Strategy & Programmes Committee

SPT Climate Change Strategy: Climate Resilience and Adaptation Plan

Date of meeting 13 June 2025 **Date of report** 3 June 2025

Report by Head of Policy & Planning

1. Object of report

To update the Committee on the:

- developments in relation to SPT's Climate Change Strategy; and
- draft SPT Climate Adaptation Action Plan (see Appendix 1).

2. Background to report

2.1. SPT Climate Change Strategy

SPT's Climate Change Strategy, approved by the Partnership in 2023, set out a dual approach to address both mitigation and adaptation, supporting our statutory commitments including national, regional, and local emission reduction targets. This includes the development of a Net-Zero Action Plan and a Climate Resilience and Adaptation Plan to guide delivery.

SPT's Net-Zero Action Plan sets out targeted measures to reduce emissions across our corporate estate and operations structured around six key delivery themes, aligned to SPT's principal emissions sources. The supporting Net-Zero Pathway outlines the trajectory to achieve zero carbon emissions across Scope 1 and Scope 2 by 2030, and net zero carbon across our Scope 3 emissions by 2045.

2.2. Net-Zero Delivery Group

To support implementation and improve transparency on emissions reduction progress and projects delivered through the Action, governance structures have been strengthened through establishment of the Net-Zero Delivery Officer Group. The Group supersedes SPT's Carbon Management Working Group (CMWG) to enable coordinated oversight, monitor progress and ensure integration of climate action across operational planning and delivery.

To date the group has taken forward critical work to shape a coherent delivery framework and building a shared understanding of the requirements for Net-Zero implementation across all areas of SPT. This has included advanced programme scoping, securing cross departmental engagement, and refinement of the delivery programme to focus on high impact actions that reflect operational realities and resource constraints.

A key focus for 2025/2026 will be the development of Building Assessment Reports (BARs) for SPT's property portfolio, to identify practical, site-specific recommendations to

support SPT's transition from natural gas, improve operational efficiency and assess readiness for future heat network connection.

2.3. Climate action groups

SPT continue to actively participate in Climate Ready Clyde, Sustainable Glasgow and the Public Sector Climate Adaptation Network, all of which are central to driving coordinated action on climate resilience within the region. As valuable platforms for collaboration, engaging in these climate action networks enables SPT to remain informed and up to date on the latest policy developments and emerging risks.

3. Outline of proposals

3.1 SPT Climate Resilience and Adaptation Plan

SPT is increasingly exposed to the impacts of climate change, including more frequent and intense rainfall, rising temperatures, extreme heat events and flooding. These evolving climate pressures present challenges to the integrity and reliability of our physical assets, transport services, and key infrastructure dependencies. In response, we are committed to future-proofing our estate and operations, ensuring the remain resilient and adaptable in a changing climate.

SPT's Climate Resilience & Adaptation Plan (see Appendix 1) has been developed to identify potential risks and opportunities, through development of a Climate Risk Assessment (CRA), which identifies and prioritises the climate hazards of highest threat to the different assets within SPT's corporate estate. The plan aligns with the outcomes in the Scottish Climate Change Adaptation Programme (SCCAP) and will integrate long-term sustainable solutions that protect our infrastructure and services while embedding climate adaptation across our corporate estate.

The plan focuses on opportunities for biodiversity enhancement, nature-based solutions and ensuring the actions contribute positively to the wider environment and local communities wherever possible. It aims to reduce risk exposure and vulnerability for each asset and associated hazard. This includes a variety of strategies that can be considered, such as infrastructure improvements, implementation of sustainable drainage systems, and engagement in community awareness programs. Priority actions for 2025-2035 and beyond include:

- Short term actions to enhance Subway maintenance, SuDs implementation, integration of nature-based solutions at Buchanan Bus Station, and improving energy efficiency through natural ventilation systems and water-efficient fixtures;
- Medium term actions to further develop Subway flood defences, explore rainwater harvesting, and integrate renewable energy sources; and
- Long term actions to enhance public transport information systems to keep passengers informed about weather related disruptions, and digital SMART technology generation including smart drainage systems to improve flood resilience for SPT.

