Sniffer

GLASGOW CITY REGION

Climate Change Adaptation Strategy Strategic Environmental Assessment Scoping Report

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WSP

7 Lochside View
Edinburgh Park
Edinburgh, Midlothian
EH12 9DH

Phone: +44 131 344 2300

Fax: +44 131 344 2301

WSP.com

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Checked by	Mike Roberts	Mike Roberts	Mike Roberts	
Signature			Roberts, Mike (UKMXR058) Digitally signed by Roberts, Mike (UKMXR058) DN: cn=Roberts, Mike (UKMXR058), ou=Edinburgh (Lochside View), email=Mike.Roberts@wsp.com Date: 2020.09.03 10:05:50 +01'00'	
Authorised by	Rachel McEvan	Rachel McEvan	Rachel McEvan	
Signature			Rachel McEvan Digitally signed by Rachel McEvan DN: cn=Rachel McEvan, c=GB, o=WSP UK, ou=EAM&TP, email=rachel.mcevan@wsp.com Date: 2020.09.03 10:18:10 +01'00'	
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1 INTRODUCTION

1.1 BACKGROUND

1.1.1. Sniffer, on behalf of the Climate Ready Clyde (CRC) initiative, is preparing the Strategic Environmental Assessment (SEA) of a new Regional Climate Change Adaptation Strategy (the "Strategy") for the Glasgow City Region ("the City Region").

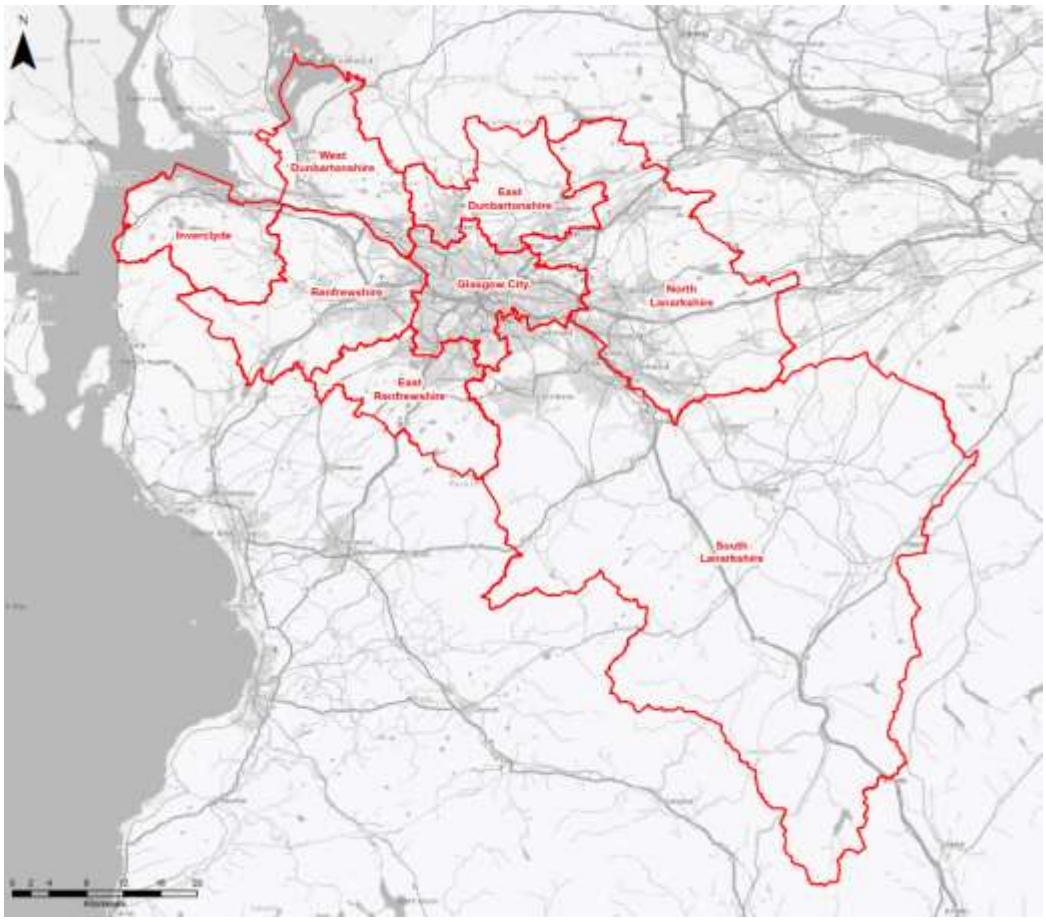
1.1.2. The Strategy will set the strategic framework for climate change adaptation in the City Region through to 2030. It will comprise a high-level vision and objectives which will be supported by a number of interventions across the City Region which will build on the Theory of Change for a Climate-Ready City Region[1] document (developed by the CRC to outline the pathways of change in the City Region).

1.1.3. CRC is an unincorporated association of 15 public and private sector partners (supported by the Scottish Government) working on climate change adaptation. It includes the region's eight local authorities, the Scottish Environment Protection Agency (SEPA), Transport Scotland, Strathclyde Partnership for Transport (SPT), University of Glasgow, University of Strathclyde, SGN and NHS Greater Glasgow and Clyde. The Glasgow City Region which CRC covers is shown in **Figure 1.1** below.

1.1.4. CRC is currently co-funding an initiative, Clyde Re:Built, along with EIT Climate-KIC to develop and pilot an approach to innovation which seeks to create transformative change. The development of the Strategy is also being funded through this project. Through this project, Sniffer is also working with the cultural and climate change charity Creative Carbon Scotland, the specialist climate change and economic research consultancy Paul Watkiss Associates and the European Union's climate innovation hub EIT Climate-KIC. This consortium is managed by Sniffer, a climate resilience charity and knowledge broker.

[1] Climate Ready Clyde, Theory of change FOR A Climate Ready Glasgow City Region. [online] available at: http://climatereadyclyde.org.uk/theory-of-change/

Figure 1.1 - Glasgow City Region covered by Climate Ready Clyde



1.2 PURPOSE OF THE SEA SCOPING REPORT

1.2.1. The purpose of this Strategic Environmental Assessment (SEA) Scoping Report is to set the proposals for conducting the SEA to enable the Consultation Authorities (Historic Environment Scotland (HES), SEPA and Scottish Natural Heritage (SNH)) to form a view on the proposed scope/level of detail that will be appropriate for the Environmental Assessment which will be presented in the SEA Environmental Report (ER).

1.2.2. This report has been prepared in accordance with the European Directive 2001/42/EC[2] (the 'SEA Directive') and section 15 of the Environmental Assessment (Scotland) Act 2005[3] (referred to hereafter as 'the 2005 Act'). The 2005 Act requires all qualifying policies, plans, programmes and strategies (PPS) to undergo SEA, the process for identifying, reporting and mitigating the environmental impacts of the proposed PPS.

1.2.3. Table 1-1 sets out the key facts pertaining to the Strategy.

[2] Directive 2001/42/EC, [online] Available from: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32001L0042 (Accessed on 29/07/2020)

[3] Environmental Assessment Scotland) Act, 2005. [online] Available at: https://www.legislation.gov.uk/asp/2005/15/contents (Accessed on 29/07/2020)

Table 1-1 – Key Facts relating to the Glasgow City Region Adaptation Strategy

Name of Responsible Authority	Sniffer
Title of PPS	Glasgow City Region Adaptation Strategy
What Prompted the PPS	CRC has voluntarily committed to developing the Strategy as an innovative and ambitious way to drive the City Region's transformational adaptation approach, particularly in sectors and systems which work at the regional scale (e.g. infrastructure, housing, transport, economic development and land use planning) and which require collective, concerted, collaborative effort to adapt.
Subject	Climate change adaptation
Period covered by the PPS	The Strategy will set the strategic framework for climate change adaptation in the City Region through to 2030
Frequency of Updates	The plan would normally be expected to be revised every 5 years, with an interim update if necessary. However, given the uncertainty associated with COVID-19, a refresh may be needed sooner, depending on broader socio-economic change.
Area covered by the PPS	The Strategy covers the Glasgow City Region which encompasses – East Dunbartonshire, East Renfrewshire, Glasgow City, Inverclyde, North Lanarkshire, Renfrewshire, South Lanarkshire and West Dunbartonshire (refer to Figure 1.1 above)
Purpose and / or Objectives of the PPS	Glasgow City Region's first Climate Adaptation Strategy is intended to set the strategic framework for adaptation in the City Region to build resilience to the range of possible climate futures in Glasgow City Region.
Contact	Eleanor Pratt Climate Resilience Coordinator, Sniffer Edinburgh Centre for Carbon Innovation Infirmary Street Edinburgh EH1 1LZ

The contents of this scoping report are detailed below:

- The background and alternatives developed for the Strategy including information on the draft vision, objectives and interventions (**Section 2**);
- Presenting the requirement for, and a broad overview of the requirements of SEA (**Section 3**);
- The relationship of the Strategy with other relevant policies, programmes and strategies (PPS) (**Section 4**);
- Identifying the environmental baseline of the City Region as well as those issues and opportunities for the Strategy and summarising the likely evolution of the environment should the Strategy not be adopted (**Section 5**);
- Summary of the scope and level of detail of the SEA and the setting of the SEA objectives drawing upon the findings in Section 5 (**Section 6**);
- The SEA assessment methodology (**Section 7**) setting out:
  - The draft alternative assessment framework;
  - The draft compatibility assessment framework of the Strategy vision and objectives against the SEA objectives; and
  - The assessment framework of the draft Strategy interventions against the SEA.
- Setting out next steps (**Section 8**).

2 GLASGOW CITY REGION CLIMATE CHANGE ADAPTATION STRATEGY

2.1 INTRODUCTION

2.1.1. CRC has voluntarily committed to developing the Strategy as an innovative and ambitious way to drive the City Region's transformational adaptation approach, particularly in sectors and systems which work at the regional scale (e.g. infrastructure, housing, transport, economic development and land use planning) and which require collective, concerted, collaborative effort to adapt.

2.1.2. The Strategy is intended to set the strategic framework for adaptation to build resilience to the range of possible climate futures in the Glasgow City Region in line with the goals set out in the Theory of Change which state:

- People shape their own lives and places so they are climate ready.
- Glasgow City Region (people, organisations, businesses and ecosystems) is made climate ready by the way resources, services & assets are directed and used.
- Actors collectively create the right conditions for Glasgow City Region to become climate ready

2.1.3. These will be supported by seven principles from the Theory of Change which cut across the outcomes in the strategy:

- **Intrinsic value of nature:** Nature/biodiversity has intrinsic value and efforts to build climate resilience should do so in ecological, as well as human, communities.
- **Climate & social justice:** People's lives can be made healthier and happier – and inequality/ vulnerability lessened – by efforts to build climate resilience.
- **Revolution in understanding:** There needs to be a 'revolution in understanding' the potential impacts of climate change, and the adaptation options available.
- **More of the same won't do:** An effective response to climate change will require a revolutionary approach.
- **Revolution in planning:** There needs to be a 'revolution in planning'. We must rethink how we use land and space, and where and what we build, with planners empowered to prioritise climate resilience.
- **Revolution in finance:** There needs to be a 'revolution in finance' to ensure that the funds and resources necessary to build climate resilience are made available.
- **Recognising uncertainty:** Our future is uncertain; we need to reduce global heating and plan for worst-case scenarios, recognising that climate change is not a linear process

2.1.4. In delivering this vision, the Strategy will address the priority areas of climate change risk and opportunity as set out in Glasgow City Region's first Climate Risk and Opportunity Assessment[4].

[4] Climate Ready Clyde, Climate Risk and Opportunity Assessment for Glasgow City Region, 2018 [online] available at: http://climatereadyclyde.org.uk/climate-risk-and-opportunity-assessment-for-glasgow-city-region-key-findings/

2.2 CONSIDERATION OF STRATEGIC ALTERNATIVES TO THE STRATEGY

2.2.1. The Strategy has devised three strategic alternatives:

- **1. Do Nothing** – Adaptation efforts in Glasgow City Region would continue through the existing planned adaptation work of local and regional actors, National and UK policy, as well as autonomous adaptation resulting from extreme weather events, or broader market trends.
- **2. Incremental adaptation planning approach** – This would focus on addressing recommendations from the evidence base from the City Region's agenda using a sectoral approach, aligned with the Theory of Change, as well as encouraging organisations involved in CRC adaptation actions where the central aim is to maintain the essence and integrity of a system or process at a given scale.
- **3. Transformational approach** – This would seek to realise the areas of innovation in the Theory of Change so as to achieve fundamental change in the region's systems which delivers a step change in resilience to climate change and adaptive processes, and mobilises a wider cohort of actors, including communities and business. Use of systems thinking is adopted, to ensure a greater sense of scale is captured and to move beyond current silo thinking. Consideration would be given to transformational adaptation as a social process, and the need to ensure the political economy and power dynamics are considered, which would help to deliver new thinking. Finally, this approach analyses the barriers, and levers of change to help identify limits to incremental adaptation and the mechanisms to catalyse transformational adaptation. A key element of the Strategy would be the development and delivery of a climate resilient innovation portfolio as a new approach to transformation. In parallel, it would set out a series of adaptation solutions which address climate risks and opportunities, as well as broader enabling factors in finance and economics, governance and decision making, and culture and behaviours.

2.3 DRAFT VISION, OBJECTIVES AND INTERVENTIONS

The Strategy will seek to ensure Glasgow City Region's economy, society and environment is not only prepared, but continues to flourish in the face of the impacts arising from the climate crisis. In this context, the overarching draft vision is: ***"A Glasgow City Region which flourishes in the future climate"***. The Strategy will outline how Climate Ready Clyde members and wider actors in Glasgow City Region achieve this vision, in line with the conditions set out in our Theory of Change for a climate ready City Region.

As such, the strategy objectives are to:

- Provide a strategic framework for Glasgow City Region's people, businesses and nature to adapt, as part of a hierarchy of other plans and strategies and wider activity.
- Outline key solutions to be developed and implemented at a regional level to manage the region's climate risks and help realise opportunities.
- Outline how we will enable and equip a wider cohort of citizens and organisations to play their role.
- Sets out how it will be implemented, monitoring and evaluated.

These objectives will be achieved through a number of interventions which will be subject to assessment as part of the SEA Environmental Report (ER):

Strand 1: Building regional capacity to meet the challenge
• Foster community awareness, participation and justice in our adaptation efforts, through a cultural approach
• Implement climate risk management frameworks, joint working, strategy development and budgeting decisions
• Disclose our progress, and share learning and insight around the world, with a particular focus on developing countries
• Close the funding gap
• Establish a Centre of Expertise for applied adaptation, using Glasgow City Region as a research and innovation demonstrator
Strand 2: A resilient, thriving region, and local places
• Plan the 22nd Century Clyde corridor
• Build climate resilience of our Infrastructure and built environment
• Develop resilient landscapes through targeting and expansion of the Glasgow and Clyde Valley Green Network and nature-based solutions
• Enhance early warning and preparedness for floods and heatwaves
• Deliver Clyde Re:Built – a climate resilient innovation portfolio for city region-wide transformation

3 APPROACH TO STRATEGIC ENVIRONMENTAL ASSESSMENT

3.1 REQUIREMENT UNDER THE 2005 ACT

3.1.1. SEA is used to describe the application of environmental assessment to plans and programmes in accordance with European Council Directive 2001/42/EC. The SEA Directive is enacted in Scotland through the “Environmental Assessment (Scotland) Act 2005, known as the ‘SEA Regulations’.

3.1.2. The purpose of the SEA Directive is to ensure a high level of environmental protection, and to integrate the consideration of the environment into the preparation and adoption of PPS, with a view to promoting sustainable development. SEAs aim to make PPS more sustainable and more responsive to their environmental effects, by identifying a PPS’s significant impacts and ways of minimising its negative effects.

3.1.3. In accordance with Section 9 of the 2005 Act, Sniffer has determined that the proposed Strategy is likely to have significant environmental effects and therefore it was deemed necessary to undertake a SEA screening exercise.

3.2 SEA SCREENING

3.2.1. In April 2020 Sniffer conducted an initial SEA Screening exercise to determine the requirement for SEA to be undertaken. The SEA Screening concluded that the Strategy has the potential to achieve significant positive environmental effects, considering the cumulative potential across all areas of the Strategy. Proactively adapting to climate change through new actions, as well as by influencing other national, regional and local plans and strategies, and influencing allocation of resources, and activities, is likely to reduce or reverse significant deterioration of, and impact on the environment as well as the region’s economy and society.

3.2.2. The plan is a critical part of achieving sustainable development. At present climate risks present the possibility of compromising the ability of future generations to meet their own needs. It is not a case of ‘if’ climate impacts will happen, but when, and increasingly climate impacts are already being felt in Glasgow City Region. As such, Sniffer is proposing to undertake a SEA of the strategy.

3.2.3. Through the screening consultation the SEA Consultation Authorities (CAs) were also of the view that a SEA was required and that a SEA Scoping Report would be required for further consultation in order to set the scope and level of detail required for the environmental assessments required to inform the ER.

3.2.4. The scoping process requires Sniffer (as the Responsible Authority) to consider in conjunction with the SEA Consultation Authorities, the scope and level of detail of the environmental assessment.

3.3 SEA OBJECTIVE SETTING

3.3.1. While not specifically required by the 2005 Act, SEA objectives are a recognised way of considering the environmental and social effects of a PPS and comparing the effects of alternatives. The SEA objectives will be developed using the environmental issues and opportunities identified in Section 5. The objectives will be used to assess the interventions in the Strategy and to identify the likely environmental effects.

3.3.2. SEA objectives were developed using:

- A review of key policy documents;
- Baseline data collation;
- An assessment of future trends; and
- The identification of environmental issues and opportunities.

3.3.3. Section 6.3 below sets out the SEA objectives that have been created from this Scoping exercise.

3.3.4. The SEA objectives are separate from the draft Strategy's vision and objectives although they can influence each other and even overlap through the iterative nature of the Strategy development and the SEA process. To fulfil the requirements of the SEA Directive, the SEA objectives have been developed to enable assessment of the environmental issues set out in Schedule 3 of the 2005 Act, including the interrelationship between them (refer to Section 5 for further details).

4 RELATIONSHIP WITH OTHER PLANS, PROGRAMMES AND STRATEGIES

4.1 INTRODUCTION

4.1.1. In order to establish a clear scope for the SEA, it is necessary to review and develop an understanding of the environmental, social and economic objectives contained within international, national and regional legislation, policies and plans that are of relevance to the Strategy.

4.1.2. The 2005 Act requires information on:

- *"The degree to which the plan or programme influences other plans and programmes including those in a hierarchy"* (Schedule 2, Paragraph 1(b)).

4.1.3. The review process ensures that the SEA complies with existing international, national and regional governance. The process entails identifying and reviewing those environmental protection objectives that are directly relevant to both the Strategy and the SEA.

4.1.4. The scoping task of identifying related legislation, policies and plans cannot yield an exhaustive or definitive list, therefore, the review has been focussed to ensure that only policies that are current and of direct relevance to the Strategy are included.

4.2 POLICY HIERARCHY

4.2.1. Although the Strategy will be voluntary, once developed the Strategy will sit in a hierarchy, underneath the second Scottish Climate Change Adaptation Programme (SCCAP2), but at a higher level than adaptation actions taken by local organisations such as Local Authorities.

4.2.2. Within this hierarchy it is intended that the Strategy will influence both national and UK policy on climate adaptation (e.g. the SCCAP2, Infrastructure Investment Plan, the Strategic Transport Projects Review, or Flood Risk Management policy, UK Green Finance Strategy, UK Research and Development Roadmap) as well as more local activities (e.g. Local Authority Adaptation Strategies, Local Development Plans, Locality Plans etc.) in relation to climate change adaptation.

4.2.3. The draft Strategy will also complement, incorporate and influence the adaptation work undertaken by organisations that operate at a similar scale, e.g. Clydeplan, through the forthcoming Regional Spatial Strategy, SPT through the Regional Transport Plan, the Glasgow and Clyde Valley Green Network Strategy and the Clyde Marine Planning Partnership's Regional Marine Plan. It will also play a role in influencing shorter term/interim plans arising from COVID-19 – e.g. the Transport Transition Plan or economic recovery plans**.**

4.2.4. Given that climate change will have impacts across all sectors of the City Region's economy, society and environment, the Strategy is also intended to influence wider policies, plans and actions to ensure they adequately account for the need for resilience to future climate change. For example, this could include infrastructure investment plans from Infrastructure Operators or local community plans with a specific focus on climate change and adaptation.

4.2.5. The Strategy will be designed to set the direction for all public, private and voluntary organisations working in the City Region. As a voluntary strategy, it will likely not directly apply to any organisations. However, in the first instance, it will likely be more highly regarded by institutions covered by the Public Sector Reporting Duties under the Climate Change (Scotland) Act 2009, and financial institutions (e.g. banks, building societies and insurers) and large asset owners in the

private sector expected to report the physical risks of climate change under the proposed commitments in the UK Government's Green Finance Strategy.

4.3 RELATED PLANS, PROGRAMMES AND STRATEGIES

4.3.1. Table B1, Appendix B sets out a list of those PPS which are considered likely to be affect or, be affected by the draft Strategy. The Table sets out those PPS from an International (European), National (Scotland) and Regional level (Glasgow City Region).

4.3.2. It should be noted that the draft Strategy is a regional level strategy, which could influence issues that should be considered in more detail in lower level plans (at individual local authority level) or during more detailed project planning. The Environmental Assessment undertaken and reported in the ER would help to ensure a regionally consistent approach to the setting of local level priorities and outcomes relating to climate change adaptation through embedding them within the regional adaptation strategy.

4.3.3. Appendix B sets out a more detailed analysis of each relevant PPS and its implications for draft Strategy.

5 ENVIRONMENTAL BASELINE, RISKS AND OPPORTUNITIES

5.1 INTRODUCTION

5.1.1. This section sets out the key baseline information for each of the SEA topics, as well as any future trends regardless of the implementation of the Strategy.

