air quality and health, as well as the inequalities around access to sustainable transport, and aim to address these issues.
Health	There is a focus on fair and safe access to services for all in the city including, women, people with disabilities, people from ethnic minorities and the LGBT+ community.
	Children in particular are recognised as requiring access to affordable transport to allow access to education and recreational activities. Affordable public transport is identified as an important mechanism in ensuring equality in access to healthcare and food, as well as employment and training for adults.
	Population and human health scored positively across all nine packages.
	Overall, a moderate positive cumulative effect on population and human health is expected from the Strategy.
Material Assets	Integrated travel is expected to improve access to essential services, employment, and the natural environment for people living in the city. Additionally, the policies seek to utilise existing technology to improve travel experience and planning for travel across several mode types.
	The policies would have a positive impact on Materials through supporting active and sustainable travel and facilitation of last-mile delivery solutions which would reduce the impact of heavy traffic on infrastructure.
	Material assets scored positively across eight packages with the exception of Package 4 (Collective transport) where the impact is uncertain.
	Overall, a minor positive cumulative effect on material assets is expected from the Strategy.
Water	The policies are expected to have a positive impact on the water environment as it sets out the importance of the blue infrastructure in the travel network and as part of a high-quality public realm. The policies explicitly refer to designing infrastructure taking climate resilience for the wider community into account, particularly in relation to flood risk management. Water quality would also be improved by the requirement to manage run-off from roads through SUDS and other appropriate drainage. Water scored positively in three packages (packages 2,5 and 8). Overall, a minor positive cumulative effect on water is expected from the Strategy.
Biodiversity	The policies are focussed on enhancing access to green space, improving blue/green network connectivity, increasing tree cover and creating habitats, protecting wildlife, and promoting sustainable travel. Biodiversity scored positively in two packages (package 2 and 8).
	Overall, a minor positive cumulative effect on biodiversity is expected from the Strategy.
Soil and Geology	Interventions that reduce the volume of traffic on the roads that use fossil fuels may have an indirect positive impact on land quality as there will be less pollutant run off to soils.
	Soil and geology scored positively in two packages (package 2 and 8).
	Overall, a minor positive cumulative effect on soil is expected from the Strategy.
Cultural Heritage	Encouraging the move to active travel and away from private vehicles will reduce congestion in the city centre. The reduced traffic will improve townscape and public realm which could benefit the setting of cultural heritage assets. There are also opportunities to enable more sustainable access to cultural heritage sites.
	The policies would have a positive impact on Cultural Heritage through facilitating effective transport for Glasgow as a tourist destination
	Cultural heritage scored positively across five packages (2, 3, 5, 8 and 9).
	Overall, a minor positive cumulative effect on cultural heritage is expected from the Strategy.



SEA topic	Summary of Cumulative Assessment
Landscape and	Encouraging the move to active travel and away from private vehicles will reduce congestion in the city centre. The reduced traffic will improve townscape and public realm.
townscape	The policies are focussed on demand management for travelling by private vehicle through implementing parking restrictions.
	Landscape scored positively across 6 packages with the exception of packages 4, 5 and 6 where the impact was not clear or neutral.
	Overall, a minor positive cumulative effect on landscape is expected from the Strategy.

Table 7.3 presents the inter-plan cumulative assessment has been undertaken focusing on proposals in the City Development Plan.