As SPT moves forward with the actions, it is essential to focus on fostering effective partnerships, ensuring alignment with regional and national strategies, addressing policy uncertainties, and collaborating with local authorities. These steps are crucial to achieving SPT goals, driving impactful change, and building a more sustainable and resilient future.

4. Committee action

The Committee is recommended to:

(i) Note the content of this report; and

(ii) Note the SPT's Climate Resilience and Adaptation Plan attached at Appendix 1.

5. Consequences

Policy consequences	*Delivery of climate change mitigation, carbon management and climate change adaptation measures is in line with the new RTS.*
Legal consequences	*None at present.*
Financial consequences	*Delivery of some actions will be dependent upon government support and new funding.*
Personnel consequences	*None at present.*
Equalities consequences	*It is essential that transport policies in relation to climate change contribute to the delivery of a Just Transition to achieve a net zero and climate resilient economy that delivers fairness and tackles inequality and injustice. The Climate Change Strategy has undergone Equality Impact Assessment screening.*
Risk consequences	*None at present.*
Climate Change, Adaptation & Carbon consequences	*The delivery of an effective SPT climate change and carbon management strategy and action plan, positive procurement policies and effective partnership working can help reduce SPT's carbon footprint and wider efforts to reduce emission.*

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Appendix 1: SPT Climate Change Adaptation Action Plan

Change list

Version	Date	Description of the change	Reviewed	Approved by
1	27/02/25	Working Draft	EB	JS
2	11/04/25	Final version	EB	KC

Sweco UK Limited	Reg. No. 2888385
Project Name	N/A
Project Number	N/A
Client	N/A
Author	Kassim Caratella
Controlled by	EB
Approved by	JS
Date	2025-02-19
Document number	1
Document reference	65214354 SPT Climate Change Adaptation Action Plan 110425_KC+JS REV - Copy

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Introduction

Strathclyde Partnership for Transport (SPT) is the regional transport authority for the West of Scotland, responsible for planning, delivering, and coordinating transport services that support connectivity, economic growth, and social inclusion. SPT operate and maintain the Glasgow Subway - the third oldest in the world - manage key transport hubs such as Buchanan, East Kilbride and Greenock bus stations, and support local and community bus services across the region. SPT's corporate estate plays a critical role in enabling the efficient operation of these services, ensuring safe and accessible transport infrastructure for the people and the businesses that rely on it.

Situated within the Glasgow City Region, SPT is increasingly exposed to the impacts of climate change, including more frequent and intense rainfall, rising temperatures, extreme heat events and flooding. These evolving climate pressures present challenges to the integrity and reliability of our physical assets, transport services, and key infrastructure dependencies. In response, we are committed to future-proofing our estate and operations, ensuring the remain resilient and adaptable in a changing climate.

The Climate Change Scotland Act 2009 requires SPT to help support delivery of the adaptation objectives and outcomes in the Scottish Climate Change Adaptation Programme. Previous stages of adaptation planning included initial risk mapping to produce an Organisational Adaptation Risk Map. This draws on assumptions about the relative vulnerability of key groups of assets and services to disruption from extreme climate events and the consequences of their disruption.

While this plan focuses on strengthening the climate resilience of our corporate estate, we recognise that our operations are intrinsically linked to the wider transport network and the communities that surround it. Climate risks are regional challenges that require coordinated responses across the transport sector. This plan therefore aligns with the objectives of the Regional Transport Strategy (RTS), which sets out a vision for the long-term development of the regions transport network. The RTS explicitly acknowledges the need for adaptation alongside mitigation, ensuring that transport, infrastructure and services can withstand and respond to the impacts of climate change.

Purpose and Vision

To further SPT’s existing effort in adaptation planning, SPT commissioned Sweco UK to develop a comprehensive Climate Change Risk and Opportunity Assessment and a Climate Resilience and Adaptation Action Plan, focusing exclusively on SPT’s corporate estate and associated responsibilities.