5.1.2. It also identifies key issues in relation to the Strategy and the implications for the drafting of the final strategy. The information presented has been used to develop the SEA Objectives (refer to Section 6) and the appraisal frameworks set out in Appendix C.

5.1.3. The Study Area referred to is shown in Figure 1.1. Where possible this report assesses the whole study area on a regional scale and does not compare sub-regions however in some instances data may be presented per local authority area.

EVOLUTION OF THE BASELINE ENVIRONMENT

5.1.4. The future climate hinges on humans reducing greenhouse gas emissions to the levels required by the Paris Agreement regardless of whether the draft Strategy is implemented across the City Region. However, the world is not currently on track to do this.

5.1.5. Current policy projections put the world on a course of 3.1-3.7°C of warming by 2100. The Paris Agreement aims to hold the increase in global average temperatures 'well below' 2°C above pre-industrial levels, whilst also pursuing efforts to limit the temperature increase to 1.5°C. Even under the Paris Agreement, the combination of current policies, and future pledges are due to reach between 2.6- 3.2°C of warming.

5.1.6. In the years ahead, the ratchet mechanism of the Paris Agreement will increase ambition and will increase every five years, with the next due in 2020, but success is not guaranteed. However, this global agreement still commits the City Region to experience a further 0.5°C of warming, which will increase, even if Scotland reaches net zero emissions by 2045.

5.1.7. Towards a Climate Ready Clyde: Climate Risks and Opportunities for Glasgow City Region (2019) uses a high emissions scenario as a starting point for planning for climate risks and opportunities and this has informed the information presented below on the evolution of the baseline which assumes that the draft Strategy is not implemented but that local and central government continue to work towards achieving the commitments set out in the Paris Agreement.

5.2 ENVIRONMENTAL BASELINE

NATURAL CAPITAL

5.2.1. Natural capital can be defined as the 'the stock of renewable and non-renewable resources that combine to yield a flow of benefits to people'[5]. Natural capital incorporates multiple different components of the living and non-living natural environment, as well as the functions and processes that link these components and sustain life. It is from this Natural Capital that humans utilise a wide range of services, which are often describe as ecosystem services.

5.2.2. Scottish Natural Heritage's (SNH) Natural Capital Asset Index (NCAI) tracks changes in the capacity of Scotland's terrestrial ecosystems to provide benefits to people. The 2019 Index update showed

[5] The Natural Capital Coalition http://naturalcapitalcoalition.org/natural-capital/

that the potential of Scotland's habitats to deliver ecosystem services has improved over the past 18 years and is now at its highest level since 2000, recovering from a low in 2012[6].

5.2.3. The 2019 update contains results from 2000 up to 2017. The update showed that Scotland's natural capital is now in an 'increasing' state, increasing over 2% in the three years to 2017 and has increased in each of the past five updates[7]. Since 2000, key habitat increases have been heathland, inland surface waters, coastal waters and woodlands. Mires, bogs and fens, heathland and grassland habitats have both seen decreases when compared to 2000 baseline year, however, they are showing signs of recovery[7]. Agricultural and cultivated land has continued to decrease since 2000[7].

5.2.4. In 2016, the asset value of Scotland's natural capital was valued at £196 million, which made up 20% of the whole UK's asset value. Of this asset value, 37% was attributable to non-material benefits not directly captured in gross domestic product[8].

Likely Evolution of the Baseline without the Adaptation Strategy

5.2.5. Although natural capital stocks have stabilised and marginally improved over the past six years, improving the stock of natural capital is important for increasing the overall resilience of natural systems in the City Region from the impacts of climate change and future development.

5.2.6. Further development to address the needs of the City Region's growing population, in combination with a changing climate has the potential to further fragment and deteriorate the region's ecosystems, impacting on natural capital and its ability to provide ecosystem services. More extreme weather events will continue to increase in impact and frequency, affecting the natural resilience of these habitats and their ability to provide benefits in the future.

5.2.7. Greenspace provides a range of ecosystem services which improve the quality of life within the City Region. The Glasgow City Region Green Network project will provide a well-connected, high quality greenspace through the region over the next 35 years. The project will provide 30km^2 of urban green infrastructure, 500km^2 of new woodland and wildlife habitats, 100km of new active travel routes, 4000 new community growing spaces and the greening of 3500 hectares (ha) of vacant and derelict land .

5.2.8. Even without the draft Strategy, this project is likely to result in a substantial increase in the City Region's natural capital stock, however, the draft strategy presents opportunities for a joined up approach, where both new and old natural capital assets can be protected from climate change and provide climate resilience.

[6] Scotland's Natural Capital Asset Index, 2020 Summary, [online] available at: https://www.nature.scot/sites/default/files/2020-04/Scotland%27s%20Natural%20Capital%20Asset%20Index%202020%20-%20Update%20summary.pdf
[7] Nature Scot, Scotland's Natural Capital Asset Index, Story Map, [online] available at: https://snh.maps.arcgis.com/apps/Cascade/index.html?appid=d5d1ed312b1f480f810a45a237cfeefc
[8] Office for National Statistics, Scottish Natural Capital Accounts 2020, [online] available at: https://www.ons.gov.uk/economy/environmentalaccounts/articles/scottishnaturalcapitalaccounts/2020

Table 5-1 – Strategy Implications – Natural Capital

Key Risks / Opportunities	Implications for the Strategy
▪ Monitoring and measuring natural capital is important to ensure that the benefits of nature for society are recognised and protected. ▪ Climate change poses a risk to natural capital and its ability to provide ecosystem services. ▪ The region's ecosystems may be at threat of fragmentation from future development in response to population growth.	The Strategy should promote actions to maintain and increase the regions natural capital assets and the ecosystem services they provide.

CLIMATIC FACTORS

5.2.9. Emissions of greenhouse gases (GHGs) are having a detrimental impact upon the global atmosphere, and it is widely acknowledged that GHGs are already contributing to changes in the global climate, with extreme weather conditions becoming increasingly common. Equally, even if GHG emissions were stopped today, climate impacts would still be experienced in the future owing to lags in the climate system.

5.2.10. According to UK Climate Projections 2018 (UKCP18)[9] over the past few decades there has been an increase in annual average rainfall over the UK, particularly over Scotland for which the most recent decade (2008–2017) has been on average 11% wetter than 1961–1990 and 4% wetter than 1981-2010[9].

5.2.11. In general, climate change is projected to lead to wetter winters and drier summers although natural variation, including extreme events such as storms and heat waves, will continue to punctuate these trends. By the 2080s, winter precipitation is expected to increase in Scotland by 1.4% to 41.4%, with a central estimate of 19.5%. For summer projections, rainfall is projected to decrease by 39.3% to 1.2%, with a central estimate of a decrease in 20.2%. The Climate Ready Clyde Risk Assessment[10] supports this trend with winter precipitation predicted to increase by between 9% and 49.3% across the City Region.

5.2.12. Temperatures in Scotland are projected to continue to rise over the next century, with milder winters and hotter summers. By the 2080s, projected increases in in the City Region reported in the Climate Ready Clyde Risk Assessment range from 1.9 – 4.8°C of warming during the winter, with summer increases projected to range from 2.4 – 6.9°C. As well as the general changes in temperature, the City Region is projected to see more frequent and severe heat waves. Under a medium emissions scenario, by the 2050s, the likelihood of a heat wave occurring in any year is 1 in 3. Across the City Region there will be a variance between urban and rural areas. This is due to a range of factors, including less vegetation, reduced reflectivity and the storing of heat in the built environment. In addition, the extra heat generated from heating, cooling and transport also contributes to overall variations.

5.2.13. Coastal flood risk is projected to increase over the 21st century, which would be dominated by the effects of time-mean sea level rise, rather than changes in atmospheric storminess associated with extreme coastal sea level events[9]. Sea levels are rising due to a combination of thermal expansion

[9] Met Office, UKCP18 Science Overview Report, 2019 Update [online] available at: https://www.metoffice.gov.uk/pub/data/weather/uk/ukcp18/science-reports/UKCP18-Overview-report.pdf
[10] Towards a Climate Ready Clyde: Climate Risks and Opportunities for Glasgow City Region. Methods and Approach (2019)

of the water (60%) and the melting of glaciers, ice caps and polar ice sheets (40%). By 2080, sea levels in the Clyde Marine Region[11] are expected to rise by 0.47m[12] with extreme long-term predictions (to the year 2300) ranging from 0 – 3m. This is likely to cause coastal inundation, through erosion of the intertidal zones. Data for the Mull of Kintyre to the Mull of Galloway zone[13] suggests that the rate of erosion has increased from the historical to the current period by c.0.3 m/yr to 0.7 m/yr.

5.2.1. The Scottish Government is committed to a low carbon economy through reductions in carbon emissions and adaptation to climate change. The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019[14] sets targets to reduce Scotland's emissions of all greenhouse gases to net-zero by 2045 at the latest, with interim targets for reductions of at least 56% by 2020, 75% by 2030 and 90% by 2040. This net-zero target is five years ahead of the rest of the UK. Glasgow City Council have also set a more ambitious target to become carbon neutral by 2030.

5.2.2. In 2018, the total CO_2 emissions across the City Region were 8425kt, a reduction of 29% over the 2008 total of 11,799kt. During 2018, the highest number of CO_2 emissions were attributed by the transport sector, making up 40.7% of total CO_2 emissions in the City Region[15] During the same period, there was a 37% reduction in CO_2 emissions nationally, with a fall from 39,814kt to 25,195kt. Nationally, the biggest contributor to CO_2 emissions is the industry and commercial sector with 13,280kt (53%)[15].

Likely Evolution of the Baseline without the Adaptation Strategy

5.2.3. The UKCP18 headline findings project hotter drier summers, warmer wetter winters, increases in the frequency and intensity of extreme events, and an increase in sea level rise by the end of the 21st century across all areas the UK. Precipitation is of particular concern for Scotland, and although rainfall patterns across the UK will continue to vary on seasonal and regional scales, significant increases in hourly precipitation extremes[9] are expected. This will result in an increase in risk to the built environment, infrastructure assets and systems, and services in the region, which could cause financial, legal and reputational impacts, amongst others. The scale of this increase in risk will be dependent on the level of adaptation actions included in the Strategy, and the extent to which they lead to an overall increase in resilience.

5.2.4. Many of the City Region's infrastructure assets and services are located along the coast and riverbanks. Climate change is expected to cause sea level rise and increase the frequency and severity of storms and severe weather. Without the Strategy, these assets and services are at an increasing risk of damage from coastal flooding, erosion and extremes of heat. Appendix D presents data from the Third UK Climate Change Risk Assessment[16] for the Clyde and Loch

[11] The Clyde Marine Region area extends from the Normal Tidal Limit of the River Clyde in Glasgow City centre, seawards to the outer firth in Argyll and Ayrshire.
[12] Hansom et al, Dynamic Coast - National Coastal Change Assessment: National Overview, 2017
[13] Dynamic Coast - National Coastal Change Assessment: Cell 6 - Mull of Kintyre to the Mull of Galloway [online] available at: http://www.dynamiccoast.co.uk/files/reports/NCCA%20-%20Cell%206%20-%20Mull%20of%20Kintyre%20to%20the%20Mull%20of%20Galloway.pdf
[14] Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, [online] available at: https://www.legislation.gov.uk/asp/2019/15/contents/enacted
[15] Compiled using data from: Department for Business, Energy and Industrial Strategy, 2018 UK Greenhouse Gas Emissions, 2020, [online] Available at: https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-2016
[16] Third UK Climate Change Risk Assessment (CCRA3) Future Flood Risk Main Report. [online] available at: https://www.ukclimaterisk.org/wp-content/uploads/2020/07/Future-Flooding-Main-Report-Sayers-1.pdf

Lomond Region based on current levels of climate adaptation. The data shows various assets and services at risk in a scenario of four degrees of warming by 2080.

5.2.5. The scale of these future impacts will depend on the future global emissions pathways and the extent to which the low-carbon transition is successful , failing to consider climate risks to the low carbon transition, presents the potential for it to become more risky and costly. Scotland is committed to legally binding greenhouse gas emissions reduction targets of 34% by 2020 and 80100% by 204550, compared to 1990 levels[17].

5.2.6. These ambitious low-carbon transition targets also have the potential to introduce transition climate risks to the region, which are policy, technology, market and reputation risks resulting from responses to a changing climate. For example, changes to building efficiently regulations to help meet targets may require costly upgrades if not addressed in a timely manner. Therefore, the Strategy is also required to identify and manage these risks too.

Table 5-2 – Strategy Implications – Climatic Factors

Key Risks / Opportunities	Implications for the Strategy
▪ The extent of future climate change will be strongly affected by the amount of greenhouse gases emitted. ▪ Interdependent and cascading risks will be exacerbated by climate change. ▪ Opportunities exist for retro fitting of energy efficiency measures in the new and existing building stock. ▪ Potential for synergies and trade-offs between adaptation and mitigation options associated with the zero-carbon transition.	The Strategy will need to plan for and implement/facilitate climate change adaptation, in respect of rising temperatures and extreme weather events, particularly heavy rainfall/flooding and heat to maximise resilience. The Strategy should have a strong focus on managing climate risks associated with the net zero transition and should take account of synergies and trade-offs in overall development of approaches.

POPULATION AND HUMAN HEALTH

5.2.7. The City Region has a total population of 1,845,020, making up just over a third (34%) of Scotland's total population[18]. Of the eight local authorities making up the City Region, Glasgow City has the highest total population with 633,120 people[19].

5.2.8. By 2043 the population within the City Region is anticipated to increase by 2.3%, which is slightly higher than the national average of 2%[19]. The largest increase in population is anticipated to be in East Renfrewshire with an 11.9% rise, whilst the population in Inverclyde is anticipated to decrease by 15.2%. Decreases in population are also anticipated in North Lanarkshire (-1%) and West Dunbartonshire (-7.1%).

5.2.9. The highest proportion of people in the region are aged between 25–29 (7.7% of the total City Region), which is particularly high in Glasgow[1918]. The median age of City Region Population is 43 years, which is slightly higher than the national average of 42 years[20]. The median age for men in the City Region is 41.2 years and 44.5 years for women, both of which are higher than the national

[17] Climate Change (Emissions Reduction Targets) (Scotland) Act 2019
[18] National Records Scotland, Mid-2019 Population Estimates
[19] National Records Scotland, Population Projections for Scottish Areas (2018-based)
[20] National Records Scotland, Age and sex structure of administrative areas, Mid-2019 Population Estimates

averages (40.6 years and 43.4 years respectively).There is a slightly higher proportion of women living in the City Region compared to men (51.5% compared to 48.5%)[18].

5.2.10. The City Region comprises of an area of 3346km^2, with a population density of 551.4 people per km^2, which is significantly higher than the national average of 70 people per km^2 [21]. Glasgow City has the highest population density within the City Region with 3,624 people per km^2, whilst South Lanarkshire has the lowest population density with 181 people per km^2 [19].

5.2.11. Overall the ethnic make-up of the City Region is more diverse than the national average, with 10.9% of the population coming from Black, Asian or Minority Ethnic groups (BAME), compared to 7.9% nationally[22]. The population of the City Region is 94.4% white, 0.3% mixed ethnic, 4.0% Asian, 0.8% African and 0.2% Arab. Glasgow City is the most ethnically diverse of the eight local authority areas with 22.7% of the population identifying as BAME[20]. Conversely, Inverclyde is the least ethnically diverse with 2.5% of the population identifying as BAME[20].

5.2.12. Those most affected by climate change tend to be the very poorest, predominantly from BAME communities. This was evidenced during the 2016 High Court enquiry into the UK government's efforts to tackle air pollution, where it was indicated that white-British people are exposed to 14.9% less air pollution than other ethnic groups[23]. Socially vulnerable neighbourhoods are over-represented in areas prone to flooding (all sources), but most significantly in areas prone to coastal (and tidal) flooding[24].

5.2.13. Levels of overall deprivation across the City Region are varied. Of the eight local authority areas, Inverclyde is the most deprived (as well as the most deprived nationally), with 31.5% of its data zones[25] amongst the top 10% nationally, which is closely followed by Glasgow at 30.4%[26]. East Renfrewshire and East Dunbartonshire are the least deprived local authorities in the City Region, ranking 26th and 27th respectively, out of Scotland's 32 local authorities in terms of overall deprivation[22].

5.2.14. With regards to health deprivation, Inverclyde is the most deprived, with 31.5% of its data zones located amongst the top 10% of deprived areas nationally[21]. Again, this is closely followed by Glasgow City, with 30.4% of its data zones amongst the top 10% of deprived nationally, with regards to health. Similar to overall deprivation, East Renfrewshire and East Dunbartonshire are significantly less deprived with regards to health deprivation, with the highest number of data zones amongst the top 20% of least deprived nationally (57.38% and 50.77% respectively) ranking them first and second nationally[25].

5.2.15. The median life expectancy across the City Region for males is 76.4 years and 80.2 years for females, both of which are lower than the national averages which are 77.1 years for males and 81.1 years for females[27]. East Dunbartonshire and East Renfrewshire are the only local authorities that exceed the national averages for both males (80.1 years) and females (83.5 years)[25]. Glasgow City has the lowest life expectancy for males at 73.4 years, whilst West Dunbartonshire has the lowest for females at 78.8 years[27].

[21] National Records Scotland, Land area and population density by administrative area, Mid-2019 Population Estimates
[22] Scotland's Census, Table DC2101SC - Ethnic group by sex by age, 2011
[23] Noor, P, Climate justice is a black and white issue – so why isn't the environmentalist movement?, 2017, [online] available at: https://lacuna.org.uk/environment/climate-justice-black-white-issue-isnt-environmentalist-movement/
[24] Sayers, et al, Present and future flood vulnerability, risk and disadvantage, A UK Assessment, [online] available at: https://www.climatejust.org.uk/sites/default/files/Sayers%20et%20al%202017%20-%20Assessment%20Methodology.pdf
[25] The Scottish Index of Multiple Deprivation is a relative measure of deprivation across 6,976 small areas (called data zones)
[26] Scottish Index of Multiple Deprivation 2020, [online] available at: https://www.gov.scot/collections/scottish-index-of-multiple-deprivation-2020/
[27] National Records Scotland, Life Expectancy for Areas in Scotland, 2014-2016

5.2.16. The City Region is covered by two regional NHS boards; Lanarkshire (covering North and South Lanarkshire) and Greater Glasgow and Clyde (East and West Dunbartonshire, East Renfrewshire, Glasgow City, Inverclyde and Renfrewshire). The Public Bodies (Joint Working) (Scotland) Act (2014) created a number of new public organisations, known as integration authorities of which there are eight joint integration bodies across the City Region, one per local authority area), with a view to breaking down barriers to joint working between NHS boards and local authorities. It placed a requirement on NHS boards and local authorities to integrate health and social care budgets and identified nationally agreed outcomes and a requirement on partnerships to strengthen the role of clinicians and care professionals, along with the third and independent sectors, in the planning and delivery of services.

5.2.17. Health in the region is varied. In 2018, those describing their health as either good or very good was lower than the national average (73%) in both Greater Glasgow and Clyde and Lanarkshire at 70%[28]. Those describing their health as bad or very bad was higher than the national average in both Greater Glasgow and Clyde and Lanarkshire, at 10% compared to the national average of 8%[28].

5.2.18. Levels of physical activity are significantly[29] lower than the national average in Lanarkshire at 60% compared to 64% nationally[30]. Levels in Greater Glasgow and the Clyde are similar to the national average at 63%[28]. This pattern reflected when looking at the number of people classed as either overweight or obese, which is significantly higher than the national average (65%) in Lanarkshire (69%), whilst levels in Greater Glasgow and the Clyde are slightly lower than the national average at 63%[31].

5.2.19. The percentage of people in both Greater Glasgow and the Clyde and Lanarkshire, who have a limiting long-term illness is slightly higher than the national average (32%) at 33% and 35% respectively[32].

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5.2.20. Climate change impacts will not be spread equally across the Glasgow City Region with changes potentially exacerbating existing inequalities / levels of deprivation without the implementation of interventions to reduce the impacts of climate change.

5.2.21. By 2043 the population within the City Region is predicted to increase by 2.3%, with the largest growth predicted to be in the over 65s. A population with a larger proportion of older people would likely result in an increase in the number of people in the region with physical and sensory impairments which could result in a greater demand for access to health and social care services.

5.2.22. In many rural towns and villages and smaller urban cities and towns the most socially vulnerable are, on average, exposed to greater flood risk. In the future the most socially vulnerable, particularly in urban cities and towns are projected to experience disproportional increases in risk with the expected annual damages per person increasing by a factor of 2.5 on average but by 2.8 in the most socially vulnerable neighbourhoods[33].

5.2.23. Milder winters due to climate change are likely to reduce the risk of cold-related deaths but this has potential to be offset to an extent by hot days or heatwaves. Extreme increase in temperature associated with climate change has the potential to result in heat-health related issues, especially

[28] The Scottish Health Survey, 2018 - Self-assessed general health, Very good/Good, All adults, 2015-2018
[29] Significance has been determined by the ScotCen Social Research
[30] The Scottish Health Survey, 2018 - Physical activity, Meets recommendations, All adults, 2015-2018
[31] The Scottish Health Survey, 2018 - Overweight, Overweight (including obese), All adults, 2015-2018
[32] The Scottish Health Survey, 2018 - Long-term illness, Limiting long-term illness, All adults, 2015-2018
33 Third UK Climate Change Risk Assessment (CCRA3) Future flood risk Main Report Final Report prepared for the Committee on Climate Change, UK July 2020

for more vulnerable groups, e.g., the elderly or young people, with extreme heat also potentially impacting infrastructure, and the built and natural environment. Climate change can also increase the risk of transmission of diseases from invasion of new pests and pathogens. However, warmer summers may result in greater use of parks and greenspace and improved physical and mental health and wellbeing.

5.2.24. It is clear that climate change could present risks to public health and without the Strategy climate change may have a greater effect on the physical and mental health and wellbeing of the people of the City Region in the future.