Table 7.3 Potential cumulative Effects with other PPS

SEA topic	Summary of Cumulative Impact with other key PPS
Air Quality and Climatic Factors	The cumulative effect of the GTS and other PPS on air quality is likely to remain positive, with the City Development Plan encouraging higher density development closely linked to public transport and active travel service supporting modal shift and a reduction in traffic in the city. Any new development on greenfield sites may generate higher vehicle trips rates which may lead to negative effects on air quality particularly along key transport corridors. The air quality issues are mostly attributable to traffic congestion and AQMAs are in place with action plans to help reduce emissions in these areas. Effective implementation of the GTS in conjunction with other plans such as the Active Travel Strategy, and City Centre Transport Plan may encourage further use of sustainable transport modes.
Population and Human Health	The cumulative effect of the GTS and other PPS on population and human health is likely to remain positive, with the PPS supporting a significant reduction in traffic within the city and supporting the provision of additional facilities for sustainable travel such as mobility hubs, core paths, cycleways etc.
Material Assets	The cumulative effect of the GTS and other PPS on material assets could see more significant positive effects through modal shift to sustainable transport modes, and the integration of sustainable transport options into new developments.
Water	The cumulative effect of the GTS and other PPS on water is likely to be remain positive, with the CDP promoting an integrated approach to the planning and development between transport infrastructure and SUDS water management infrastructure
	If sites are developable, appropriate design of development will be required in order to ensure that there is no associated increase in flood risk outwith the site and to ensure there is no unacceptable flood risk for future uses of the site. Consideration should also be given to what opportunities the GTS presents in terms of managing flood risk for the wider community, and the implications of GTS interventions 'locking-in' existing and future flood risk through the retention of existing impermeable surfaces.
	Effective implementation of the GTS with the Metropolitan Glasgow Strategic Drainage Partnership (MGSDF) objectives will ensure an integrated approach to infrastructure development and SUDS and surface water management.



SEA topic	Summary of Cumulative Impact with other key PPS
Biodiversity	The cumulative effect of the GTS and other PPS on biodiversity is likely to be mixed with the potential for significant impacts/opportunities depending on the location of new housing development and major transport infrastructure projects. However the reduction and removal of private vehicles and the promotion of the creation and enhancement of the blue/green networks and new Local Nature Reserves in the CDP will have a positive effect on biodiversity with the city centre.
	Through appropriate layout and design of development, higher levels of biodiversity could be established within development.
	Effective implementation of the GTS in conjunction with Glasgow's Local Biodiversity Action Plan.
Soil and Geology	There may be mixed effects on soil quality due to new housing/infrastructure development proposed within both the City Development Plan, with the potential for some greenfield development. This would require careful mitigation and further environmental appraisal will be required as proposals are developed.
Cultural Heritage	The cumulative effect of the GTS and other PPS on cultural heritage should remain positive with policies identified within the CDP to protect and enhance cultural heritage with Glasgow However, there could be adverse visual impacts on the setting of heritage assets from new developments, depending on the location and design. Further assessment will be required at the project level.
Landscape and townscape	The cumulative effect of the GTS and other PPS should remain positive through the combination of the reduction in private vehicle traffic in the city centre. There is potential for adverse impacts from combinations of transport and land use developments where these are located on greenfield sites or of a high density. However this could be mitigated through sensitive design in line with CDP guidance and there is potential for combined enhancements to landscape/streetscape through sensitive design and planning particularly where brownfield sites are targeted.



8. Next Steps

8.1 Monitoring

Section 19 of the 2005 Act requires the GCC, as the Responsible Authority, to monitor the significant environmental effects of the implementation of the transport strategy.

Best practice in SEA Monitoring requires that a detailed monitoring framework reflects the implementation of the strategies actions, identifies where existing indicators (from the delivery of related PPS) can be used to track progress and, ideally, is embedded within the final Strategy to ensure that monitoring is undertaken as part of GTS delivery.

A monitoring framework and associated targets/indicators will be presented in the Post Adoption statement, the final stage in the SEA process.

8.2 SEA Activities to Date and Next Steps

The draft ER will be issued alongside the draft GTS Part 2 Spatial Delivery Framework and will be subject to public consultation for a minimum period of 6 to 8 weeks. All comments and representations will be reviewed and considered before finalising the GTS and the ER.

Table 8.1: SEA Activities and Next Steps

SEA Stage	Timescale
Scoping Report Prepared and issued scoping request to consultation authorities (5-week consultation)	February 2021
Received responses on Scoping report from Statutory Authorities	April 2021
Final draft of SEA Environmental Report	May 2023
Adoption of Environmental Report	TBC
Statutory Consultation on SEA findings and GTS (6 week - consultation)	TBC
Post Adoption SEA Statement	TBC