The purpose of SPT's initiative is to identify potential risks and opportunities, promote biodiversity, and implement sustainable solutions, all while aligning with the objectives and outcomes in the Scottish Climate Change Adaptation Programme (SCCAP) and SPT's Climate Change & Net-Zero Strategy. Through stakeholder engagement and prioritised adaptation measures, the project aspires to contribute to the overall goal of eliminating greenhouse gas emissions and adapting transport services to the challenges posed by climate change, ultimately fostering social equality and inclusivity within the community.

SPT's approach to climate action is underpinned by two complementary strategies, our corporate Climate Change Strategy and Net-Zero Action Plan, which focuses on decarbonisation and emissions reduction, and this Climate Resilience and Adaptation Plan which ensures that our assets and operations remain resilient to future climate change impacts. Together, these strategies reflect our commitment to integrating climate considerations into all aspects of our decision making, future proofing our infrastructure and supporting Scotland's transition to a Net Zero and climate resilient future.

Aim

SPT aims to enhance resilience across our corporate estate and operations, ensuring continuity and reliability in the face of climate risks. We will integrate long-term sustainable solutions that protect our infrastructure and services while embedding climate adaptation across our corporate estate. Additionally, we aim to wherever possible maximise opportunities for biodiversity enhancement, nature-based solutions, supporting a green recovery and ensuring our actions contribute positively to the wider environment and local communities.

We have identified the following key aims:

- To foster a culture of climate resilience within SPT and allocate resources effectively to support adaptation efforts.
- To increase understanding and awareness of climate change risks and adaptation strategies among stakeholders internally and externally.
- To develop and implement effective adaptation plans and measures to address climate risks to SPT and build resilience into our operations and services.
- To foster collaboration and partnerships with stakeholders to enhance climate resilience and adaptation efforts.

Objectives

Through the development of a Climate Risk Assessment (CRA), the objective is to identify opportunities and risks related to climate change, pinpointing specific climate risks, their locations, and the impacts on each SPT asset. The CRA identifies and prioritises the climate hazards of highest threat to the different assets within SPT's corporate estate. The priority areas, will inform the adaptation opportunities which inform the compilation of the climate change risk and opportunity register to assess, manage, and report climate risks which will be detailed within the final Climate Change Adaptation Action Plan.

Project Background

Climate change represents a critical threat to global stability, driven largely by human activities that increase greenhouse gas (GHG) emissions, such as the burning of fossil fuels, deforestation, and industrial processes. The consequences of these actions manifest in rising global temperatures, altering precipitation patterns, and an increase in the frequency and severity of extreme weather events, including storms, droughts, and floods[i]. The impacts are far-reaching, affecting the built environment, infrastructure, agriculture, water resources, biodiversity, and human health, which underscores the urgent need for comprehensive action to mitigate these effects.

Building resilience in communities and ecosystems is essential to adapt to the inevitable impacts of climate change. This can be achieved through various strategies e.g. investing in sustainable infrastructure, improving disaster preparedness, promoting biodiversity, and implementing policies that encourage sustainable land and resource management. By prioritising resilience, we can better protect vulnerable populations, preserve natural ecosystems, and ensure that societies can thrive despite the challenges posed by a changing climate. Collaborative efforts at local, regional, national, and global levels are crucial to fostering a resilient future, where communities are equipped to face environmental changes while also contributing to the overall reduction of GHG emissions.

SPT are committed to futureproofing their physical assets, transport services, projects, and key infrastructure dependencies to climate change. With their commitment to developing their resilience to climate change, SPT seek the development of a Climate Resilience and Adaptation Action Plan with the aim to maximise wider sustainability opportunities including, enhancing biodiversity, supporting a green recovery, and promoting nature-based solutions (NbS) where possible.

Sweco has been engaged to support SPT in the development of a Climate Risk Assessment and a Climate Change Resilience and Adaptation Action Plan. The aim of the project is to identify climate-related risks, vulnerabilities and opportunities arising from climate change, and formulate strategic measures to adapt to these changes effectively. This work will also aim to maximise opportunities to enhance biodiversity, support a green recovery and promote sustainable, nature-based solutions.