Table 5-3 – Strategy Implications – Population and Health

Key Risks / Opportunities	Implications for the Strategy
▪ Over the next 30 years the population is anticipated to rise by 2.3%, with the greatest increase expected to be in the over 65s. ▪ With an increasing ageing population across the City Region, there is likely to be additional strain on the region's services and infrastructure. ▪ People could be vulnerable to an increase in the frequency and severity of severe weather. ▪ Increased risk to human health from disease and the invasion of new pests and pathogens. ▪ The worsening impacts of existing air pollution as a result of climate change are posing a risk to vulnerable groups like the elderly, children and those with chronic respiratory conditions or pre-existing medical conditions. ▪ Climate impacts may be greater for some socio economic groups as they may be less able to respond to and adapt to climate change leading to a further widening of the inequality gap across the City Region.	The Strategy should aim to reduce the impacts of climate change on the health, safety and wellbeing of the City Region's population. The Strategy should take into account the needs of all parts of society and increase understanding of the potential implications that climate change poses to human health and help to build resilience. Adaptation responses to climate change present opportunities to bring significant benefits to those populations at risk, as they are likely to be targeted in areas of the greatest level of risks and benefits. The Strategy should aim to lessen any widening of inequality impacts due to the effects of climate change on more deprived areas.

BIODIVERSITY

5.2.25. There is a large range of regionally, nationally and locally designated sites within the Glasgow City Region including:

- Loch Lomond and the Trossachs National Park;
- 137 Sites of Special Scientific Interest (SSSI);
- 31 Local Nature Reserves (LNR);
- 12 National Nature Reserves (NNR);
- 17 Country Parks;
- 6 Important Bird Areas.

5.2.26. In addition to these, there are numerous internationally designated sites within the City Region, outlined below in **Table 5-3**. **Figure 5.1** within Appendix A shows the locations of the designated sites within the City Region.

Table 5-4 – Internationally Designated Sites

RAMSAR	Special Areas of Conservation (SAC)	Special Protection Areas (SPA)
Loch Lomond Inner Clyde	Black Loch Moss Braehead Moss Clyde Valley Woods Coalburn Moss Cranley Moss Loch Lomond Loch Lomond Woods North Shotts Moss Waukenwae Moss West Fannyside Moss Red Moss	Black Cart Loch Lomond Renfrewshire Heights Slamannan Heights Muirkirk and North Lowther Uplands Inner Clyde

5.2.27. In addition, local authorities have identified a number of designated Local Nature Conservation Sites (LNCS) which include sites of Importance for Nature Conservation (SINCs), Listed Wildlife Sites (LWSs) and Local Geodiversity Sites.

5.2.28. Forests, woodlands and trees make an important contribution to the region's biodiversity. There are approximately 56,850 hectares of woodland within the City Region, making up 16.7% of total City Region area[34]. The woodland within the City Region includes 14,691 hectares of native woodlands[35], making up 3.5% of the total City Region area and 21% of the City Region's total woodland[35]. The native woodland networks of the City Region are internationally important for their biodiversity value and provide some of the best ancient and semi-natural woodlands in lowland Scotland[36]. **Figure 5.2** within Appendix A shows the region's woodland.

5.2.29. Within the region, some areas of productive forestry were planted on ancient, semi-natural and long established woodland sites, replanting with native or non-native species, which has resulted in the degradation in ecological value of these ancient woodland sites. The remaining ancient woodland sites within the City Region are few in number and largely fragmented, with some being felled and replanted, occasionally with non-native species.

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5.2.30. Studies such as the 'State of Nature 2016' report and Defra's 25 Year Environment Plan[37] have shown that national biodiversity has been declining despite the prevalence of conservation efforts, and approximately 13% of all species across the UK are under threat of extinction. The declining trend in the provision of many ecosystem services reported in the UK National Ecosystem Assessment is expected to continue – in part due to the continuing deterioration, loss and fragmentation of habitats[38].

5.2.31. Many species and habitats both nationally and in the City Region are already under considerable pressure from urban development, transport and agriculture. Many habitats have already

[34] Derived from the National Forest Inventory Scotland 2013 and the Native Woodland Survey of Scotland 2014
[35] Climate Ready Clyde, Technical Note, Theme 4 – Natural Environment and Natural Assets [online] available at:https://static1.squarespace.com/static/5ba0fb199f8770be65438008/t/5c6e8619f9619aea294ea01a/1550747167482/16+Technical+-+Natural+Environment.pdf
[36] Clyde Plan, Strategic Development Plan, Forest and Woodland Strategy, 2015 [online] available at: https://www.clydeplan-sdpa.gov.uk/docman/current-plan-july-2017-background-reports/70-background-report-12-forestry-and-woodland-strategy/file
[37] HM Government. 2018. A Green Future: Our 25 Year Plan to Improve the Environment Annex 1: Supplementary evidence report [online] available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/673492/25-year-environment-plan-annex1.pdf
[38] UK National Ecosystem Assessment (2011) The UK National Ecosystem Assessment Technical Report. UNEP-WCMC

fragmented, and their nature has been altered. Connected habitats, and larger habitats, increase the potential for species and the habitats and resources they depend on to migrate and adapt together. Such circumstances could also facilitate the spread of invasive species and pests[39].

5.2.32. Biodiversity is also under threat from climate change, with changing temperatures and extreme weather events resulting in the loss, degradation and movement of species and habitats. Increased frequency and severity of summer drought and in particular wildfires could be a particular threat to woodlands, with sensitive tree species on shallow freely draining soils[39].

5.2.33. Sea level rise could see significant alterations and erosion to coastal habitats and landforms such as beaches, saltmarshes and mudflats. This is likely to be further exacerbated by 'coastal squeeze' from coastal developments, which could impede the potential for coastal habitats to shift further up the shore. Rising water temperatures in rivers, lochs and the sea could also affect the suitability of the habitat for certain species. Those colder adapted species may seek to move further north, however some may be limited in their ability to migrate.

5.2.34. Without the Adaptation Strategy, the current negative effects on biodiversity are likely to continue, and without further intervention and some of the region's most important biodiversity and ecosystem services may be lost.

Table 5-5 – Strategy Implications – Biodiversity

Key Risks / Opportunities	Implications for the Strategy
▪ There are a wide range of statutory local, national and international sites designated for nature conservation in the City Region, which could be affected by increased levels of development, in order to support population growth. ▪ Biodiversity is also under threat from climate change, with changing temperatures and extreme weather events such as flooding, drought and wildfires resulting in the loss, degradation and movement of species and habitats. ▪ Protecting existing and creating new woodland can help to increase resilience to climate change as well as creating and protecting ecological networks. However, increased frequency and severity of summer drought and wildfires as a result of climate change, could be a particular threat to woodlands. ▪ Spread of non-native species across the City Region without appropriate controls.	The Strategy should mitigate the effects of climate change and the potential impacts it could have on biodiversity, natural capital assets and the ecosystem services they provide. The Strategy should promote actions to avoid fragmentation and impacts for wildlife and habitats. Both native and ancient woodland should be managed to conserve important biodiversity and heritage features. The Strategy should help promote the restoration of ancient, native and semi-natural woodland, in line with the Clyde Plan Forestry and Woodland Strategy[34].

[39] The Woodland Trust. 2011. The State of the UK's Forests, Woods and Trees [online] available at: https://www.woodlandtrust.org.uk/publications/2011/11/state-of-uk-forests/

LANDSCAPE

5.2.35. Loch Lomond and the Trossachs National Park (LLTNP) and the Loch Lomond National Scenic Area (NSA) are located in the north-west of the City Region in the local authority of West Dunbartonshire (as well as Argyll and Bute and Stirling). This is shown in **Figure 5.3** in Appendix A.

5.2.36. The special qualities of the LLTNP and the NSA have been defined by Scottish Natural Heritage[40] as the following:

- General qualities:
  - A world-renowned landscape famed for its rural beauty;
  - Wild and rugged highlands contrasting with pastoral lowlands;
  - Water in its many forms;
  - A rich variety of woodlands;
  - Settlements nestled within a vast backdrop;
  - Famous through-routes;
  - Tranquillity; and
  - The easily accessible landscape splendour.
- Loch Lomond:
  - Two lochs in one;
  - Immensity of loch and landscape;
  - A multitude of beautiful islands;
  - Distinctive mountain groups;
  - Ben Lomond, widely known, popularly frequented;
  - Banks of broadleaved woodland; and
  - Peaceful side glens.

5.2.37. There are also 17 Country Parks located within the City Region. These are areas of public green spaces, which are often located often at the edge of urban areas, that provide places to enjoy the outdoors and experience nature in a semi-rural park setting.

5.2.38. **Figure 5.3** also shows the core paths and national cycleways located within the City Region. In total there are 2796km of core paths and 579km of national cycleways. The most notable are:

- National Cycle Network Routes 7, 74, 75, 753 (north), 754, 755 and 756;
- Lochs & Glens North Cycle Route;
- The West Highland Way;
- Loch Lomond and Cowal Way
- Clyde Walkway;
- Three Lochs Way;
- John Muir Way;
- Forth and Clyde/Union Canal Towpath; and
- Southern Upland Way.

[40] Scottish Natural Heritage, The Special Landscape Qualities of the Loch Lomond and The Trossachs National Park, Commissioned Report No. 376, 2010, [online] available at: https://www.nature.scot/sites/default/files/2017-07/Publication%202010%20-%20SNH%20Commissioned%20Report%20376%20-%20The%20Special%20Landscape%20Qualities%20of%20the%20Loch%20Lomond%20and%20The%20Trossachs%20National%20Park.pdf

5.2.39. The City Region is covered by 68 landscape Character Areas as shown in **Figure 5.4** in Appendix A. In addition, the City Region has two National Coastal Character Areas – The Outer Firth and Islands and the Developed Inner Firths.

5.2.40. Local Landscape Areas (LLA) are local authority landscape designations, identified in local development plans and local policy. Also known in some authority areas as Special Landscape Areas or Areas of Great Landscape Value. Within the Study Area, there are local landscape designations in West Dunbartonshire, East Dunbartonshire, North Lanarkshire and South Lanarkshire. These are listed below:

- West Dunbartonshire – Kilpatrick Hills.
- East Dunbartonshire – Campsie Fells; Glazert Valley; Bardowie, Baldernock & Torrance; Kilpatrick Hills; and Bar Hill.
- North Lanarkshire – Kilsyth Hills; and Clyde Valley.
- South Lanarkshire – Lower Clyde and Calderglen; Middle Clyde Valley; Upper Clyde Valley and Tinto; Douglas Valley; Pentland Hills and Blackmount; and Leadhills and Lowther Hills.

5.2.41. In total, the City Region has 50,867 hectares (ha) of greenspace, of which 73% (37,365 ha) is accessible[41]. On average there is 34ha of greenspace per 1000 people living in the region, however, this is varied across the City Region[43]. **Table 5-6** below shows the amount of greenspace across the local authorities that make up the City Region.

5.2.42. North Lanarkshire has the highest total amount of greenspace at 12,995ha, whilst East Renfrewshire has the lowest at 2,569ha. Considering the area of greenspace per 1,000 population, Glasgow has the lowest at 16ha, whilst North Lanarkshire has the highest at 42ha.

Table 5-6 – Greenspace[43]

Local Authority	Total Area of Greenspace (ha)	Area of publicly Accessible Greenspace (ha)	Area of greenspace per 1000 people (ha)
East Dunbartonshire	3,880	2,628	39
East Renfrewshire	2,569	1,538	29
Glasgow City	9,647	6,709	16
Inverclyde	3,126	2,439	40
North Lanarkshire	12,995	10,248	42
Renfrewshire	5,886	4,416	35
South Lanarkshire	9,421	6,733	34
West Dunbartonshire	3,343	2,654	37
City Region	**50,867**	**37,365**	**34**

5.2.43. A review of the Scottish Vacant and Derelict Land Survey (SVDLS) - Site Register 2019[42] has identified that across the City Region there is a total of 3,399ha of vacant / derelict land with North

[41] Greenspace Scotland, The Third State of Scotland's Greenspace Report, 2018 [online] available at: https://drive.google.com/file/d/1aQLMu60G5WRi4QKBCuZJ92oT8eM2sxd3/view

[42] https://www.gov.scot/publications/scottish-vacant-and-derelict-land-survey---site-register/

Lanarkshire having the greatest amount with 1396.5ha. **Table 5.7** below sets out the amount of vacant and derelict land by local authority region.

Table 5-7 – Vacant and Derelict Land

Local Authority	Total Area of vacant / derelict land (ha)
East Dunbartonshire	69.1
East Renfrewshire	49.8
Glasgow City	954.5
Inverclyde	151.4
North Lanarkshire	1,396.5
Renfrewshire	230.8
South Lanarkshire	384.4
West Dunbartonshire	163.3
City Region	**3,399.8**

Likely Evolution of the Baseline without the Adaptation Strategy

5.2.44. Landscape character and quality is under particular threat from future development through, for example, loss of tranquillity, increased lighting (particularly into dark night skies), visual intrusion, and the incremental loss of landscape features and characteristic elements.

5.2.45. Climate change has the potential to have negative impacts on the City Region's landscape character. Rock exposures and landforms, as well as the dynamics of the landform processes that shape the City Region's marine and terrestrial landscapes have potential to change region's landscape, through sea level rise, coastal and fluvial erosion, flooding and drought.

5.2.46. Without the Strategy, the impacts of climate change may not be as well managed across the City Region, placing the landscape at greater risk from flooding, erosion and sea level rise. This could lead to the degradation of the City Region's landscape character and loss of valuable green infrastructure.

Table 5-8 – Strategy Implications – Landscape

Key Risks / Opportunities	Implications for the Strategy
▪ Future population growth across the City Region could risk compromising landscape character and key features with development potentially resulting in reduced greenspace (including areas with potential for use as natural flood management). However, a landscape-led design with green infrastructure principles in place, could play a key role in the enhancement of the natural environment, visual amenity and physical and mental health of its people. ▪ Creating further access to the green / blue space can greatly improve health and wellbeing, help combat air pollution, provide storm water management, reduce flooding and provide connectivity for wildlife. ▪ The land within the City Region is likely to continue to change into the future. The scale of climate change and the adaptation measures taken could be influential in this change.	The Strategy should promote resilient landscapes, protect designated landscape areas and landscape character and help increase access to green and blue spaces.

CULTURAL HERITAGE

5.2.47. There are currently six UNESCO World Heritage Sites (WHS) located in Scotland, of which two are located within the City Region – the Antonine Wall and New Lanark. All WHS's are considered to be of 'Outstanding Universal Value', which have been inscribed on the World Heritage List by the World Heritage Committee. World Heritage status is a high accolade that brings international scrutiny.

5.2.48. There are a number of designated assets throughout the City Region including[43]:

- 371 Scheduled Monuments;
- 8,209 Listed Buildings;
- 19 Properties in Care;
- 5 Inventory Battlefield; and
- 22 Garden and Designed Landscapes.

5.2.49. **Figure 5.5** within Appendix A provides detail on the location of these heritage assets.

5.2.50. Conservation Areas are areas of distinctive character which have been considered to have a special value due to their architectural, townscape and landscape qualities. Local authorities are required to identify areas which are of special architectural or historic interest which they wish to preserve or enhance which are designated as Conservation Areas.

5.2.51. The City Region has 103 Conservation Areas, the highest number of which are located within South Lanarkshire with 30 designations. **Table 5-9** below shows the split of Conservation Areas across the eight local authority districts.

[43] Historic Environment Scotland, Historic Environment Portal [online] available at: http://portal.historicenvironment.scot/

Table 5-9 – Conservation Areas[44]

Local Authority	Conservation Areas
East Dunbartonshire	14
East Renfrewshire	5
Glasgow City	25
Inverclyde	8
North Lanarkshire	7
Renfrewshire	8
South Lanarkshire	30
West Dunbartonshire	6
City Region	103

5.2.52. In addition to conservation areas, local authorities hold Historic Environment Records, which record undesignated archaeological and cultural heritage assets. The majority of the historic environment in Scotland is undesignated (90–95%) and often these sites provide important contextual information, which aids in the understanding of designations[45].

Likely Evolution of the Baseline without the Adaptation Strategy

5.2.53. Protection of the historic environment is firmly embedded in national and local planning policy. This policy has developed independently of the European Union and is unlikely to change in the near future.

5.2.54. However, whilst direct (physical) impacts on designated historical sites are strongly restricted, adverse effects on the Setting of designated heritage assets does still occur, for example relating to visual intrusion, or aspects such as traffic, lighting and noise. This can be a sensitive planning issue.

5.2.55. Climate change poses a significant threat to the historic environment, including undiscovered and undesignated heritage assets. Increased warmth may encourage a rise in the number of invasive plant and animal species, which could change the character of historic and designed landscapes by reducing numbers of or killing off native flora and fauna. Hotter, drier conditions may also increase the risk of fire as well as soil shrinkage, which can lead to building subsidence, structural deformation and building collapse.

5.2.56. More extreme rainfall events and increase levels of flooding have potential to increase the of flood risk to historic buildings. Water saturation can damage historic buildings and designed landscapes, particularly if standing water conditions persist.

5.2.57. Historic Environment Scotland has devised a Climate Action Plan[46] which aims to protect Scotland's historic places and landmarks, as well as the landscapes and infrastructure that support them, from the effects of climate change. Furthermore, recent work by on a Climate Vulnerability Index (CVI) assessment at the Heart of Neolithic Orkney WHS is recommended to be applied to other heritage

[44] Historic Environment Scotland, Conservation Areas [online] available at: https://portal.historicenvironment.scot/downloads/conservationareas

[45] Historic Environment Scotland (2016), Scotland's Historic Environment Audit 2016 – Summary [online] available at: https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationid=bac8296b-fcd4-4fdf-8617-ab9e009235db

[46] Historic Environment Scotland, Climate Action Plan 2020-2025, [online] available at: https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=94dd22c9-5d32-4e91-9a46-ab6600b6c1dd

sites across Scotland to assesses the threat that climate change poses to all types of heritage sites. In the absence of the Strategy, it is likely that this would provide some protection to the City Region's cultural heritage, however, the Strategy is likely to provide a more localised focus.

Table 5-10 – Strategy Implications – Cultural Heritage

Key Risks / Opportunities	Implications for the Strategy
▪ Future growth across the City Region has the potential to affect the survival, fabric, condition and Setting of cultural heritage assets (both above and below ground). ▪ An increase in rainfall, extreme weather events and flooding may result in irreplaceable damage, degradation and/or erosion of heritage and archaeological sites. ▪ Both noise and air pollution can adversely affect both listed buildings and scheduled monuments and their Setting.	The Strategy should promote the management and maintenance of historic and cultural assets and improve the climate resilience of cultural sites, ensuring the maintenance of distinctive characteristics. The Strategy should aim to enhance the understanding and appreciation of the significance of heritage assets.

WATER ENVIRONMENT

5.2.58. **Figure 5.6** in Appendix A shows the main water bodies within the City Region. In total the City Region's watercourses span 2,161km and waterbodies occupy 4449ha.

5.2.59. The City Region falls within Scotland's single River Basin District (RBD) which was created via the Scotland RBD designation order[47]. Of those water bodies that fall within the City Region, 6% of the water bodies and 83% of its protected areas are currently assessed as being in a good or better condition[48].

5.2.60. SEPA produce annual Water Framework Directive classifications for all the water bodies in Scotland. Surface water bodies are classified using a system of five quality classes; bad; poor; moderate; good and high, whilst groundwater is either graded as 'poor' or 'good'.

5.2.61. **Table 5-11** below shows the number of aquatic classifications of both groundwater and surface water bodies within the City Region. Over a quarter (44) of the City Region's surface water bodies are classed as either 'bad' or 'poor', whilst 69 (41%) are achieving either 'good' or 'excellent' status. The majority of the City Region's groundwaters are classed as good (51).

Table 5-11 – City Region Groundwater and Surface Water Quality (2018)[49]

Waterbody Type	Bad	Poor	Moderate	Good	High
Surface Waters	8	36	56	66	3
Groundwaters	n/a	19	n/a	51	n/a

5.2.62. At present, 9km^2 of land in the City Region is currently at risk of coastal flooding, whilst 92km^2 of land is at risk of fluvial flooding[50]. In addition, there are 22,400 residential properties in the Clyde and Loch Lomond Local Plan District Area that are at risk of flooding from river, coastal and surface

[47] The Water Environment and Water Services (Scotland) Act 2003 (Designation of Scotland River Basin District) Order 2003
[48] Climate Ready Clyde, Technical Note, Theme 4 – Natural Environment and Natural Assets
[49] SEPA, Aquatic Classification, Water Classification Hub [online] available at: https://www.sepa.org.uk/data-visualisation/water-classification-hub/
[50] Climate Ready Clyde, Technical Note, Theme 4 – Natural Environment and Natural Assets

water flooding[51].**Table 5-12** below shows the number of residential properties at risk of flooding from each source. This shows that surface water poses the greatest risk (11,000 homes), however, fluvial flooding cost more each year in damages (£13 million).

Table 5-12 – Flood Risk by source[51]

Source	Number of Homes	Average annual damages
Fluvial (River Clyde)	7,800	£13 million
Coastal	3,600	£5.2 million
Surface Water	11,000	£9.4 million
Total	22,400	£27.6 million

5.2.63. A review of the SEPA Flood Map[52] identifies that the Clyde Estuary and the coastline around Inverclyde, Renfrewshire and East Dunbartonshire are at high risk of future coastal flooding. The River Clyde presents a high risk of flooding particularly in Renfrewshire, Glasgow and both North and South Lanarkshire. Douglas Water, Loch Lomond, the River Leven, Forth and Clyde Canal and the River Kelvin all present a high risk of future flooding.

5.2.64. Potentially Vulnerable Areas (PVAs) are described as areas where significant flood risk exists now or is likely to occur in the future. The identification of PVAs is vital for the protection of people, properties, businesses, infrastructure and the environment from flooding. There are 23 PVAs located within the Clyde and Loch Lomond Local Plan District. CRC's assessment of SEPA's PVAs identifies 65,250 people at risk from a 1 in 200-year flood event (from all sources), although these figures do not currently include an uplift for climate change[53].

5.2.65. Glasgow and surrounding areas are highly urbanised and therefore pose the greatest risk from surface water flooding in the Clyde and Loch Lomond Local Plan District. Approximately 98% of all properties at risk of surface water flooding in the Clyde and Loch Lomond Local Plan District are located within Potentially Vulnerable Areas.

Likely Evolution of the Baseline without the Adaptation Strategy

5.2.66. At present, periods of dry weather and periods of flooding already lead to increased risks to the water environment, however, climate change is likely to further exacerbate this issue. Warmer air and sea temperatures as well as extreme weather associated with climate change may increase the intensity and severity of storms, which can lead to increased flooding and erosion, and can adversely affect transport infrastructure, people, property and access to greenspaces.

5.2.67. Future development in response to population growth across the City Region could have an adverse effect on land use leading to a reduction in land available for natural flood management and the introduction of more hard standing sealed surfaces, which could exacerbate the frequency and severity of flood events.

5.2.68. Rising sea-levels could see a further loss of land to the sea as well as decreasing functionality of existing drainage systems. With sea level rise, the differential levels between on land sewage

[51] Climate Ready Clyde, Technical Note, Theme 2 – Built Environment
[52] SEPA Flood Map [online] available at: http://map.sepa.org.uk/floodmap/map.htm
[53] Climate Ready Clyde, Technical Note, Theme 3 - Society and Human Health [

drainage systems and the sea level are likely to be reduced, which could result in impacts on the drainage system.

5.2.69. The water cycle is likely to be altered by climate change, which may increasingly affect demands on water resources and could increase the risk of water scarcity. Maintaining water supplies may pose a significant challenge across the City Region, which may be exacerbated by population growth. Under current population and water supply projections Scotland maintains a surplus supply-demand balance until the end of the century. However, without additional demand-side adaptation action there may be potential for deficits in supply[54].

Table 5-13 - Strategy Implications – Water Environment

Key Risks / Opportunities	Implications for the Strategy
▪ The physical and chemical quality of water resources is an important aspect of the natural environment and can be adversely affected by pollution generated by climate-induced increases in rainfall intensity and catchment erosion. ▪ There is a need to plan for and implement/facilitate climate change adaptation, in respect of water scarcity and extreme weather events, particularly heavy rainfall/flooding. ▪ Increased development can increase flood risk on a local and regional scale. ▪ Climate change is likely to increase the occurrence of flooding from all sources and hence raise the flood risk. This has potential to have subsequent effects on overall water quality. ▪ More intense summer rainfall events pose a significant risk of damaging infrastructure, particularly transport networks, and generating severe disruption.	The Strategy should aim to protect and improve the water environment particularly in relation to flood risk, erosion, surface water management and water quality.

AIR QUALITY

5.2.70. In November 2015, the Scottish Government published Cleaner Air for Scotland – The Road to a Healthier Future (CAFS)[55] which is Scotland's first separate air quality strategy. This strategy sets out in detail how Scotland intends to deliver air quality improvements over the coming years. Since CAFS was published, Scotland's first Low Emission Zone was introduced in Glasgow in 2018. It initially sets phased targets for Euro VI compliance for local buses, but upon full implementation in December 2022 it would require all vehicle types to be fully compliant.

5.2.71. According to the 2017 Greenhouse Gas Inventory[56], transport (including international aviation and Shipping) (14.9MtCO2e) was the largest source of net emissions followed by agriculture and related land use (9.7 MtCO2e) and Business and industrial process (8.7 MtCO2e).

[54] HR Wallingford, Updated projections of future water availability for the third UK Climate Change Risk Assessment, Technical Report, [online] available at: https://www.ukclimaterisk.org/wp-content/uploads/2020/07/Updated-projections-of-future-water-availability_HRW.pdf

[55] The Scottish Government, Cleaner Air for Scotland, The Road to a Healthier Future, 2015, [online] available at: http://www.scottishairquality.scot/lez/#:~:text=Cleaner%20Air%20for%20Scotland%20%2D%20The,responsibilities%20as%20soon%20as%20possible.

[56] Scottish Government, Scottish Greenhouse Gas Emissions 2017 [online] available at: https://www.gov.scot/publications/scottish-greenhouse-gas-emissions-2017/pages/3/#:~:text=In%202017%2C%20road%20transport%20was,in%20the%20efficiency%20of%20vehicles.

5.2.72. Where air quality objectives are not likely to be achieved, an Air Quality Management Area (AQMA) must be declared. These are predominantly associated with vehicle emissions, principally NO_x, although some have been declared for PM_{10}. As such, AQMAs are mostly located within urban areas and sections of the road network which are heavily trafficked and frequently congested.

5.2.73. There are 16 AQMAs (refer to **Figure 5.7**) located within the City Region located in the following local authorities[57]:

- East Dunbartonshire – 3 (NO_2 and PM_{10}).
- Glasgow City - 3 (NO_2).
- North Lanarkshire – 4 (PM_{10}).
- Renfrewshire – 3 (NO_2 and PM_{10}).
- South Lanarkshire – 3 (NO_2 and PM_{10}).

5.2.74. A Defra statistical release in April 2019[58] focussed on trends in NO_2, particulate matter and ozone between 1987 and 2018. It revealed that roadside NO_2 pollution has reduced in the long-term and in recent years, having been stable for most of the 2000s. However, Scotland is yet to achieve full compliance with the EU and Scottish legal requirements for air quality.

5.2.75. Despite lower levels of air pollution, it still poses significant harm to human health and the environment. Poor health caused by air pollution often highlights health inequalities with the more vulnerable members of the population disproportionately affected.

5.2.76. In the UK, the impact of poor air quality on health has been estimated to cost around £15 billion per year, whilst in Scotland in 2010 fine particulate matter was associated with around 2,000 premature deaths and around 22,500 lost life-years across the population[59]. In the City Region, air pollution in 2010 was estimated to be accountable for 800 attributable deaths, equivalent to 8,674 life years lost for those over 25 in Glasgow City Region. The majority of these were in Glasgow, North Lanarkshire and South Lanarkshire[60].

Likely Evolution of the Baseline without the Adaptation Strategy

5.2.77. The number of vehicles on the roads is likely to increase as the population rises, putting air quality at further risk of degradation. More severe and frequent heat episodes (associated with the changing climate) can also worsen air quality, and therefore asthma, respiratory diseases and allergic reactions, without further intervention.

5.2.78. The creation of Low Emission Zones in Scotland aim to improve air quality and would help to address sources of and exposure to air pollution in the future.

5.2.79. Improved engines and emission standards have helped bring about the reductions in NO_X emissions seen in recent decades. The use of catalytic convertors aided the decline in emissions of non-methane volatile organic compounds (NMVOCs) and the reduction of sulphur in fuels has contributed to a decline in SO_2 emissions from the transport sector. However, despite tighter emissions standards a rise in diesel vehicle numbers together with overall increases in volumes of traffic has held back further improvements[61].

[57] Air Quality in Scotland, Air Quality Management Areas, [online] available at: http://www.scottishairquality.scot/laqm/aqma
[58] Defra. 2019. Defra National Statistics Release: Air Quality statistics in the UK 1987 to 2018
[59] The Scottish Government, Cleaner Air for Scotland, The Road to a Healthier Future, 2015, [online] available at: http://www.scottishairquality.scot/lez/#:~:text=Cleaner%20Air%20for%20Scotland%20%2D%20The,responsibilities%20as%20soon%20as%20possible.
[60] Climate Ready Clyde, Technical Report – Society and Human Health, 2019 [online] available at: https://static1.squarespace.com/static/5ba0fb199f8770be65438008/t/5c6e83f09b747a469b099b04/1550746619005/12+Technical+-+Society.pdf
[61] Defra (2018). The state of the environment: air quality. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/729820/State_of_the_environment_air_quality_report.pdf

5.2.80. Without the Strategy it is likely that the national and international targets could continue to be worked towards, however, more localised air quality issues may be overlooked.

Table 5-14 – Strategy Implications – Air Quality

Key Risks / Opportunities	Implications for the Strategy
▪ More severe and frequent heat episodes as a result of climate change can contribute to the worsening of air quality. ▪ Nitrogen pollution can cause the release of the potent greenhouse gas nitrous oxide to the atmosphere, contributing further to climate change. ▪ The number of vehicles on the roads is likely to increase as the population rises, putting air quality at further risk of degradation ▪ The Scottish Government's plan to phase out the sale of all new conventional petrol and diesel cars and vans by 2032 and support for work and home-based electric charging facilities, could promote use of hybrid and electric vehicles, with positive effects for air quality. ▪ Future electricity, heat, transport and industrial policies could work together improve air quality and tackle climate change.	The Strategy should work towards reducing the impacts of poor air quality on the population's health in order to reduce the additional risk posed by climate change. The Strategy should support national and local policies and targets that aim to reduce emissions and improve air quality making sure the City Region is more prepared for the impacts on air quality from climate change. The Strategy should recognise the impact of climate change on air quality and support the delivery of air quality management measures.

MATERIAL ASSETS (INC. SOIL RESOURCES)

5.2.81. **Figure 5.9** in Appendix A shows the City Region's important geological sites. In total there are 34 geological SSSIs and a further 24 mixed SSSIs located in the City Region that are designated for their geological significance. In addition, there are 46 Geological Conservation Review Sites. These are sites that are of national and international importance that demonstrate key scientific elements and display sediments, rocks, fossils, and features of the landscape that make a special contribution to understanding the geological history of Britain.

5.2.82. The Land Capability for Agriculture Classification (LCA)[62] across the City Region is varied. Areas of South Lanarkshire and East Renfrewshire are dominated by rough grazing land (classes 6.1–7)[63], which are only capable of rough grazing due to severe physical limitations. More productive land capable of supporting mixed agriculture (classes 3.2–4.2) are located along the banks of the Clyde, across valley bottoms and the fringes of the urban areas of Glasgow, Lanark and Motherwell. There are some very small patches of prime agricultural land (classes 1–3.1) located in Inverclyde and East Dunbartonshire.

5.2.83. The soils found in the City Region tend to be waterlogged and have a high organic matter content/carbon rich. There are 337,122ha of carbon rich soils within the City Region[64]. Carbon rich

[62] The James Hutton Institute, Land Capability for Agriculture Classification [online] available at: https://www.hutton.ac.uk/learning/exploringscotland/land-capability-agriculture-scotland
[63] There are thirteen classes and divisions of the LCA system have been simplified into four categories: Arable Agriculture 1-3.1, Mixed Agriculture 3.2–4.2, Improved grassland 5.1-5.3 and Rough grazing (6.1-7). The lower the class number the higher the quality of agricultural land.
[64] Scottish Natural Heritage, Carbon and Peatland Map, 2016 [online] available at: https://map.environment.gov.scot/Soil_maps/?layer=10

soils can be acidic, with low inherent fertility, often supporting a range of nutrient poor habitats such as: rough grass, improved grass, peatland, woodland and some heather moorland. Despite this, there are some productive brown earth soils in the Hamilton and Lanark areas.

5.2.84. The City Region has 8,705km of roads, comprising 515km of trunk roads, and 8,191km of local authority roads[65]. The most notable roads are, M8, M73, M74, M77, M80, A82, A71, A73. In addition, the City Region has 2796km of core paths and 579km of national cycleways.

5.2.85. The City Region is well served by rail, connecting the City Region to Edinburgh, the Highlands, Northern Scotland as well as England. The main lines include the Glasgow South Western Line, InterCity Mainlines, Ayrshire Coastline, West Highland Line, Edinburgh and Glasgow local services and the Caledonian Line as well as the Glasgow Subway.

5.2.86. The Clydeport terminals at Glasgow and Greenock, along with sites outside the Glasgow City Region at Ardrossan and Hunterston, together process 5.4 million tonnes of cargo a year[59]. Clydeport is home to some of the biggest, deepest, busiest and most advanced facilities in Europe[66]. In addition the City Region is served by Glasgow International Airport which has over 9 million terminal passengers each year and 84,000 aircraft landings and take-offs[59].

5.2.87. The Scottish Government have committed to 50% of Scotland's energy being from renewable sources by 2030, with the aim of decarbonising the energy system almost completely. During the first quarter of 2020, 11,891Mega watts (MWs) of renewable energy capacity were installed across the country, which was predominantly provided by onshore wind and large scale hydropower, but also included technology such as biomass, solar photovoltaics and sewerage sludge digestion[67].

5.2.88. Across the City Region there are 39 planned renewable energy projects, either in the planning stages, consented and awaiting construction or currently under construction. Once completed, these would provide an additional 864MW capacity to the City Region[68]. Of the eight local authorities, South Lanarkshire has the highest number of proposed developments with 21, followed by North Lanarkshire with 12. The majority of the projects are for onshore wind (31), however, proposals also include advanced conversion technologies (2), energy from waste incineration (1), anaerobic digestion (1) and solar photovoltaics (4)[68].

5.2.89. In 2017, the City Region generated 791,728 tonnes of waste, making up 32% of the total waste generated nationally[69]. Of the total waste generated, 41.6% of the waste was recycled, which is slightly lower than the national average of 45.5%. An additional 6.9% of the total waste generated was diverted from landfill via other means other than recycling[70].

Likely Evolution of the Baseline without the Adaptation Strategy

5.2.90. At present, 391km of the City Region's road network is at risk of surface water flooding, including the M73, M8, M80 and M74, and an additional 32.7km are at risk of river flooding[59]. Surface water also poses a huge risk to the rail network, with 127km of railways at risk of a 1 in 200-year flood event, 16.5km are at risk of river flooding and 2.8km of the railway lines are at risk of coastal flooding[65].

5.2.91. Climate change could result in an increase in extreme weather events, sea level rise and fluvial and coastal erosion, which could put the City Region's transport infrastructure at further risk of flooding. In addition to major transport infrastructure, active travel modes such as core paths and national

[65] Climate Ready Clyde, Technical report, Theme 1 – Infrastructure
[66] Peel Ports, Clyde Port [online] available at: https://www.peelports.com/port-locations/clydeport
[67] Scottish Government, Minister for Energy, Connectivity and the Islands, Renewable and low carbon energy [online] available at: https://www.gov.scot/policies/renewable-and-low-carbon-energy/
[68] Renewable Electricity Planning Statistics for Scotland, March 2020
[69] SEPA, Household Waste Statistics, 2018, [online] available at: https://www.sepa.org.uk/environment/waste/waste-data/waste-data-reporting/household-waste-data

cycleways could be at risk from climate change with flooding, erosion and extreme heat events potentially affecting material assets across the City Region.

5.2.92. The City Region's soils may also be at risk from climate change. Both temperature and rainfall can influence the input of organic matter via photosynthesis and its subsequent decomposition through microbial activity. Increased levels of rainfall may result in waterlogging, whilst extreme heat may lead to cracking and compaction. This may lead to increases in erosion, soil loss and landslides with potential for associated impacts to material assets including transport infrastructure. Future development across the City Region could have an adverse effect on peatland leading to the release of stored carbon. With a growing population, a reduction in productive land may make it increasingly difficult to grow local produce to support the City Region's population.

5.2.93. The growing capacity of renewables in the region should translate into variability in energy generation potential and an increase in renewable electricity output in the future. This should support the national renewable energy and decarbonisation targets. As the proportion of renewable electricity grows it should displace the need to generate electricity from fossil fuels, and subsequently reduce total carbon emissions.

5.2.94. The growing population and associated need for development are also likely to increase use of mineral resources and waste generation. As such, it would be necessary to apply resource efficiency and waste management measures, including the re-use and recycling of materials.

5.2.95. Without the Strategy, both climate change and population growth are likely to continue to put demand on resources and infrastructure.

Table 5-15 – Strategy Implications – Material Assets

Key Risks / Opportunities	Implications for the Strategy
▪ The City Region's transport infrastructure is under threat from climate change, particularly with regards to flooding. ▪ The growing population and associated need for development are also likely to increase use of mineral resources and waste generation. ▪ The City Region's soil resources are likely to be negatively impacted by climate change, which could lead to reduced levels of productivity. ▪ There's a continued increase in renewable energy supplies across the City Region. ▪ There is a need to reduce the environmental impact of prosperity and the provision of infrastructure and housing to accommodate it, and the need to address the vulnerability of the region to ensure resilience.	The Strategy should promote actions to protect natural resources, buildings and infrastructure from the impacts of climate change.

6 SCOPE AND LEVEL OF DETAIL PROPOSED FOR THE ASSESSMENT

6.1 INTRODUCTION

6.1.1. In accordance with Section 15 of the 2005 Act and in order to assess the key issues associated with the draft Strategy and to develop meaningful SEA objectives consideration was given as to the potential for significant environmental effects (both positive and negative) based upon the likely impacts to the environmental baseline of the draft Strategy area.

6.2 SCOPING IN / OUT ENVIRONMENTAL TOPICS

6.2.1. The draft Strategy is considered to have the potential for likely significant effects on all the SEA topics listed in Schedule 3 of the 2005 Act. It is therefore considered necessary to assess the impacts of the draft Strategy on all of the SEA topics. The environmental topic areas proposed to be scoped into this SEA are presented in **Table 6-1**.

Table 6-1 – Scoping of SEA Topics

SEA Topic	Scoped In / Out	Justification
Natural Capital	In	There is potential for both positive and negative effects on natural capital in the City Region as a result of the Strategy.
Climatic Factors	In	The Strategy is expected to have a positive effect on climate change.
Population and Human Health	In	There is potential for both positive and negative effects on population and human health in the City Region as a result of the Strategy.
Biodiversity	In	There is potential for both positive and negative effects on biodiversity in the City Region as a result of the Strategy.
Landscape	In	There is potential for both positive and negative effects on the landscape across the City Region as a result of the Strategy.
Cultural Heritage	In	There is potential for both positive and negative effects on cultural heritage in the City Region as a result of the Strategy.
Water Environment	In	The Strategy is likely to have positive effects on the City Region's water environment.
Air Quality	In	The Strategy is likely to have positive effects on the City Region's air quality.
Material Assets (incl. Soil Resources)	In	The Strategy is likely to have positive effects on the City Region's material assets.

6.3 SEA OBJECTIVES

6.3.1. The draft SEA objectives are provided in **Table 6-2** and relate solely to SEA issues 'scoped in' to the assessment (refer to **Table 6-1**). The draft SEA objectives and associated indicators have been derived from the baseline data, issues and opportunities and the review of other relevant PPS.

6.3.2. Finalisation of the SEA objectives is subject to the outcome of consultation with the CAs.

Table 6-2 – Draft SEA Objectives

SEA Topic	SEA Objective	Appraisal Questions – Will the plan..
Natural Capital	To maintain, enhance and protect the City Region's natural capital stock and the ecosystem services they provide	Support environmental net gain? Preserve and protect natural capital assets from the adverse effects of climate change? Increase or decrease natural capital stock?
Climatic Factors	To increase resilience to the impacts of climate change To reduce/limit emissions of greenhouse gases To reduce energy use and ensure sustainable use of energy	Increase the resilience of people, infrastructure and the natural environment to the impacts of climate change (including flood risk, extreme weather, heat and cold? Support the transition to net zero greenhouse gas emissions? Alleviate risk of flooding and support natural flood management?
Population and Human Health	To improve physical and mental human health and community well-being and reduce inequalities across the City Region To promote economic growth and prosperity and ensure equality and social inclusion	Help to reduce inequalities, particularly for those people and communities most vulnerable to climate impacts? Promote healthier lifestyles and promote the benefits associated with a rich natural environment? Improve quality, quantity and equality of access to green and blue space and increase opportunities for recreation? Promote health enhancing environments, behaviours and activities for local communities? Help prevent risks to human health, which arise from poor quality environments? Help to reduce impacts of climate change on human health?
Biodiversity	To preserve, protect and enhance protected habitats, species, woodlands, valuable and ecosystem services in the City Region To maintain and enhance existing green networks and improve habitat connectivity	Preserve, protect and enhance priority species, habitats and sites designated for their nature conservation value? Protect and enhance native and ancient woodland? Have an adverse effect on any international, national or locally designated site? Provide opportunities for biodiversity net gain? Avoid habitat fragmentation?
Landscape	To conserve and enhance the quality of the City Region's landscapes and its character and promote access to the wider environment.	Cause direct impacts through development or maintenance on any areas valued for their landscape, intrinsic value or visual character? Avoid adverse effects on protected landscapes and seascapes? Enhance the landscape character? Promote access to the wider environment?
Cultural Heritage	To protect enhance and promote the historic environment, including heritage assets	Cause direct physical impact upon any heritage asset (designated and undesignated) and their Setting?

SEA Topic	SEA Objective	Appraisal Questions – Will the plan..
	(designated and undesignated) and their Settings	Protect, enhance and manage the character, Setting and appearance of historic landscapes, maintaining local character, distinctiveness and sense of place? Reduce the potential impact of climate change on the historic environment, including heritage assets (designated and undesignated) and their Setting? Achieve high quality sustainable design for buildings, spaces and the public realm?
Water Environment	To protect water quality and manage and enhance the water environment To reduce the risk of flooding from all sources and mitigate impacts of flooding and droughts To protect the water environment from the effects of climate change	Support a whole river catchment approach to flooding through the development of flood prevention (including natural flood management) and regeneration programmes including the development of SuDS and blue / green infrastructure? Support the protection and enhancement of water bodies? Improve water quality? Protect the coastal environment from sea level rise and inundation? Protect against coastal squeeze? Increase or decrease the risk of surface water flooding?
Air Quality	To support the development of local authority measures for the protection and enhancement of air quality	Support measures to reduce levels of air pollution? Help to improve air quality? Support measures for the reduction of congestion and traffic levels particularly in AQMAs and congestion hot-spots?
Material Assets (incl. Soil Resources)	To ensure the efficient use of land and promote sustainable use of resources To protect geological and agriculturally important land from the effects of climate change To reduce the impact of climate change on the City Region's key infrastructure and incorporate climate change adaptation to help maximise resilience	Support the protection and enhancement of buildings, infrastructure and transport network? Provide protection to the City Region's agriculturally important land? Have an adverse effect on designated geological areas? Encourage the sustainable use of material assets and minimise waste? Increase the resilience of infrastructure and material assets to the impacts of climate change (including flood risk, extreme weather, heat and cold)

7 SEA ASSESSMENT METHODOLOGY

7.1 INTRODUCTION

7.1.1. This section sets out the assessment frameworks which will be used in the SEA assessment process. The SEA assessment will involve the appraisal of the strategic alternatives, the Strategy vision and objectives and the interventions (once finalised). The assessment will identify the environmental impacts and the potential for significant effects from a regional perspective.