Case Studies: SPT Progress to date

1. Past action – Flood mitigation and operational resilience

Enhancing flood resilience at key subway stations

SPT operates the Glasgow subway, one of the world's oldest systems, and ensuring its resilience to extreme weather events is critical to maintaining reliable service for passengers. Over the years, we have implemented a range of flood and weather risk mitigation measures across the network to protect infrastructure, minimise service disruption and enhance passenger safety. Several of our subway stations are located in areas vulnerable to flooding due to their proximity to watercourses or local drainage issues. Key examples include:

- **Kelvinbridge Subway Station,** which is situated close to the River Kelvin, this station faces a heightened flood risk, particularly during periods of prolonged or intense rainfall. To mitigate this risk, we have deployable flood prevention measures at the station entrance, which can be activated when river levels rise, protecting the station and ensuring service continuity.
- **West Street Subway Station** – Heavy rainfall has led to significant ponding outside the station entrance due to issues with the local street drainage system. While this has not impacted the platform or track level, access to the station has occasionally been affected. We continue to work closely with local authorities to monitor and manage surface water drainage in the area to minimise disruption for passengers.

Managing winter weather impacts

Severe snowfall presents additional challenges for subway operations, particularly at key infrastructure points where above ground movements are required.

- **Broomloan Depot** – As the only section of our Subway system exposed to the elements, the yard at our depot is susceptible to disruption during heavy snowfall. Snow accumulation on the tracks can prevent trains from moving between the depot and the tunnels, potentially impacting the start of service. To mitigate this, SPT has established a snow clearance procedure where trains are run up and down the yard to help keep tracks clear.
- **Subway and bus station access** – During significant winter weather, SPT ensures that footpaths, station entrances and key passenger areas are kept clear through a proactive winter maintenance regime. Our incumbent contractor is responsible for gritting and snow clearance, ensuring safe access to stations and minimising disruption to services.

These flood and weather risk management interventions demonstrate our longstanding commitment to operational resilience to successfully minimise service disruption, safeguarding passenger accessibility and protecting key infrastructure assets. This plan will build on these existing measures to ensure that SPT continues to strengthen the resilience of the Subway network in response to increasing impacts of climate change.

2. Present – Delivering Adaptation through the Action Plan

SPT is actively embedding climate adaptation across the organisation through the implementation of this Climate Resilience and Adaptation Plan, ensuring that resilience is a core consideration in decision making and investment planning. We recognise that there are areas of overlap where actions contribute to both adaptation and mitigation outcomes. By integrating adaptation and mitigation where appropriate, we aim to maximise co-benefits, deliver cost effective climate action and contribute to Scotland's wider climate change targets.

A key focus is increasing understanding and awareness of climate change risks across all departments, in line with Adaptation Scotland's Capability Framework. Designed to enable action, the framework outlines four key capabilities essential for the public sector to adapt based on a 'capability-maturity' approach. These are:-

1. Understanding the challenge
2. Organisational culture and resources
3. Strategy, Implementation and Monitoring
4. Working Together

To support this, we have updated our governance structure and internal processes to reflect our Climate Change Strategy and Net-Zero Action Plan, with the establishment of the Net-Zero Delivery Group. The group help to coordinate the delivery and implementation of the Net-Zero Action Plan, of which climate adaptation is a major delivery theme.

Work is underway through the Net-Zero Delivery Group to develop site-specific decarbonisation plans to assess our estate and identify feasible adaptation and mitigation measures which will advance green and blue infrastructure (GBI) initiatives across our estate. As part of this, we have undertaken feasibility assessments for solar PV across key sites to explore opportunities for improving energy efficiency while reducing emissions. We have also secured approval to plant trees at Govan Subway Station, helping to support urban cooling, biodiversity enhancement and surface water management.

3. Future – Integrating Adaptation into future projects

As part of our long term strategy to integrate climate resilience into all aspects of our day-to-day operations, we are committed to embedding climate adaptation principles set out within this plan into the design and delivery of future infrastructure projects.

Buchanan Bus Station Masterplan

The Buchanan Bus Station (BBS) masterplan presents an exciting opportunity to transform our key transport hub in Glasgow's City Centre. The project will explore the future of BBS within the context of significant urban change within the City Centre. The masterplan is assessing how the bus station can better support surrounding developments and contribute to the city's broader regeneration efforts, while also enhancing the user and public experience of the area.

The masterplan will set the direction for future development of the site. Adaptation will be a core consideration throughout the masterplan process, ensuring a future station is resilient to climate risks such flooding, heatwaves, and extreme weather events. This will include green and blue infrastructure (GBI) to manage surface water, improve urban cooling, and enhance biodiversity. The design will also explore opportunities for nature-based solutions, sustainable urban drainage systems (SuDS), and increased energy efficiency through passive heating a cooling techniques and consideration of on-site renewables.

The masterplan will develop with a view to circular economy principles, striving for materials to be reused, repurposed, or recycled wherever possible during construction to minimise waste and resource consumption. We aim to prioritise net-zero operational and embodied carbon, incorporating low-carbon construction methods and sustainable materials to reduce emissions associated with both the construction and long-term operation of the station.

Integration of the findings within this plan will support our efforts to ensure that the new Buchanan Bus Station serves as a forward thinking, climate resilient model that meets the transport needs of the future while supporting Glasgow's Net-Zero ambition. Vitally, it will also help to support the delivery of SPT's corporate Net-Zero pathways and targets.

4. Collaborating on Climate Action

SPT is committed to fostering collaboration and partnerships with stakeholders and key partners to enhance climate resilience and adaptation efforts. Our engagement in a range of regional and city-wide networks allows us to align our efforts with broader climate resilience objectives and share best practices across sectors.

We actively participate in Climate Ready Clyde, Sustainable Glasgow and the Public Sector Climate Adaptation Network, all of which are central to driving coordinated action on climate resilience within the region. As valuable platforms for collaboration, engaging in these climate action networks enables SPT to remain informed and up to date on the latest policy developments and emerging risks.

Climate Ready Clyde - SPT is a member of the Climate Ready Clyde partnership, the regional adaptation partnership for the west of Scotland. The partnership works to assess key climate risks facing the Glasgow City Region and identify and develop action plans to enhance resilience across sectors. Climate Ready Clyde has developed Glasgow City Region's first Adaptation Strategy and Action Plan, launched in June 2021, ahead of COP26 in Glasgow.

The Strategy aims to ensure Glasgow City Region's economy, society and environment is not only prepared for but continues to flourish in the face of the impacts arising from the climate crisis. Together with Network Rail, SPT is a joint lead of the Climate Ready Clyde Regional Transport Climate Resilience Group which works to increase co-ordination among transport partners on climate adaptation and resilience across the regional network, taking forward Flagship Action 8 of the Action Plan.

Sustainable Glasgow - SPT are a board member of Sustainable Glasgow, a council-led initiative formed in 2010 to make Glasgow a world-leading centre for sustainable policy, innovation, and action. As a signatory of the Sustainable Green Economy Hub Charter, SPT have formalised our commitment to act within our own organisation and contribute to a green recovery to radically reduce Glasgow's emissions. As part of the Sustainable Glasgow Green Economy Hub, members signed up to a Charter which contains a pledge to 'Effect significant and demonstrable change in our business practices resulting in an accelerated reduction in climate emissions that contribute to Glasgow's net-zero carbon target.

Public Sector Climate Adaptation Network is a collaborative initiative managed and co-ordinated by Adaptation Scotland, bringing together public sector organisations to provide a forum to exchange experiences and develop consistent, evidence-based approaches to adapting to climate change impacts. Through engagement with other local authorities, infrastructure operators and national bodies we can benchmark our progress and identify and share learning on climate change adaptation. Adaptation Scotland is funded by the Scottish Government and works in alignment with the national climate adaptation policies and strategies, including the Scottish Climate Change Adaptation Programme (SCCAP).