7.2 SEA ASSESSMENT FRAMEWORKS

ASSESSMENT OF ALTERNATIVES

7.2.1. The 2005 Act requires that the potential for significant environmental effects of 'reasonable alternatives' of a PPS are assessed as part of the SEA process.

7.2.2. The extent to which alternatives for the programme can be considered 'reasonable' are influenced by the following factors:

- The legislative framework of the strategy;
- The proportion of committed policy and action embodied in the programme; and
- The uncertainty associated with some of the climate change impacts.

7.2.3. The draft Strategy has devised three strategic alternatives (refer to Section 2.2 for further details):

- 1. Do Nothing
- 2. Incremental adaptation planning approach
- 3. Transformational approach

7.2.4. The reasonable alternatives to the Strategy will be assessed using the framework set out in **Table C1**, Appendix C.

COMPATABILITY ASSESSMENT

7.2.5. Predicting and evaluating the potential environmental effects of the Strategy is essential to the SEA process and in understanding the likely effects on the environmental baseline when the strategy is implemented. In order to ensure that both the Strategy and the SEA are compatible, a compatibility assessment will be undertaken where the high-level vision and objectives of the draft Strategy are assessed against the SEA Objectives. This assessment will identify any recommendations for updates to the vision and objectives when taking into account the specific environmental objectives developed for the SEA.

7.2.6. The compatibility assessment will be undertaken using the framework set out in **Table C2**, Appendix C.

ASSESSMENT OF INTERVENTIONS

7.2.7. Climate change is a complex, systemic, and non-linear process. As such, interdependent risks are expected to be exacerbated by climate change. Climate change impacts can affect multiple sectors, assets and agents simultaneously and many impacts will cascade through different sectors. For example, an extreme high temperature event in a dense urban area is likely to result in multiple impacts, including overheating of homes, public buildings (such as hospitals), transport networks and drying out of urban green and blue infrastructure. This can lead to ill health, particularly in at-risk populations, and result in pressure on health and social care services, as well as lower economic productivity and increased demand on energy and water systems (leading to competition for

resources elsewhere). Adaptation actions need to be implemented to manage these risks of such impacts, which will be dependent on the Strategy.

7.2.8. It is intended that the assessment of the interventions to be included in the Strategy is undertaken using a matrix-based approach as set out in Appendix C. The interventions will be assessed against the SEA Framework objectives and will be guided by the appraisal questions as set out in Table 6-2 above. This approach will be supplemented by a narrative on the likely significant effects of each of the interventions.

7.2.9. The assessment of the interventions will predict the following:

- Overall effect significance (negative, positive, uncertain, mixed or neutral).
- Nature of effect (direct, indirect, secondary and synergistic).
- Magnitude (local, regional, national, international).
- Reversibility of effect (reversible or irreversible).
- Duration (permanent, temporary, short, medium or long term).
- Potential for cumulative and synergistic effects.

7.2.10. The assessment of the interventions will be undertaken to contribute to the on-going development of the draft Strategy. The assessment will be undertaken using the framework set out in **Table C3**, Appendix C.

7.2.11. The assessment will also identify mitigation and enhancement measures for any negative or positive significant effects identified. The SEA Regulations require that mitigation measures are considered to prevent, reduce or offset any significant adverse effects on the environment of implementing the plan.

7.3 HABITATS REGULATIONS APPRAISAL

7.3.1. Under Article 6(3) of the EU Habitats Directive as transposed into the UK law by the Habitats Regulations[70], an assessment (referred to as an HRA) needs to be undertaken in respect of any plan or project which:

- Either alone or in combination with other plans or projects would be likely to have a significant effect on a site designated within the Natura 2000 network – these are Special Areas of Conservation (SACs), and Special Protection Areas (SPAs). In addition, Ramsar sites (wetlands of international importance), and are considered in this process as a matter of law or Government policy. [These sites are collectively termed ‘European sites’ in Habitats Regulations Assessment (HRA)]; and
- Is not directly connected with, or necessary to, the management of the site.

7.3.2. Sniffer have agreed in consultation with SNH that the A Strategy will consider the effects of the strategy on Natura sites and will ensure that the strategy will not adversely affect the integrity of any Natura sites.

7.3.3. Any actions brought forward by the Action Plan will be apprised in more detail if required, however, at this stage an HRA is not currently required.

[70] The Conservation of Habitats and Species Regulations 2017. Available from: http://www.legislation.gov.uk/uksi/2017/1012/contents/made

8 NEXT STEPS

8.1.1. Sniffer is seeking the views of statutory bodies and other stakeholders on the scope of the SEA. Consultation at this stage helps to ensure that the SEA will provide a robust assessment of the Strategy.

8.1.2. Following consultation on this report a log of all comments received will be developed and included within the SEA ER and responses to the comments including how these have been addressed will be included. Any amendments to the assessment process will be accounted for within the SEA ER.

8.1.3. The next step in the SEA is the assessment stage during which emerging interventions will be assessed.

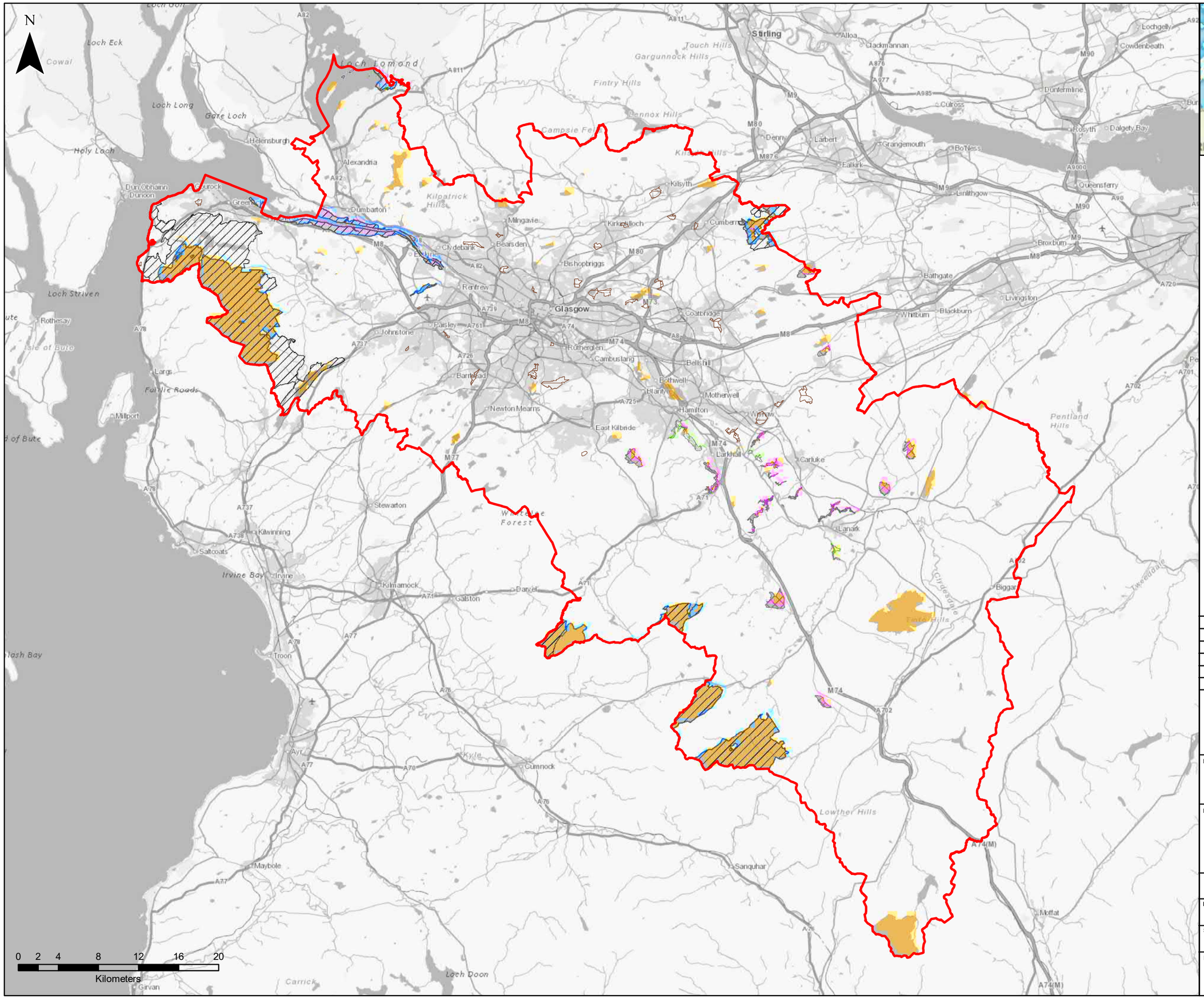
8.1.4. The Strategy timetable is set out in **Table 8-1** below. The SEA ER will be available for consultation alongside the Strategy as it is prepared.

Table 8-1 – SEA and Strategy Timetable

Strategy Activity	Timeframe
Scoping Consultation	September 2020 (four weeks)
Strategy Options produced	September – October 2020
SEA Assessment	October – November 2020
Strategy produced	October – November 2020
SEA Consultation	November – December 2020
Post Adoption Statement and Finalisation of the Strategy	January 2021

Appendix A

FIGURES



LEGEND

- Glasgow City Region
- RAMSAR
- National Nature Reserves
- Special Protection Areas
- Special Areas of Conservation
- Sites of Special Scientific Interest (Mixed & Biological)
- Important Bird Areas
- Local Nature Reserves

REVISION	DRAWN	CHECKED	APPROVED	DATE
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DESCRIPTION: FIRST DRAFT ISSUE

PROJECT TITLE:
Glasgow City Region
Climate Adaptation Strategy
SEA

DRAWING TITLE:
Figure 5.1
Biodiversity (Designated Sites)

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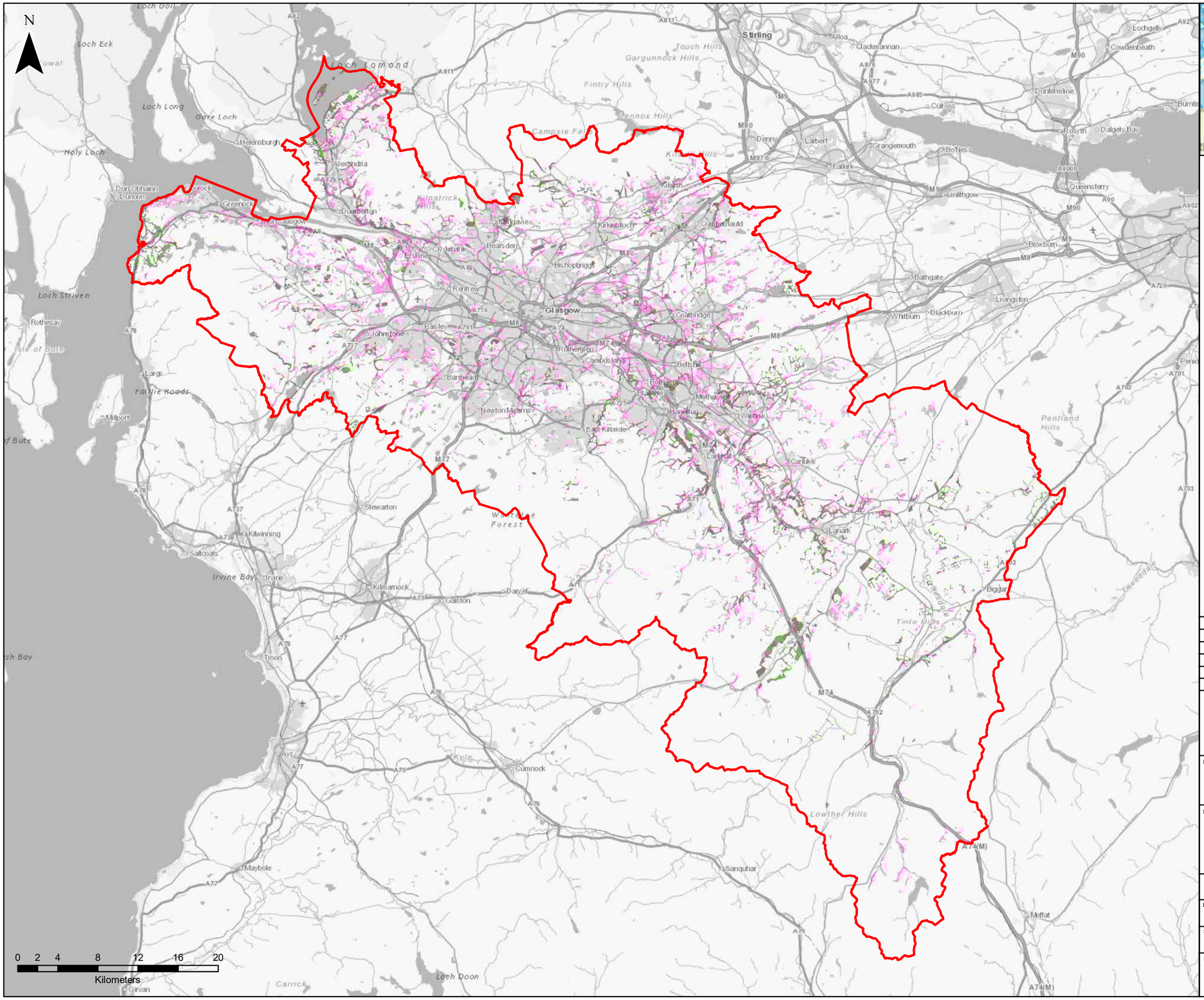

LEGEND

- Glasgow City Region
- Ancient Woodland
- Native Woodland

P01	CW	CE	KD	17/08/2020
FIRST DRAFT ISSUE				
REVISION	DRAWN	CHECKED	APPROVED	DATE
DESCRIPTION				

PROJECT TITLE:
Glasgow City Region
Climate Adaptation Strategy
SEA

DRAWING TITLE:
Figure 5.2
Biodiversity (Woodland)

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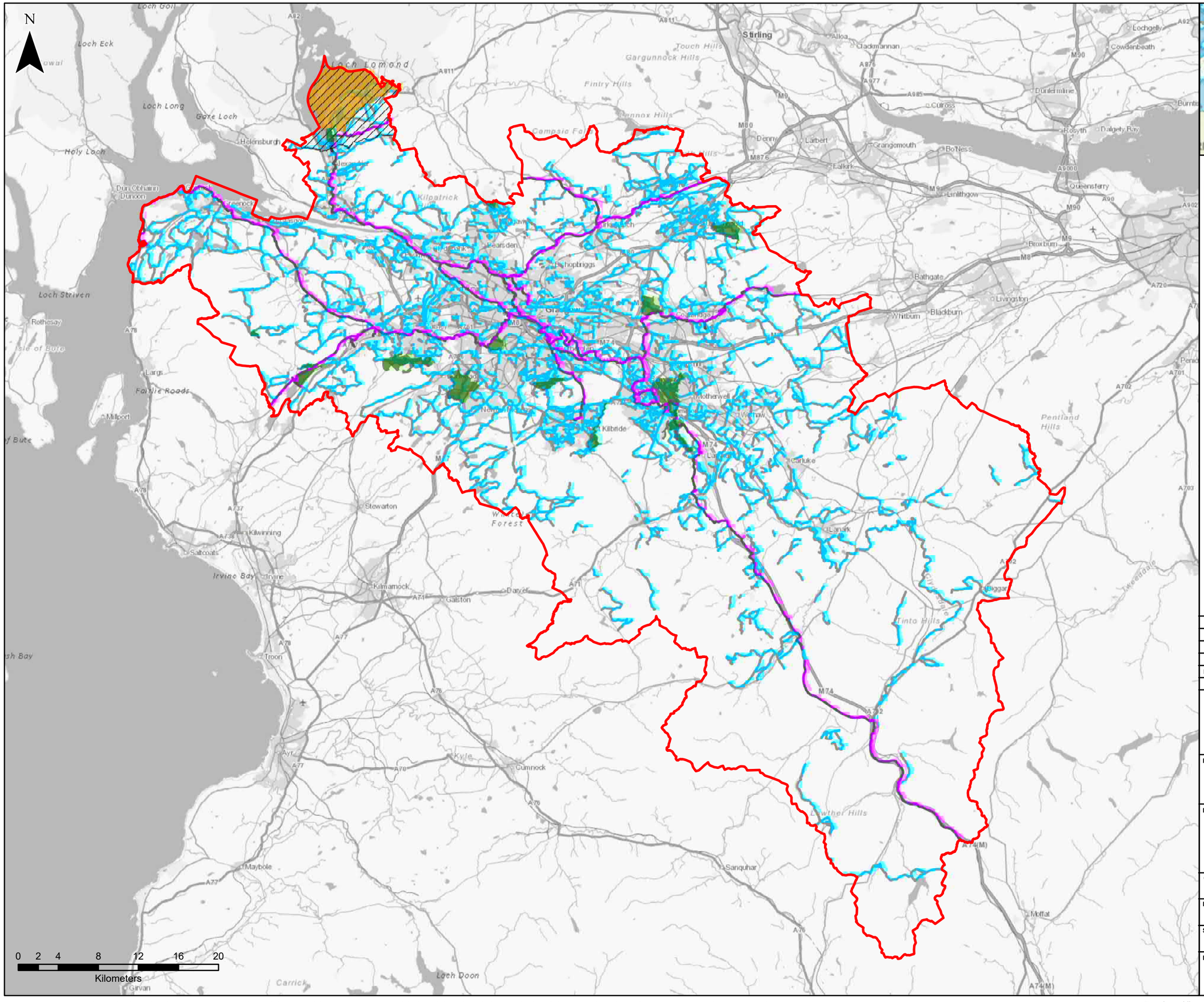

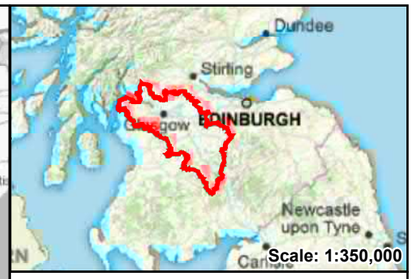

LEGEND

- Glasgow City Region
- Loch Lomond and the Trossachs National Park
- National Scenic Areas
- Country Parks
- Core Paths
- National Cycle Network

P01	CW	CE	KD	17/08/2020
FIRST DRAFT ISSUE				
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DESCRIPTION				

PROJECT TITLE:
Glasgow City Region
Climate Adaptation Strategy
SEA

DRAWING TITLE:
Figure 5.3
Landscape Designations

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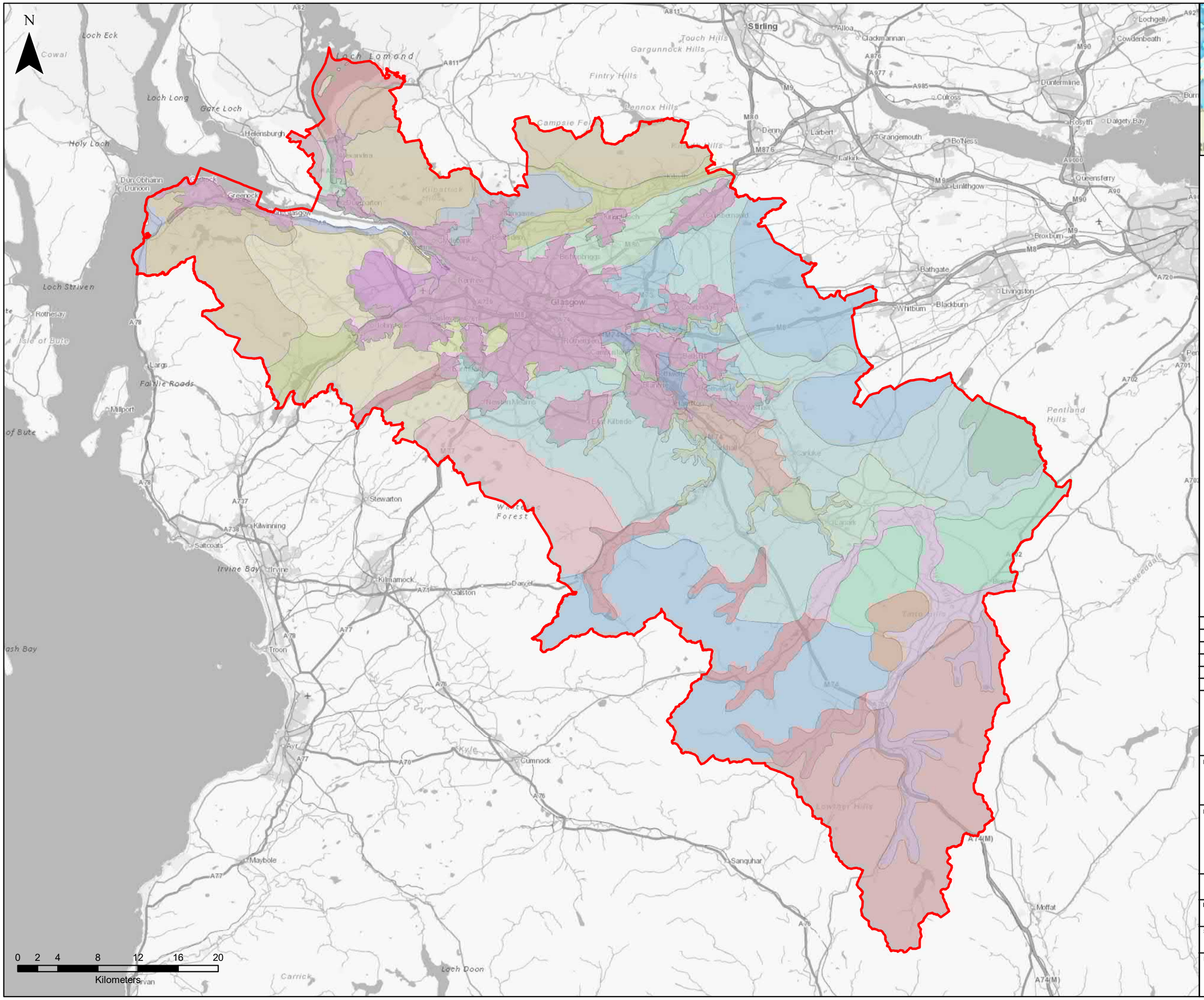

For Legend See Sheet 2

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DESCRIPTION: FIRST DRAFT ISSUE				

PROJECT TITLE:
Glasgow City Region
Climate Adaptation Strategy
SEA

DRAWING TITLE:
Figure 5.4
Landscape Character Areas

Sheet 1 of 2

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N

Legend

- Glasgow City Region

Landscape Character Areas (SNH, 2019)

- Agricultural Lowlands - Ayrshire
- Agricultural Plain - Glasgow & Clyde Valley
- Broad River Valley
- Broad Urban Valley
- Broad Valley Lowland - Glasgow & Clyde Valley
- Broad Valley Lowlands - Ayrshire
- Broad Valley Upland
- Dissected Plateau Moorland
- Drumlin Foothills
- Foothills with Forest - Dumfries & Galloway
- Incised River Valleys
- Lowland Hill Fringes - Central
- Lowland Hills - Central
- Lowland Loch Basin - Loch Lomond & the Trossachs
- Lowland Loch Basin Islands
- Lowland Plateaux - Central
- Lowland Plateaux - Lothians
- Lowland River Valleys - Central
- Moorland Hills - Glasgow & Clyde Valley
- Open Ridgeland - Glasgow & Clyde Valley
- Open Ridges
- Parallel Ridges - Loch Lomond & the Trossachs
- Plateau Farmland - Glasgow & Clyde Valley
- Plateau Moorland - Ayrshire
- Plateau Moorland with Windfarms - Ayrshire
- Plateau Moorland with Windfarms - Glasgow & Clyde Valley
- Plateau Moorlands - Glasgow & Clyde Valley
- Raised Beach - Glasgow & Clyde Valley
- Raised Beach Coast and Cliffs
- Rolling Farmland - Borders
- Rolling Farmland - Glasgow & Clyde Valley
- Rolling Farmland - Loch Lomond & the Trossachs
- Rolling Farmland with Estates - Argyll
- Rounded Landmark Hills
- Rugged Moorland Hills
- Rugged Moorland Hills and Valleys
- Rugged Upland Farmland
- Southern Uplands - Borders
- Southern Uplands - Dumfries & Galloway
- Southern Uplands - Glasgow & Clyde Valley
- Southern Uplands with Forest - Dumfries & Galloway
- Undulating Farmland and Hills
- Upland Fringe with Prominent Hills
- Upland Fringes - Lothians
- Upland Glen - Glasgow & Clyde Valley
- Upland Glens - Dumfries & Galloway
- Upland Hills - Lothians
- Upland River Valley - Glasgow & Clyde Valley
- Upland River Valleys - Ayrshire
- Upland Valley with Pastoral Floor
- Urban
- Urban Fringe Farmland
- Urban Greenspace

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DESCRIPTION: FIRST DRAFT ISSUE				

PROJECT TITLE:
Glasgow City Region
Climate Adaptation Strategy
SEA

DRAWING TITLE:
Figure 5.4
Landscape Character Areas

Sheet 2 of 2

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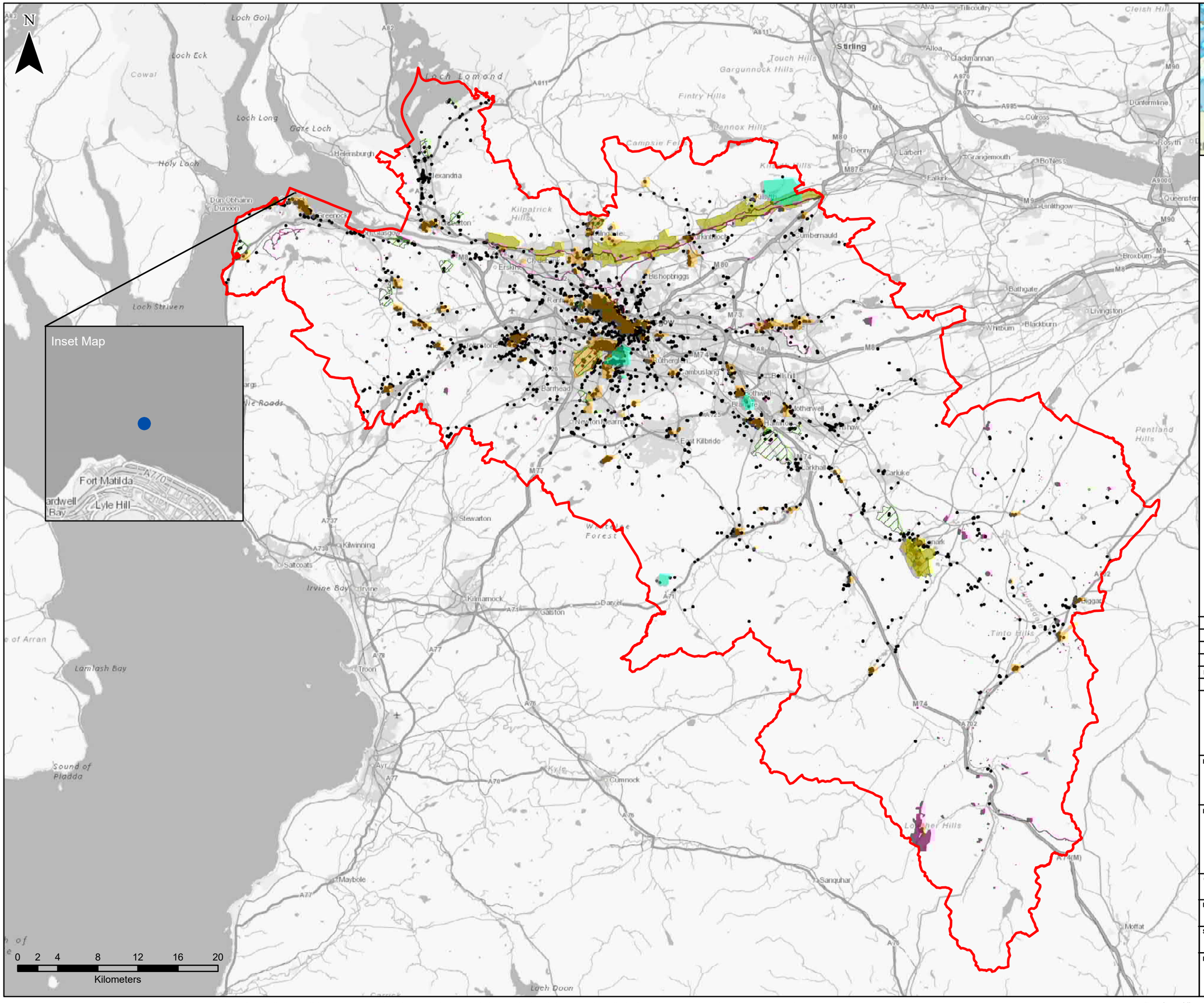

LEGEND

- Glasgow City Region
- World Heritage Site
- Scheduled Monument
- Inventory Battlefield
- Conservation Area
- Historic Marine Protected Area
- Listed Building
- Garden and Designed Landscape

P01	CW	CE	KD	19/08/2020
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REVISION	DRAWN	CHECKED	APPROVED	DATE
DESCRIPTION				

PROJECT TITLE:
Glasgow City Region
Climate Adaptation Strategy
SEA

DRAWING TITLE:
Figure 5.5
Cultural Heritage Designations

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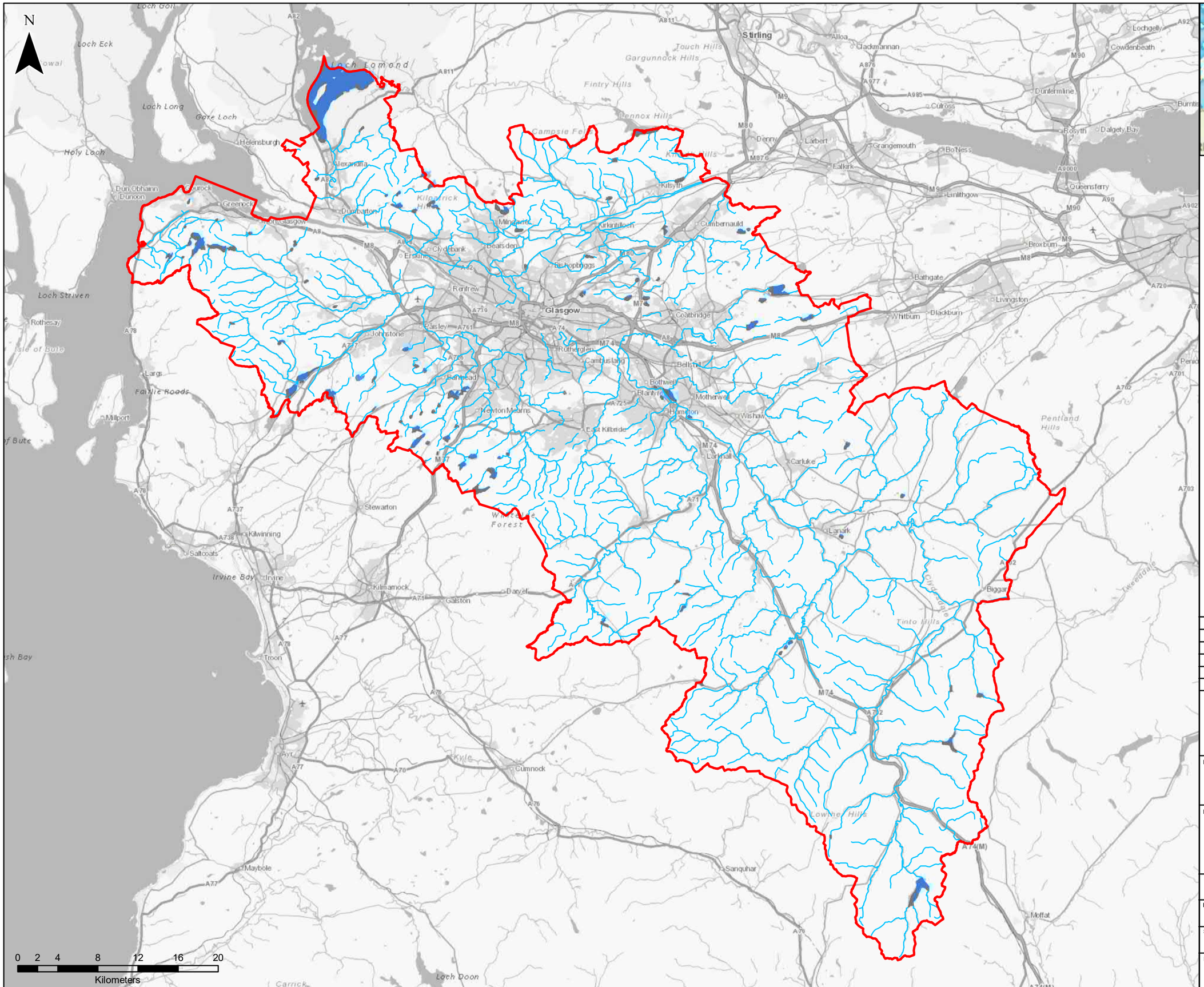

LEGEND

- Glasgow City Region
- Watercourses
- Waterbodies

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PROJECT TITLE:
Glasgow City Region
Climate Adaptation Strategy

DRAWING TITLE:
Figure 5.6
Water Environment

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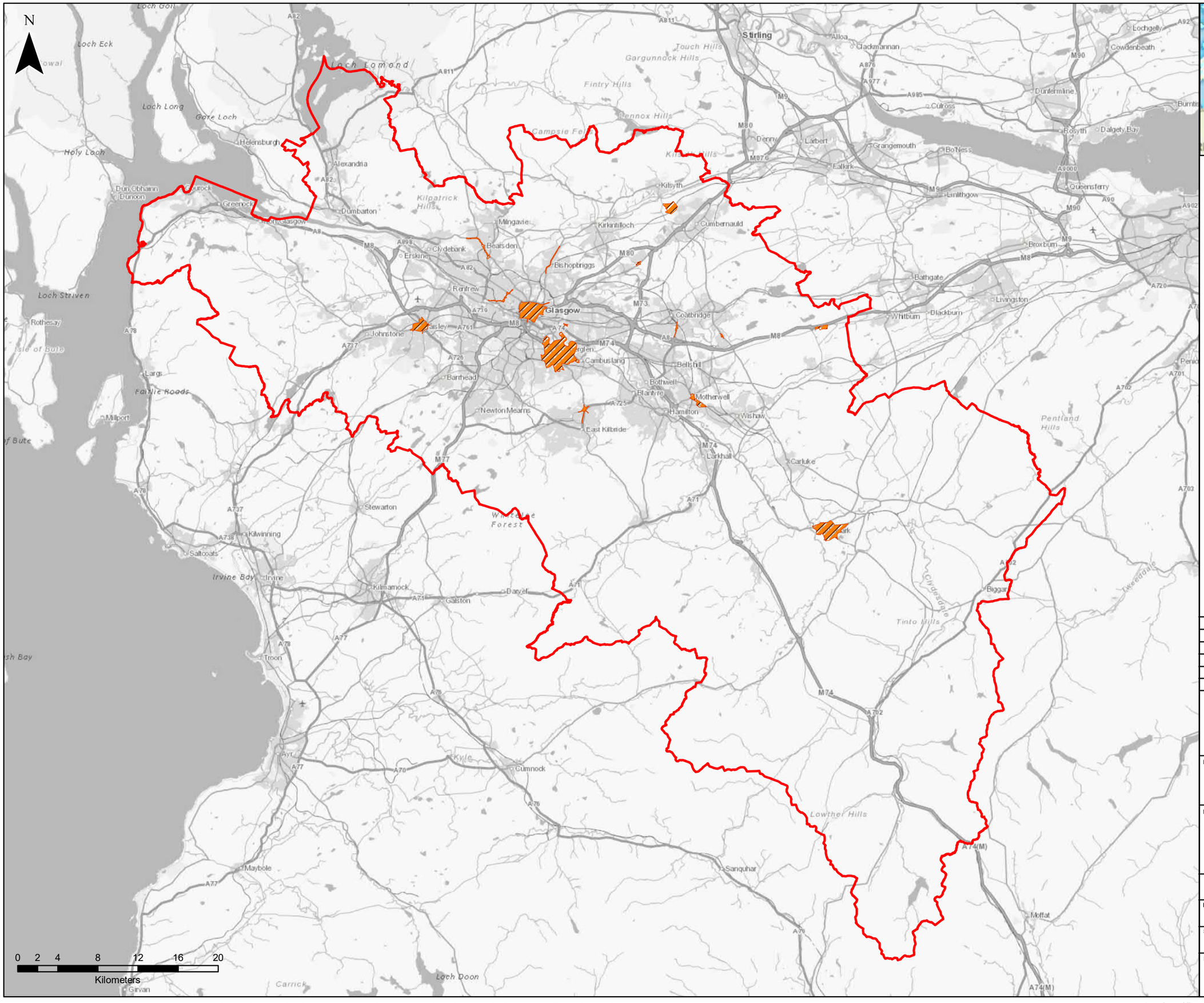

LEGEND

- Glasgow City Region
- Air Quality Management Areas (2018)

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DESCRIPTION: FIRST DRAFT ISSUE

PROJECT TITLE:
Glasgow City Region
Climate Adaptation Strategy
SEA

DRAWING TITLE:
Figure 5.7
Air Quality Management Areas

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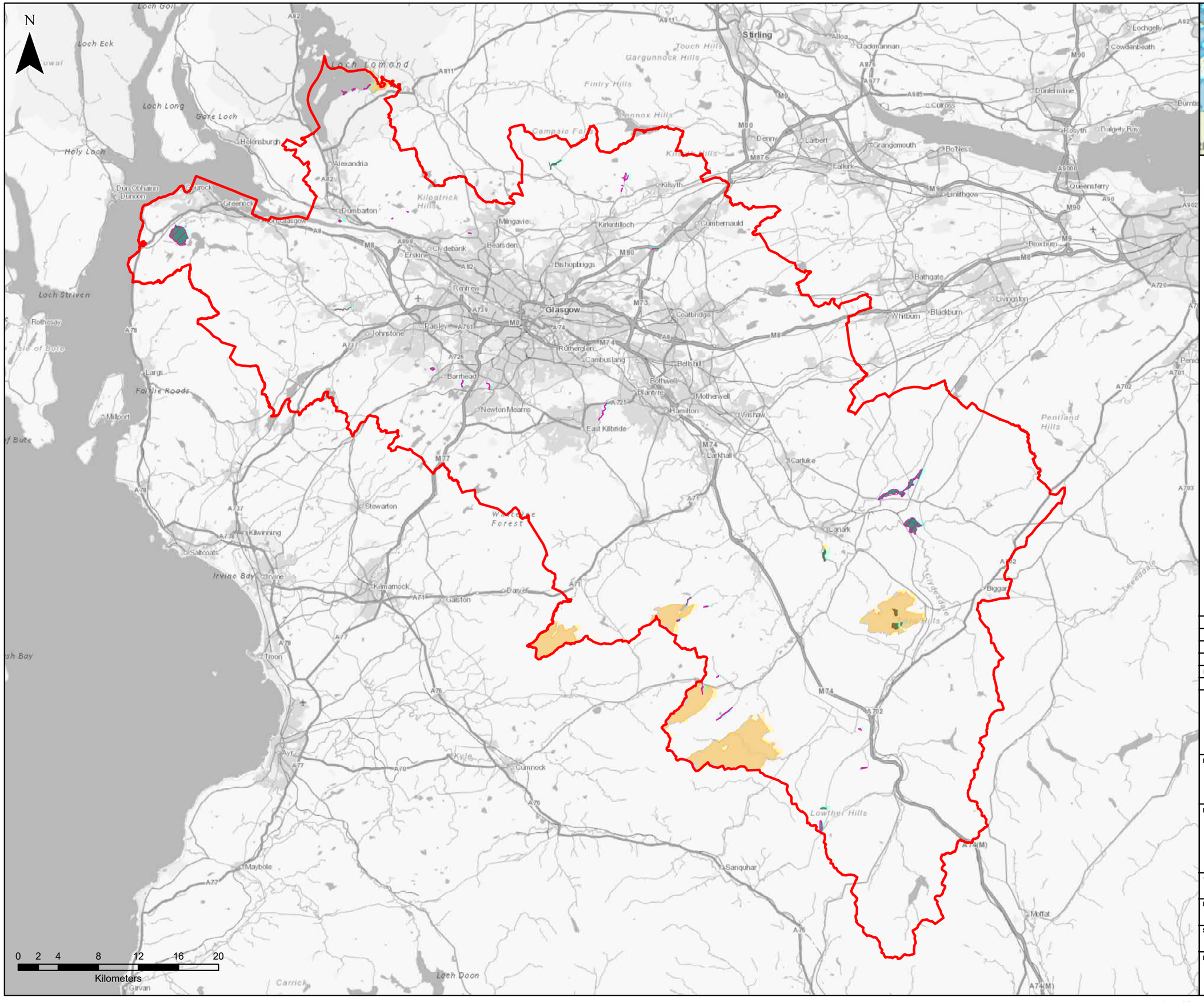

LEGEND

- Glasgow City Region
- Sites of Special Scientific Interest (Geological)
- Sites of Special Scientific Interest (Mixed)
- Geological Conservation Review Sites

REVISION	DRAWN	CHECKED	APPROVED	DATE
P01	CW	CE	KD	21/08/2020
DESCRIPTION: FIRST DRAFT ISSUE				

PROJECT TITLE:
Glasgow City Region
Climate Adaptation Strategy
SEA

DRAWING TITLE:
Figure 5.8
Geologically Designated Sites

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Appendix B

RELATIONSHIP WITH OTHER PLANS, PROGRAMMES AND STRATEGIES

This appendix presents the findings of the review of legislation, policies and plans including relevant international, national and regional documents undertaken as a part of the evidence gathering exercise for the SEA Scoping Report.

It should be noted that the scoping task of identifying related legislation, policies and plans cannot yield an exhaustive or definitive list, therefore, the review has been focussed to ensure that only policies that are current and of direct relevance to the Strategy and sustainability are included.