Climate Resilience

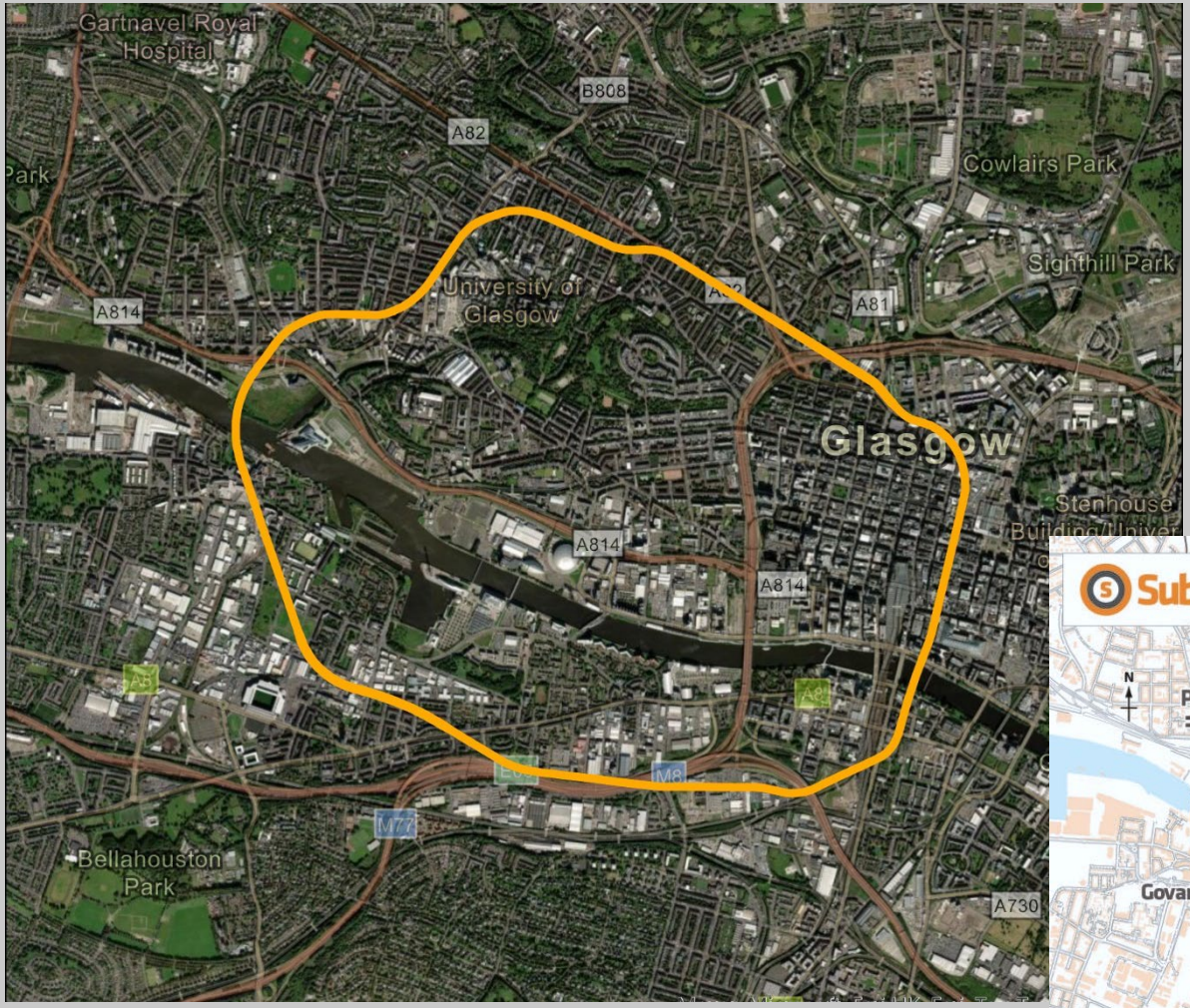
Climate Resilience refers to the ability of a system, community, or individual to anticipate, prepare for, respond to, and recover from the adverse impacts of climate change. It involves strengthening infrastructure, ecosystems, and social systems to withstand and bounce back from climate-related shocks and stresses, such as extreme weather events, flooding, and heatwaves.