Table B1 – Relationship with other Plans, Programmes and Strategies

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
International								
Sustainability	Transforming our World: the 2030 Agenda for Sustainable Development	• Sets a plan of action for people, planet and prosperity. It also seeks to strengthen universal peace in larger freedom. • Sets 17 Sustainable Development Goals (SDGs) and 169 targets. The SDGs seek to realise the human rights of all and to achieve gender equality and the empowerment of all women and girls. They are integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental.	The Strategy should promote the three dimensions of sustainable development and align with the 17 SDGs where possible.	✓	✓		✓	✓
Climatic factors	EU Adaptation Strategy	▪ Promoting action by member states and supporting adaptation in cities; ▪ Promoting adaptation in vulnerable sectors and ensuring Europe's infrastructure is more resilient; and	The Strategy will identify goals, objectives and action areas for the city to adapt to climate change.	✓	✓		✓	✓

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
		▪ Better informed decision making by addressing gaps in knowledge about adaptation.						
	The Paris Agreement, 2015	Aims to limit the global warming change to well below 2°C above pre-industrial levels. However, countries aim to limit the increase to 1.5°C to reduce the impacts of global warming. The EU has committed to a binding target of a reduction of at least 40% in greenhouse gas emissions by 2030 compared to 1990.	Whilst the Strategy should have cognisance of the Paris Agreement the Strategy should align with the more ambitious targets which are set in legislation through the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019	✓	✓	✓		
	2030 Climate Framework	The framework sets three key targets for the year 2030: ▪ At least 40% cuts in greenhouse gas emissions (from 1990 levels); ▪ At least 27% share for renewable energy; and ▪ At least 27% improvement in energy efficiency	The Strategy will need to align with 2030 targets	✓	✓	✓		

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
Biodiversity	Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979)	The convention has three main aims which are stated in Article 1: ▪ to conserve wild flora and fauna and their natural habitats; ▪ to promote cooperation between states; and ▪ to give particular attention to endangered and vulnerable species including endangered and vulnerable migratory species.	The Strategy should promote and protect the region's biodiversity and help build resilience to climate change	✓	✓			
	Conservation of Natural Habitats and Wild Fauna & Flora (the 'Habitats Directive') (1992)	The identification of a European network of Sites of Community Importance (SCIs) to be designated as Special Areas of Conservation (SACs). A SEA would need to report on any potential effects on SACs and all development plans should aim to avoid adverse effects on them	The Strategy should promote and protect the region's designated sites and help build resilience to climate change	✓	✓			
	EU (2011) EU Biodiversity Strategy to 2020 – towards implementation	Aimed at halting the loss of biodiversity and ecosystem services in the EU by 2020, the strategy provides a framework for action over the next decade and covers the following key areas: • Conserving and restoring nature; ▪ Maintaining and enhancing ecosystems and their services; ▪ Ensuring the sustainability of agriculture, forestry and fisheries; ▪ Combating invasive alien species; and ▪ Addressing the global biodiversity crisis.	The Strategy should promote and protect the region's biodiversity and help build resilience to climate change	✓	✓			

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
	EU (2013) 7th Environment Action Programme (EAP) to 2020	The 7th EAP guided EU environmental policy up to 2020 and set ambitions for 2050. The Programme set the following as a priority objective: "to protect, conserve and enhance the Union's natural capital." The 7th EAP reflects the EU's commitment to the preservation of biodiversity and the ecosystem services it provides for both its intrinsic value and the its contribution to economic well-being. The Programme highlights that integrating the value of ecosystem services into accounting and reporting across the Union and its member states by 2020 will result in the better management of natural capital.	The Strategy should promote and protect the region's biodiversity and help build resilience to climate change	✓	✓			
Air Quality	Ambient Air Quality Directive	The Ambient Air Quality Directive provides the current framework for the control of ambient concentrations of air pollution in the EU. The control of emissions from mobile sources, improving fuel quality and promoting and integrating environmental protection requirements into the transport and energy sector are part of these aims.	The Strategy should recognise the impact of climate change on air quality and support the delivery of air quality management measures.	✓				

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
Water Environment	Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy ("The Water Framework Directive")	The main aims of the Water Framework Directive (WFD) are to: ▪ prevent deterioration and enhance status of aquatic ecosystems, including groundwater ▪ promote sustainable water use ▪ reduce pollution ▪ contribute to the mitigation of floods and droughts The WFD requires the creation of River Basin Management Plans (RBMPs). Statutory objectives are set for Scottish waters through River Basin Management Planning. These objectives are based on ecological assessments and economic judgments. The plans cover all types of water body, e.g. rivers, lochs, lakes, estuaries, coastal waters and groundwater.	The Strategy should support improved resilience to climate change and flood risk management and the integration of river basin management planning to protect and improve the status of water bodies across the City Region.	✓	✓			✓
	Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks	Requires Member States to assess if all water courses and coast lines are at risk from flooding, to map the flood extent and assets and humans at risk in these areas and to take adequate and coordinated measures to reduce this flood risk.	The Strategy should promote sustainable flood risk management and align with key actions to protect humans and assets.	✓	✓			✓

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
	Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration	This Directive establishes a regime which sets groundwater quality standards and introduces measures to prevent or limit inputs of pollutants into groundwater. The directive establishes quality criteria that takes account local characteristics and allows for further improvements to be made based on monitoring data and new scientific knowledge.	The Strategy should support the progressive reduction of pollution of groundwater and preventing further pollution.	✓	✓			✓
Material Resources (Incl. Soils)	Directive 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste	Waste management in the EU should be improved and transformed into sustainable material management, with a view to protecting, preserving and improving the quality of the environment, protecting human health, ensuring prudent, efficient and rational utilisation of natural resources, promoting the principles of the circular economy, enhancing the use of renewable energy, increasing energy efficiency, reducing the dependence of the Union on imported resources, providing new economic opportunities and contributing to long-term competitiveness.	The Strategy should aim to support the improvement of waste infrastructure and promote both the efficient use of resources and reduction in waste to landfill.	✓	✓			✓
National								
Overarching	National Planning Framework for Scotland 3 (NPF3), 2014	The NPF3 sets out the long-term vision for development and investment across Scotland over the next 20 years. The main aim is to create opportunities for all of Scotland to flourish, through increasing	The Strategy should take account of the spatial and environmental issues set out in the	✓	✓	✓		✓

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
		sustainable economic growth. To achieve this, the Government Economic Strategy aims to share the benefits of growth by encouraging economic activity and investment across all of Scotland's communities, whilst protecting the nation's natural and cultural assets.	NPF3 to deliver benefits for communities, the economy and the wider environment.					
	Planning (Scotland) Act 2006	Sets provision for the preparation, examination and publication of development plans. Defines duty of planning authorities to exercise development planning functions to contribute to sustainable development.	The Strategy should align with planning requirements and seek to contribute to sustainable development.	✓	✓	✓		
	Scottish Planning Policy 2014	Identifies the Scottish Government's central purpose at sustainable economic growth. SPP sets out the main purpose and tasks of the planning system and national policies across all policy sectors.	The Strategy must act in accordance with the national policies set out in the SPP including a natural resilient place; a low carbon place; a successful, sustainable place; and a connected place.	✓	✓	✓		
	Climate Ready Scotland: Second Scottish Climate	This is a 5 year programme to prepare Scotland for the challenges posed by the changing climate. It includes seven key outcomes:	The Strategy should align with the outcomes	✓	✓	✓	✓	✓

Plan / Programme / Strategy	Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
			Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
Change Adaptation Programme 2019 - 2024	▪ Our communities are inclusive, empowered, resilient and safe in response to climate change; ▪ The people in Scotland who are most vulnerable to climate change are able to adapt and climate justice is embedded in climate change adaptation policy; ▪ Our inclusive and sustainable economy is flexible, adaptable and responsive to the changing climate; ▪ Our society's supporting systems are resilient to climate change; ▪ Our natural environment is valued, enjoyed, protected and enhanced and has increase resilience to climate change; ▪ Our coastal and marine environment is valued, enjoyed, protected and enhances and has increase resilience to climate change; and ▪ Our international networks are adaptable to climate change.	of the Climate Change Adaptation Programme					
UK Green Finance Strategy, 2019	This strategy recognises the role of the financial sector in delivering global and domestic climate and environmental objectives. It sets out: ▪ the proposals for green finance at the heart of delivering the UK's Clean Growth Strategy, 25 Year Environment Plan and Industrial Strategy ▪ how the proposals support the UK's economic policy for strong, sustainable and balanced growth	The Strategy should align aims and targets with the Green Finance Strategy to support proposals for green finance to deliver strong, sustainable and balanced growth.	✓	✓			

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
Climatic Factors	UK Committee on Climate Change, Interim UK Carbon Budgets	The UK has committed to an 100% reduction in its greenhouse gas emissions by 2050. In order to help meet this target, the UK Committee on Climate Change (CCC) has devised a series of interim UK "carbon budgets" as follows: ▪ 1st carbon budget (2008 to 2012): 25% reduction; ▪ 2nd carbon budget (2013 to 2017): 31% reduction; ▪ 3rd carbon budget (2018 to 2022): 37% reduction by 2020; ▪ 4th carbon budget (2023 to 2027): 50% reduction by 2025; and ▪ 5th carbon budget (2028 to 2032): 57% reduction by 2030.	The Strategy should take cognisance of the Interim UK Carbon Budgets, however alignment with the reductions targets in the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 is required.	✓	✓			
	Climate Change (Emissions Reduction Targets) (Scotland) Act 2019	The 2009 Act sets the statutory framework for greenhouse gas emissions reductions in Scotland by setting an interim 56% by 2020, 75% by 2030, 90% by 2040, and a 100% reduction target for 2045.	The Strategy should align with the 2019 Act.	✓	✓			
	The Scottish Energy Strategy, 2017	The Scottish Energy Strategy sets out a clear vision for the development of energy systems across Scotland that will create economic opportunities whilst supporting work to achieve Scotland's long-term climate change targets.	The Strategy should align with the Strategy targets.	✓	✓			
	UK Climate Change Risk Assessment	The 2017 CCRA concluded that the most urgent risks for the UK resulting from periods of too much or too	The assessment will inform the Strategy and	✓	✓	✓		

Plan / Programme / Strategy	Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
			Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
(CCRA) 2012 and 2017	little water, increasing average and extreme temperatures and sea level rise include: ▪ Flooding and coastal change; ▪ Health, wellbeing and productivity; ▪ Shortages in the public water supply; ▪ Natural capital; ▪ Domestic and international food production and trade; and ▪ New and emerging pests and diseases.	is relevant to all Outcomes					
UK Clean Growth Strategy, 2017	Key polices of the strategy include: ▪ Develop world leading Green Finance capabilities; ▪ Develop a package of measures to support businesses to improve their energy productivity, by at least 20 per cent by 2030; ▪ Establish an Industrial Energy Efficiency scheme; ▪ Demonstrate international leadership in carbon capture usage and storage; ▪ Publish joint industrial decarbonisation and energy efficiency action plans; ▪ Phase out the installation of high carbon forms of fossil fuel heating in new and existing businesses; ▪ Support recycling of heat; ▪ Upgrade all fuel poor homes to be upgraded to Energy Performance Certificate (EPC) Band C by 2030;	The Strategy should align aims and targets with the Clean Growth Strategy	✓	✓			

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
		▪ Develop a long term trajectory to improve the energy performance standards of privately rented homes; ▪ Build and extend heat networks across the country; ▪ Invest in low carbon heating by reforming the Renewable Heat Incentive; ▪ Develop one of the best electric vehicle charging networks in the world; ▪ design a new system of future agricultural support to focus on delivering better environmental outcomes; ▪ zero avoidable waste by 2050; and ▪ Support peatland through a £10 million capital grant scheme for peat restoration.						
Population and Health	Equality Act, 2010	The Equality Act 2010 legally protects people from discrimination in the workplace and in wider society. It is against the law to discriminate against anyone because of: ▪ age; ▪ being or becoming a transsexual person; ▪ being married or in a civil partnership; ▪ being pregnant or having a child; ▪ disability; ▪ race including colour, nationality, ethnic or national origin; ▪ religion, belief or lack of religion/belief; ▪ sex; and ▪ sexual orientation.	The Strategy will need to ensure consideration of all protected groups.	✓	✓	✓	✓	

Plan / Programme / Strategy	Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
			Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
Good Places, Better Health, 2008	Good Places, Better Health supports five National Outcomes ▪ Our children have the best start in life and are ready to succeed; ▪ We live longer, healthier lives; ▪ We have tackled the significant inequalities in Scottish society; ▪ We live in well-designed, sustainable places where we are able to access the amenities and services we need; and ▪ We value and enjoy our built and natural environment and protect and enhance it for future generations.	The Strategy should consider the impacts of climate change on health inequalities.	✓	✓	✓	✓	
Equally Well, 2008	The Strategy aims to tackle health inequalities in the following key areas: ▪ Early years and young people; ▪ Tackling poverty and increasing employment; ▪ Physical environments and transport; ▪ Harms to health and wellbeing – alcohol, drugs and violence; and ▪ Health and wellbeing.	The Strategy should consider the impacts of climate change on different equality groups	✓	✓	✓	✓	

Plan / Programme / Strategy	Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
			Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
Scotland's Economic Strategy, 2015	The strategy focuses on two key pillars – increasing competitiveness and tackling inequality. These are underpinned by four key priorities: ▪ Investing in our people and our infrastructure in a sustainable way; ▪ Fostering a culture of innovation and research and development; ▪ Promoting inclusive growth and creating opportunity through a fair and inclusive jobs market and regional cohesion; and ▪ Promoting Scotland on the international stage to boost trade and investment, influence and network.	The Strategy should align with the Economic Strategy's key pillars and key priorities.	✓	✓		✓	
Community Empowerment (Scotland) Act, 2015	The Community Empowerment (Scotland) Act 2015 helps to empower community bodies through the ownership or control of land and buildings, and by strengthening their voices in decisions about public services.	The Strategy should help to promote community empowerment	✓	✓	✓	✓	
Foresight Mental Capital and Wellbeing Project (2008). Final Project report. The Government Office for Science	As the number of older adults increases substantially in the UK over the next six decades, the existing urban and rural infrastructure will need to be adapted so that the needs of these people are met. For example, issues of access, transport, amenity and security will substantially affect the wellbeing of older people.	The Strategy should consider the impacts of climate change on health inequalities. And mental health and wellbeing	✓	✓		✓	

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
	A More Active Scotland: Scotland's Physical Activity Delivery Plan, 2018	The strategy includes six key outcomes: ▪ Encourage and enable the inactive to be more active; ▪ Encourage and enable the active to stay active through life; ▪ Develop physical confidence and competence from the earliest age; ▪ Improve active infrastructure; ▪ Support wellbeing and resilience in communities through physical activity and sport; and ▪ Improve opportunities to participate, progress and achieve in sport.	The Strategy should look at ways of building resilience to community facilities, greenspaces, footpaths and cycleways in order to help promote active lifestyles	✓	✓	✓	✓	
Biodiversity	The Nature Conservation (Scotland) Act 2004	The Act sets out a series of measures, designed to conserve biodiversity and to protect and enhance the biological and geological natural heritage of Scotland. The Act places a general duty on all public bodies to further the conservation of biodiversity.	The Strategy should promote and protect the region's biodiversity and help build resilience to climate change	✓	✓			

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
	Wildlife and Countryside Act (as amended 1981)	The Wildlife and Countryside Act 1981 consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the conservation of wild birds (Birds Directive) in Great Britain (NB Council Directive 79/409/EEC has now been replaced by Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (codified version)). The Act provides for the notification and confirmation of Sites of Special Scientific Interest (SSSIs) and the protection of wildlife.	The Strategy should promote and protect the region's biodiversity and help build resilience to climate change	✓	✓			
	2020 Challenges for Scotland's Biodiversity	Scotland's 2020 Challenge aims to: ▪ protect and restore biodiversity on land and in our seas, and to support healthier ecosystems; ▪ connect people with the natural world, for their health and wellbeing and to involve them more in decisions about their environment; and ▪ maximise the benefits for Scotland of a diverse natural environment and the services it provides, contributing to sustainable economic growth.	The Strategy should align with the 2020 Challenge aims and protect the region's biodiversity.	✓		✓		

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
	Environment Bill 2020	The Environment Bill 2020 sets out how we plan to protect and improve the natural environment in the UK. Acting as one of the key vehicles for delivering the 25 Year Environment Plan, the Environment Bill brings about urgent and meaningful action to combat the environmental and climate crisis we are facing. It sets a domestic framework for environmental governance and helps to deliver on the government's commitment to be the first generation to leave our environment in a better state. The Environment Bill helps to manage the impact of human activity on the environment, creating a more sustainable and resilient economy, and enhancing well-being and quality of life. It will engage and empower citizens, local government and businesses to deliver environmental outcomes and create a positive legacy for future generations.	The Strategy should align with the Environment Bill's objectives to manage the impact of human activity on the environment, creating a more sustainable and resilient economy, and enhancing well-being and quality of life.	✓	✓			

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
	The UK 25 Year Environment Plan, 2018	The 25 Year Environment Plan outlines the Government's ambition to leave our environment in a better state than we found it. The Plan includes ten key targets of which two focus on biodiversity. Thriving plants and wildlife: ▪ Restoring 75% of our one million hectares of terrestrial and freshwater protected sites to favourable condition, securing their wildlife value for the long term; ▪ Creating or restoring 500,000 hectares of wildlife-rich habitat outside the protected site network, focusing on priority habitats as part of a wider set of land management changes providing extensive benefits; ▪ Taking action to recover threatened, iconic or economically important species of animals, plants and fungi and where possible to prevent human-induced extinction or loss of known threatened species in England and the Overseas Territories; and ▪ Increasing woodland in England in line with our aspiration of 12% cover by 2060: this would involve planting 180,000 hectares by end of 2042. Enhancing biosecurity: ▪ Managing and reducing the impact of existing plant and animal diseases; lowering the risk of new ones and tackling invasive non-native species;	The Strategy should take the 25 year environment plan's objective into account	✓	✓	✓	✓	

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
	Scottish Biodiversity Strategy 2006	The Strategy outlines the vision for the future health of biodiversity in Scotland. The strategy highlights the need to: ▪ Undertake better planning, design and practice for landscapes and ecosystems; ▪ encourage more engagement with people in biodiversity conservation; ▪ To take biodiversity into account in decision making; and ▪ Halt the loss of biodiversity	The Strategy should promote and protect the region's biodiversity and help build resilience to climate change	✓		✓		
	Scotland's National Marine Plan, 2015	The overall vision of the marine environment is for a '*clean, healthy, safe, productive and diverse seas; managed to meet the long term needs of nature and people*'. The vision for the marine environment is underpinned by a series of strategic objectives which are focused on key themes: ▪ Economy; ▪ Social; ▪ Marine ecosystem; ▪ Climate change mitigation; and ▪ Climate change adaptation.	The Strategy should align with the Marine Plan's climate change mitigation and adaptation proposals.	✓	✓	✓		

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
	Scottish Forestry Strategy 2006	The Strategy provides a framework for well managed forests providing a wide range of benefits and recognising the role of forests in sustainable development. The Strategy highlights climate change as a key theme and includes ways for tackling the threats of climate change, adapting Scotland's woodlands and the forestry sector.	The Strategy should promote and protect the region's forests and woodlands and help build resilience to climate change	✓		✓		
Landscape	The UK 25 Year Environment Plan, 2018	Goal 6: Enhancing beauty, heritage and engagement with the natural environment, is to "safeguard and enhance the beauty of our natural *scenery and improving its environmental value while being sensitive to considerations of its heritage*".	The Strategy should take the 25 year environment plan's objective into account	✓				
	SNH Landscape Policy Framework, 2006	The Strategy's sets out our overarching aim - "*To safeguard and enhance the distinct identity, the diverse character and the special qualities of Scotland's landscapes as a whole, so as to ensure tomorrow's landscapes contribute positively to people's environment and are at least as attractive and valued as they are today*."	The Strategy should promote and protect the region's unique landscape and help build resilience to climate change	✓				
	Green Infrastructure: An integrated approach to	The Landscape Institute's most recent position statement, 'Green Infrastructure LI Position Statement 2013' sets out why green infrastructure crucial to our	The Strategy should recognise the	✓				

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
	landscape use. Landscape Institute Position Statement, 2013	sustainable future. The publication showcases a range of successful green infrastructure projects and shows how collaboration is key to delivering multifunctional landscapes. It also illustrates why landscape professionals should take the lead on the integration of green infrastructure..	importance of green infrastructure.					
	Scotland's Land Use Strategy 2016-2021	The main vision of the strategy is '*A Scotland where we fully recognise, understand and value the importance of our land resources, and where our plans and decisions about land use will deliver improved and enduring benefits, enhancing the wellbeing of our nation'*. This is underpinned by three objectives: ▪ Land-based businesses working with nature to contribute more to Scotland's prosperity; ▪ Responsible stewardship of Scotland's natural resources delivering more benefits to Scotland's people ▪ Urban and rural communities better connected to the land, with more people enjoying the land and positively influencing land use.	The Strategy should align with the overall vision and objectives of the Land Use Strategy.	✓	✓	✓	✓	
Cultural Heritage	Planning (Listed buildings and Conservation Areas) Act 1990	This is an Act relating to special controls in respect of listed buildings and areas of special architectural or historic interest	The Strategy should promote and manage the adaptation and maintenance of its heritage assets and	✓				

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
			landscapes in a sustainable way, without loss of character.					
	1979 Ancient Monuments and Archaeological Areas Act	Where Ancient Monuments are present the following Act influences the extent of public control to ensure the protection of scheduled ancient monuments.	The Strategy should promote and manage the adaptation and maintenance of its heritage assets and landscapes in a sustainable way, without loss of character.	✓				
	Historic Environment Scotland Act 2014	This sets out the functions for Historic Environment Scotland in investigating, caring for and promoting Scotland's historic environment.	The Strategy should promote and manage the adaptation and maintenance of its heritage assets and landscapes in a sustainable way, without loss of character.	✓				
	Our Place in Time: The Historic Environment Strategy for Scotland 2014	Sets out a vision to that Scotland's environment is understood and valued, cared for and protected. The key outcome is to ensure that the cultural, social, environmental and economic value of Scotland's historic environment continues to make a strong	The Strategy should promote and manage the adaptation and maintenance of its heritage assets and	✓				

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
		contribution to the wellbeing of the nation and its people.	landscapes in a sustainable way, without loss of character.					
	Historic Environment Policy for Scotland 2019	Sets out the six policies which define how the historic environment should be managed	The Strategy should promote and manage the adaptation and maintenance of its heritage assets and landscapes in a sustainable way, without loss of character.	✓				
Water Environment	Water Environment and Water Services (Scotland) Act 2003	The Act ensures that all human activity that can have a harmful impact on water is controlled by ▪ promoting sustainable use of water based on the long-term protection of available water resources; ▪ ensuring the progressive reduction of pollution of groundwater and preventing further pollution; and ▪ preventing further deterioration of, and protecting and enhancing, the status of water ecosystems.	The Strategy should work towards reducing the impacts on the water environment from severe weather events, reduce level of run off and pollution to watercourses and address challenges from flooding and drought.	✓	✓			