Climate Adaptation

Climate Adaptation involves the adjustments made in response to actual or expected climate change impacts. It includes strategies and actions aimed at minimising vulnerabilities and enhancing the capacity to cope with changing climate conditions. Adaptation can take many forms, such as modifying infrastructure, changing agricultural practices, or developing early warning systems to lessen the impacts of climate-related hazards.

Nature-based Solutions (NbS)

NbS are strategies that utilise natural processes and ecosystems to address societal challenges, particularly those related to climate change, environmental degradation, and biodiversity loss. These solutions aim to enhance ecosystem services, improve resilience, and provide benefits for both society and the environment. Examples of nature-based solutions include restoring wetlands to manage flood risks, creating green roofs to reduce urban heat, and reforestation to enhance carbon sequestration and improve air quality. By leveraging the power of nature, NbS offer sustainable and cost-effective ways to tackle pressing issues while promoting biodiversity and ecosystem health.


Gartnavel Royal Hospital
B808
A82
Cowlairs Park
Sighthill Park
A814
University of Glasgow
A81
Glasgow
A814
A814
M8
M77
Bellahouston Park
A730


Subway
SPT
Hillhead
P+Ride
Kelvinbridge
Kelvinhall
Partick
St George's Cross
Cowcaddens
Charing Cross
Govan
Queen Street
Buchanan St
Exhibition Centre
M8
Central
Anderston
River Clyde
Argyle Street
St Enoch
Ibrox
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Context

Policy context

The climate change resilience context for Strathclyde Partnership for Transport (SPT) is shaped by various local, regional, and national policies.

Nationally, SPT's efforts align with the Climate Change Scotland Act 2009, which sets out legislative targets for reducing emissions and enhancing resilience to climate change across Scotland. By adhering to these policies, SPT aims to contribute to Scotland's broader climate goals and ensure sustainable transport solutions that support the community's needs while addressing climate risks. Scotland led the world in becoming one of the first nations to declare a global climate emergency in April 2019. So, as part of the global effort to fight the climate emergency Scotland updated its Climate Change Plan and reflected the increased ambition of the new targets set by the Climate Change (Scotland) Act 2019 to become **'Net Zero' by 2045**, five years ahead of the rest of the UK[ii].

The Climate Change Scotland Act 2009 also promotes climate change resilience in Scotland. Key policies include:

1. **Emission Reduction Targets**: The Act sets legally binding targets for reducing greenhouse gas emissions, aiming for an 80% reduction by 2050 from 1990 levels, with interim targets to track progress.
2. **Climate Adaptation**: The Act emphasises the need to prepare for and adapt to the impacts of climate change, encouraging organisations to assess risks and develop resilience strategies.
3. **Reporting Requirements:** Public bodies are required to report on their climate change actions, including emissions reduction and adaptation measures, ensuring transparency and accountability.
4. **Engagement and Collaboration**: The Act promotes stakeholder engagement and collaboration among public authorities, communities, and businesses to address climate change collectively.
5. **Integration into Policy and Planning**: It encourages the integration of climate considerations into planning and decision-making processes across various sectors to enhance overall resilience.

Glasgow's Climate Plan

Glasgow City Council declared a climate and ecological emergency at its meeting on the 16th of May 2019. The Climate Emergency Working Group produced a report, with the input of many expert stakeholders, which made 61 recommendations, with a target for the city to achieve

carbon neutrality by the year 2030[iii]. Glasgow's Climate plan sets out a timeline of activities against the 61 recommendations from the Working Group looking to ensure that these will help to deliver a healthier, more equitable and resilient city.