Plan / Programme / Strategy	Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
			Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
The UK 25 Year Environment Plan, 2018	"Improve at least three quarters of our waters to be close to their natural state as soon as is practicable by: […] Reaching or exceeding objectives for rivers, lakes, coastal and ground waters that are specially protected, whether for biodiversity or drinking water".	The Strategy should align with the aims of the 25 Year Environment Plan	✓		✓		
Flood Risk Management (Scotland) Act 2009	The Act introduces a more sustainable and modern approach to flood risk management which are better suited to current needs and can accommodate the impacts of climate change. Under the Act the Government worked with SEPA to created 14 Flood Risk Strategies.	The Strategy should promote sustainable flood risk management and align with key actions.	✓	✓	✓	✓	
Clyde and Loch Lomond Flood Risk Management Strategy, 2015	The Strategy highlights the main sources of flood risk in the region and the location of the region's vulnerable areas.	The Strategy should promote sustainable flood risk management and align with actions	✓	✓	✓	✓	✓
River Basin Management Plan for the Scotland River Basin District 2015-2027	The Management Plan aims to protect and improve the water environment of the Scotland river basin district. It sets out how relevant authorities can tackle the pressures and improve the condition of their watercourses.	The Strategy should support improved resilience to climate change and flood risk management and the integration of natural flood management measures	✓	✓	✓	✓	✓

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
Air Quality	Air Quality (Scotland) Amendment Regulations 2016	The air quality objectives set out in the Air Quality (Scotland) Regulations 2000, the Air Quality (Scotland) Amendment Regulations 2002 and the Air Quality (Scotland) Amendment Regulations 2016 provide the statutory basis for local air quality management areas.	The Strategy should recognise the impact of climate change on air quality and support the delivery of air quality management measures.	✓				
	National Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)	This Air Quality Strategy sets out air quality objectives and policy options to further improve air quality in the UK from today into the long term.	The Strategy should take air quality targets into account.	✓				
	Cleaner Air for Scotland – The Road to a Healthier Future 2015	The purpose of the strategy is to provide a national framework which sets out how the Scottish Government and its partner organisations propose to achieve further reductions in air pollution and fulfil our legal responsibilities as soon as possible. It focuses on key areas such as transport; health; placemaking; communications and climate change.	The Strategy should use the framework to align future targets	✓	✓			
Material Assets	Scotland's Zero Waste Plan, 2010	The plan outlines Scotland's key objectives in relation to waste prevention, recycling and reducing the amount of waste sent to landfill on the journey to a zero waste Scotland. The plan proposes targets for Scotland's waste	The Strategy should aim to protect waste infrastructure from the impacts of climate change and encourage	✓		✓		

Plan / Programme / Strategy		Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
				Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
			ta reduction in waste to landfill.					
	The Scottish Soil Framework 2009	This aim of this framework is to instigate a process by which key stakeholders will work together to achieve better soil protection from future challenges including climate change.	The Strategy should understand the importance of the regions soils and protect resources from the impacts of climate change.	✓				
	National Transport Strategy, 2020	The overall aim of the strategy – "We will have a sustainable, inclusive, safe and accessible transport system, helping deliver a healthier, fairer and more prosperous Scotland for communities, businesses and visitors" The Strategy has four key areas: ▪ Reduce inequalities; ▪ Take climate action; ▪ Help deliver inclusive economic growth; and ▪ Improve health and wellbeing.	The Strategy should aim to protect the transport network and associated infrastructure from climate change	✓	✓	✓		
	Strategic Transport Projects Review, 2008	Sets out the Scottish Government's 29 transport investment priorities over the period to 2032. The STPR identifies those recommendations that most effectively contribute towards the Government's Purpose of increasing sustainable economic growth.	The Strategy should support the development of infrastructure in the	✓	✓	✓		

Plan / Programme / Strategy	Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
			Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
	STPR supports three strategic outcomes as set out in the National Transport Strategy: ▪ Improving journey times and connections ▪ Reducing emissions ▪ Improving quality, accessibility and affordability.	STPR and align with the strategic outcomes.					
The Scottish Rural Development Programme 2014-2020	This programme delivers Pillar 2 of the EU Common Agricultural Policy and funds economic, environmental and social measures for the benefit of rural Scotland. The main priorities include: ▪ Supporting agricultural and forestry businesses; ▪ Protecting and improving the natural environment; ▪ Enhancing the rural economy; ▪ Addressing the impact of climate change; and ▪ Supporting rural communities.	The Strategy should align with the priorities of the Rural Development Programme.	✓	✓	✓		
Scotland: Making Things Last - A Circular Economy Strategy 2016	The strategy's four priority areas, based on their resource use, environmental impact and importance to the Scottish economy, are: ▪ Food, drink, and the broader bio-economy; ▪ Remanufacture; ▪ Construction and the built environment; and ▪ Energy infrastructure.	The Strategy should support the development of a circular economy.	✓	✓	✓		
Infrastructure Investment Plan 2015	The 2015 plan includes a set of guiding principles for infrastructure investment, which provide the framework for investment decisions. These are:	The Strategy should aim to protect key infrastructure from the	✓	✓	✓		

Plan / Programme / Strategy	Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
			Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
	▪ delivering sustainable economic growth through increasing competitiveness and tackling inequality; ▪ managing the transition to a more resource efficient, lower carbon economy; ▪ supporting delivery of efficient and high quality public services; and ▪ supporting employment and opportunity across Scotland.	effects of climate change, in order deliver sustainable economic growth.					
Regional							
Glasgow and Clyde Valley Green Network Strategy	The Glasgow City Region's Green Network will provide well-connected, high quality, multi-functional greenspaces throughout the region. From cycle paths to allotments, wildlife habitats to urban rain gardens. The Green Network will provide easy and well-linked access to the outdoors for people of all ages, wherever they live or work, creating new opportunities to actively explore our region's wonderful assets as part of their everyday lives. In line with the Scottish Government's vision for Scotland, the region's Green Network has the potential to provide a wide range of meaningful and valuable benefits for this area, its environment and the people living and working here centred on: ▪ A successful, sustainable place; ▪ A natural, resilient place; ▪ A connected place; and	The Strategy should support the Green Network Strategy through the provision of interventions that benefit the City Region and delivering on the established goals.	✓	✓	✓	✓	✓

Plan / Programme / Strategy	Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
			Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
	▪ A low carbon place.						
Clyde Marine Planning Partnership's Regional Marine Plan (Pre-Consultation Draft, 2019)	The Vision of the Regional Marine Plan is "*The marine and coastal environment of the Clyde Marine Region is clean, healthy, safe, productive, biologically diverse and accessible for all. It is managed sustainably to support productive and thriving coastal communities and to allow nature to flourish*." The Plan was developed in accordance with five overarching principles: GP1 – Sustainable Development GP2 – Support delivery of Good Environmental Status GP3 – Ecosystem Approach GP4 – Adding Value not Complexity GP5 – Multiple Responsible use of Marine Space	The Strategy should align with the overarching principles of the Plan and aim to protect the marine environment from climate change.	✓	✓	✓	✓	✓

Plan / Programme / Strategy	Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
			Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
Metropolitan Glasgow Strategic Drainage Partnership (MGSDP) Surface Water Management Masterplan, 2016	The vision of the MGSDP to 2060 is "to transform how the city region thinks about and manages rainfall to end uncontrolled flooding and improve water quality". This vision will be delivered through five overarching objectives: ▪ Flood risk reduction. ▪ River water quality improvement. ▪ Enabling economic development. ▪ Habitat improvement. ▪ Integrated investment planning.	The Strategy should align with the objectives of the Strategy and aim to provide support to meet the 2060 Vision.	✓	✓	✓		✓
Political Economy Mapping of Adaptation and Climate Resilience in Glasgow City Region Pilot Study Findings, 2020	This paper presents the results of a pilot study on political economy mapping of regional resilience in Glasgow City Region. The objective was to use the pilot test to determine whether it is possible to complete an assessment of the political economy of climate resilience in a region without first completing a national level assessment.	Key barriers, challenges and opportunities identified should be considered within the Strategy	✓	✓	✓		
Climate Risk and Opportunity Assessment for Glasgow City Region	These risk assessments assess gaps in Glasgow City Region's current approach to managing climate risk and cover the following key themes: ▪ Infrastructure; ▪ Built environment; ▪ Society and human health; ▪ Natural environment; ▪ Economy, business and industry; and ▪ International and cross cutting.	These risk and opportunity assessment form a key part of the Strategy.	✓	✓	✓	✓	✓

Plan / Programme / Strategy	Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
			Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
Economic implications of climate change for Glasgow City Region – Adaptation Report, 2019	The framework is designed to help identify those options that have a strong economic justification. It focuses on three different types of early priorities: 1. Addressing existing climate risks in the region by implementing 'no-regret' or 'low-regret' actions. 2. Intervening early to ensure that adaptation is considered in decisions that have long lifetimes, such as major infrastructure developments, in order to avoid 'lock-in'. 3. Starting the early adaptation steps, and putting plans in place, for decisions that have long lead times or involve long-term major risks.	This report forms a key evidence base for the Strategy	✓	✓	✓	✓	✓
Clyde Plan, Strategic Development Plan, 2017	The Strategic Plan is based upon four planning outcomes of: ▪ successful and sustainable places – supporting sustainable economic growth and regeneration and the creation of well-designed places; ▪ low carbon places – reducing carbon emissions and adapting to climate change; ▪ natural and resilient places – helping to protect and enhance the natural and cultural assets and facilitating their sustainable use; and, ▪ connected places – supporting better transport and digital connectivity.	Objectives of the Strategy should be aligned with the strategic development plan	✓	✓	✓	✓	✓

Plan / Programme / Strategy	Environmental Objectives/Key Messages of the PPS	Implications for the Strategy	Compliance with Strategy Objectives (refer to Section 2.3 for the draft vision and objectives)				
			Vision	Obj. 1	Obj. 2	Obj. 3	Obj. 4
Glasgow City Region Economic Action Plan,	The Glasgow City Region Economic Strategy sets out a vision for 2035 – "*A strong, inclusive, competitive and outward-looking economy, sustaining growth and prosperity with every person and business reaching their full potential*"	The Strategy shouldn't compromise the success of the key objectives but look at ways to integrate.	✓		✓	✓	
Regional Transport Strategy Delivery Plan 2018/19 - 2020/21	The Plan is structured around the four strategy outcomes - Attractive Seamless Reliable Travel, Improved Connectivity, Access for All and Reduced Emissions.	The Strategy should align approaches with the delivery particularly in regard to reducing emissions.	✓		✓		✓

Appendix C

DRAFT ASSESSMENT MATRICES

Table C1 – Draft Assessment of Alternatives Matrix

Alternative	Natural Captial	Climatic Factors	Population and Human Health	Biodiversity	Landscape	Cultural Heritage	Water Environment	Air Quality	Material Assets (Incl Soil Resources)	Commentary
Alternative 1										
Alternative 2										
Alternative 3										

Table C2 – Draft Compatibility Assessment Matrix

Scoring Framework		SEA Objective 1	SEA Objective 2	SEA Objective 3	SEA Objective 4	SEA Objective 5	SEA Objective Cont' d	Summary Score	Assessment of Compatibility
✓	Vision / Objective supportive of SEA Objective								▪ Assessment of vision and objectives ▪ Comments on compatibility ▪ Comments on proposed amendments to vision and objectives
X	Conflict between draft Strategy and SEA Objectives								
0	No identified conflict / support								
?	Uncertain								
Vision									
Draft Strategy Objective 1									
Draft Strategy Objective 2									
Draft Strategy Objective 3									
Summary Score									
Summary Comments		Comment on delivery of the SEA Objectives and any recommendations for updates	Comment on delivery of the SEA Objectives and any recommendations for updates	Comment on delivery of the SEA Objectives and any recommendations for updates	Comment on delivery of the SEA Objectives and any recommendations for updates	Comment on delivery of the SEA Objectives and any recommendations for updates	Comment on delivery of the SEA Objectives and any recommendations for updates		

Table C3 – Draft Interventions Assessment Matrix

Scoring Framework		SEA Objective 1	SEA Objective 2	SEA Objective 3	SEA Objective 4	SEA Objective 5	SEA Objective Cont' d	Cumulative Effects of the Intervention	Assessment ▪ Identification of likely significant effects ▪ Mitigation measures ▪ Assumptions ▪ Uncertainties ▪ Enhancement measures
++	Major Positive Effect								
+	Positive Effect								
0	Insignificant / no impact								
-	Negative Effect								
--	Major Negative Effect								
Intervention 1									
Intervention 2									
Intervention 3									
Intervention 4									
Interventions cont'd….									
Summary									
Cumulative Effects on the Environment									

Appendix D

CLYDE AND LOCH LOMOND REGION CLIMATE CHANGE RISK ASSESSMENT DATA

CLA - Current Level of Adaptation - 4°C - Low[71]	
Back to Table of Contents	
Select or enter aggregation scale/area	Clyde and Loch Lomond
Select or enter source of flooding	All
Select or enter epoch	2080s

		Percentage				Absolute			
		Contributions to change				Contributions to change			
Metric Name	**Present Day**	**2080s**	**Climate**	**Population**	**Adaptation**	**2080s**	**Climate**	**Population**	**Adaptation**
Exposed population	83,779	-28%	1%	-20%	-8%	60,465	+693	-17,160	-6,847
People counts in bands - Significant	49,492	3%	54%	-31%	-21%	50,771	+26,789	-15,340	-10,170
People counts in bands - Moderate	21,050	-81%	-76%	-5%	0%	4,041	-15,942	-1,110	+43
People counts in bands - Low	13,237	-57%	-77%	-5%	25%	5,653	-10,154	-710	+3,280
Expected Annual Damage: Residential (Direct)	19,363,000	60%	141%	-6%	-75%	30,996,600	+27,292,500	-1,172,300	-14,486,600
Expected Annual Damage: Non-Residential (Direct)	25,657,500	3%	99%	0%	-96%	26,399,300	+25,368,700	+6,200	-24,633,100
Expected Annual Damage: Total (direct and indirect)	80,407,478	29%	118%	-3%	-86%	103,772,332	+94,982,594	-2,216,798	-69,400,942
Residential counts in bands - Significant	21,884	36%	56%	-3%	-17%	29,709	+12,191	-716	-3,651
Residential counts in bands - Moderate	9,340	-71%	-74%	-1%	4%	2,692	-6,948	-99	+399
Residential counts in bands - Low	6,331	-39%	-77%	-1%	40%	3,894	-4,885	-67	+2,514
Non-Residential counts in bands - Significant	5,046	39%	53%	-1%	-13%	7,013	+2,699	-60	-671
Non-Residential counts in bands - Moderate	2,090	-49%	-57%	0%	9%	1,073	-1,200	+0	+183
Non-Residential counts in bands - Low	1,748	-44%	-71%	0%	27%	978	-1,241	+0	+471

[71] Source - Sayers, PB., Horritt, M, Carr, S, Kay, A, Mauz, J., Lamb R, and Penning-Rowsell E (2020) Third UK Climate Change Risk Assessment (CCRA3): Future flood risk. Research undertaken by Sayers and Partners for the Committee on Climate Change. Published by Committee on Climate Change, London.

		Percentage				Absolute			
		Contributions to change				Contributions to change			
Metric Name	**Present Day**	**2080s**	**Climate**	**Population**	**Adaptation**	**2080s**	**Climate**	**Population**	**Adaptation**
BMV agricultural land area in probability bands - Low	17,193,600	-75%	-80%	0%	5%	4,341,390	-13,722,980	+0	+870,770
BMV agricultural land area in probability bands - Moderate (1/75)	29,446,100	-59%	-64%	0%	5%	12,154,200	-18,824,800	+0	+1,532,900
BMV agricultural land area in probability bands - Significant (1/30)	58,764,000	51%	55%	0%	-4%	88,910,000	+32,553,400	-2,000	-2,405,400
No. of hectares most important habitats exposed to frequent flooding	41,492,100	40%	45%	0%	-6%	57,886,900	+18,755,900	-400	-2,360,700
Ramsar area in probability bands - Significant	7,395,940	29%	33%	0%	-5%	9,518,020	+2,473,730	-170	-351,480
Ramsar area in probability bands - Moderate	3,160,130	-35%	-40%	0%	5%	2,069,670	-1,251,360	+0	+160,900
Ramsar area in probability bands - Low	2,125,430	-46%	-55%	0%	9%	1,138,940	-1,178,480	+0	+191,990
SAC area in probability bands - Significant	11,355,600	48%	55%	0%	-7%	16,838,600	+6,257,500	-100	-774,400
SAC area in probability bands - Moderate	5,060,030	-57%	-67%	0%	10%	2,152,440	-3,398,640	+0	+491,050
SAC area in probability bands - Low	3,119,500	-83%	-92%	0%	9%	544,089	-2,858,802	+0	+283,391
SPA area in probability bands - Significant	22,740,600	39%	44%	0%	-5%	31,530,300	+10,024,600	-100	-1,234,800
SPA area in probability bands - Moderate	10,253,900	-52%	-60%	0%	7%	4,914,240	-6,102,380	+0	+762,720
SPA area in probability bands - Low	5,597,990	-61%	-69%	0%	8%	2,193,080	-3,878,340	+0	+473,430
Category A infrastructure - Significant	24	0%	5%	-1%	-3%	24	+1	-0	-1
Water sites counts in probability bands - Significant	0	0%	0%	0%	0%	0	+0	+0	+0
Water sites counts in probability bands - Moderate	0	0%	0%	0%	0%	0	+0	+0	+0
Water sites counts in probability bands - Low	0	0%	0%	0%	0%	0	+0	+0	+0
Sewage treatment works counts in probability bands - Significant	21	1%	3%	-1%	-1%	21	+1	-0	-0

		Percentage				Absolute			
		Contributions to change				Contributions to change			
Metric Name	**Present Day**	**2080s**	**Climate**	**Population**	**Adaptation**	**2080s**	**Climate**	**Population**	**Adaptation**
Sewage treatment works counts in probability bands - Moderate	1	18%	13%	0%	5%	2	+0	+0	+0
Sewage treatment works counts in probability bands - Low	1	-67%	-82%	0%	15%	0	-1	+0	+0
Power stations counts in probability bands - Significant	4	-2%	14%	0%	-16%	4	+1	+0	-1
Power stations counts in probability bands - Moderate	0	74%	45%	0%	29%	1	+0	+0	+0
Power stations counts in probability bands - Low	1	-24%	-70%	0%	46%	1	-1	+0	+0
Substations counts in probability bands - Significant	16	5%	47%	-2%	-40%	16	+7	-0	-6
Substations counts in probability bands - Moderate	6	-14%	-63%	0%	49%	6	-4	+0	+3
Substations counts in probability bands - Low	6	-5%	-56%	0%	52%	6	-3	+0	+3
Category B infrastructure - Significant	295	39%	47%	-2%	-6%	409	+139	-7	-18
Railways length in probability bands - Significant	312,630	63%	66%	-1%	-2%	510,963	+207,713	-1,665	-7,715
Railways length in probability bands - Moderate	201,716	-90%	-92%	0%	2%	19,516	-186,305	+0	+4,106
Railways length in probability bands - Low	25,943	-64%	-71%	0%	7%	9,412	-18,382	+0	+1,851
Railway stations counts in probability bands - Significant	47	16%	25%	-4%	-5%	55	+12	-2	-2
Railway stations counts in probability bands - Moderate	12	-76%	-85%	0%	9%	3	-10	+0	+1
Railway stations counts in probability bands - Low	2	-43%	-53%	0%	10%	1	-1	+0	+0
Landfill sites counts in probability bands - Significant	1	0%	0%	0%	0%	1	+0	+0	+0
Landfill sites counts in probability bands - Moderate	0	0%	0%	0%	0%	0	+0	+0	+0
Landfill sites counts in probability bands - Low	0	0%	0%	0%	0%	0	+0	+0	+0
Emergency services counts in probability bands - Significant	22	67%	69%	-2%	0%	37	+15	-0	-0

		Percentage				Absolute			
		Contributions to change				Contributions to change			
Metric Name	**Present Day**	**2080s**	**Climate**	**Population**	**Adaptation**	**2080s**	**Climate**	**Population**	**Adaptation**
Emergency services counts in probability bands - Moderate	11	-38%	-38%	0%	1%	7	-4	+0	+0
Emergency services counts in probability bands - Low	11	-72%	-74%	0%	3%	3	-8	+0	+0
Care homes counts in probability bands - Significant	14	48%	56%	-1%	-7%	20	+8	-0	-1
Care homes counts in probability bands - Moderate	6	-63%	-68%	0%	6%	2	-4	+0	+0
Care homes counts in probability bands - Low	4	-78%	-85%	0%	6%	1	-3	+0	+0
GPs surgeries counts in probability bands - Significant	25	48%	69%	-2%	-19%	37	+17	-1	-5
GPs surgeries counts in probability bands - Moderate	12	-79%	-81%	0%	2%	2	-10	+0	+0
GPs surgeries counts in probability bands - Low	7	-26%	-84%	0%	58%	5	-6	+0	+4
Hospitals counts in probability bands - Significant	63	40%	43%	-2%	-2%	88	+27	-1	-1
Hospitals counts in probability bands - Moderate	25	-95%	-97%	0%	2%	1	-24	+0	+1
Hospitals counts in probability bands - Low	3	-100%	-100%	0%	0%	0	-3	+0	+0
Schools counts in probability bands - Significant	124	39%	48%	-2%	-7%	172	+60	-3	-9
Schools counts in probability bands - Moderate	53	-95%	-96%	0%	1%	3	-51	+0	+0
Schools counts in probability bands - Low	10	-37%	-89%	0%	51%	6	-9	+0	+5

7 Lochside View
Edinburgh Park
Edinburgh, Midlothian
EH12 9DH

wsp.com