As the Regional Transport Partnership for the west of Scotland and owner-operator of Glasgow Subway, SPT will seek to also align their Climate Change Adaptation Action Plan to Glasgow City Council's City Plan 2 where SPT is working closely with partners in the development which includes several policies focused on climate resilience, such as:

1. **Sustainable Development**: Promoting sustainable land use and development practices that minimise environmental impact and enhance resilience to climate change.
2. **Green Infrastructure:** Encouraging the integration of green spaces, trees, and biodiversity into urban planning to mitigate heat, manage stormwater, and improve air quality.
3. **Energy Efficiency:** Supporting initiatives that improve energy efficiency in buildings and infrastructure, contributing to reduced carbon emissions and enhanced resilience.
4. **Flood Risk Management**: Implementing measures to assess and manage flood risks, ensuring that new developments consider potential flooding and climate impacts.
5. **Transportation Policies**: Promoting sustainable transport options to reduce reliance on fossil fuels and enhance mobility while considering the effects of climate change on transport infrastructure.
6. **Community Engagement**: Involving local communities in climate resilience planning and decision-making processes to ensure that adaptation strategies address the needs of all residents, particularly vulnerable groups.

Frameworks and Influence

The Scottish National Adaptation Plan (SNAP) and the Scottish Climate Change Adaptation Programme (SCCAP) are two key climate change initiatives in Scotland. The SNAP provides a broader framework for adapting to climate change impacts across Scotland, focusing on long-term strategic goals and actions. In contrast, SCCAP outlines specific measures and actions aimed at implementing adaptation strategies in various sectors, including transport, health, and infrastructure. While both documents aim to enhance resilience to climate change, they serve different purposes within Scotland's overall climate strategy.

Scottish National Adaptation Plan

The Scottish National Adaptation Plan outlines the framework for adapting to the impacts of climate change across various sectors in Scotland. It emphasises the need for resilience in infrastructure, ecosystems, and communities to effectively manage climate risks and seize opportunities for

sustainable development. The plan focuses on key areas such as health, transport, and urban planning, promoting collaboration among stakeholders to enhance adaptive capacity.

SPT can align with the Scottish National Adaptation Plan by implementing strategies that prioritises climate resilience in its transport services. This will include conducting a Climate Risk Assessments for its corporate estate, integrating sustainable practices into its operations, engaging with stakeholders to address vulnerabilities, and ensuring that transport infrastructure is designed to withstand climate impacts. Additionally, SPT can promote awareness and participation among the communities it serves, contributing to the overall goals of enhancing resilience and sustainability in the region. Regular monitoring and evaluation of these efforts will further ensure alignment with the national adaptation objectives.

Adaptation Capability Framework – Adaptation Scotland

The Adaptation Capability Framework in Scotland is a structured approach designed to help organisations build resilience to the impacts of climate change. It provides guidance on integrating climate adaptation into strategic planning, decision-making, and operations. The framework aims to enhance organisational capacity to understand, manage, and reduce climate risks by promoting adaptive measures, improving infrastructure resilience, and ensuring sustainable development practices. It encourages collaboration, knowledge sharing, and continuous improvement in climate adaptation efforts across various sectors.

SPT will align with the Adaptation Capability Framework to ensure a comprehensive approach to climate adaptation, enhancing resilience across the transportation network and integrating sustainability into infrastructure planning and development.

Scottish National Adaptation Plan

The Scottish National Adaptation Plan is a strategic framework developed by the Scottish Government to address climate change impacts and enhance resilience across various sectors in Scotland. It aims to reduce vulnerability, improve adaptive capacity, and integrate climate adaptation into policies, planning, and practices. The plan outlines key objectives, actions, and priorities to support sustainable development, promote collaboration among stakeholders, and encourage evidence-based decision-making.

SPT (Strathclyde Partnership for Transport) will align with the Scottish National Adaptation Plan by implementing measures to enhance resilience within the transport network. This may include integrating climate adaptation into infrastructure planning and development, improving emergency response strategies, and fostering collaboration with relevant stakeholders to ensure a comprehensive approach to climate adaptation. By aligning with the plan, SPT can contribute to sustainable and resilient transportation systems in Scotland.

SEPA

Scottish Environment Protection Agency (SEPA) is Scotland's environmental regulator, responsible for protecting and improving the environment. SEPA's work includes monitoring and regulating activities that can impact the environment, such as pollution control, waste management, and water quality. SEPA also provides information and guidance on environmental issues and works to promote sustainable development and environmental protection across Scotland.

SPT will align with the latest SEPA data and guidance in relation to flood maps and strategies, which are due to be published in 2025.

National Flood Resilience Strategy

The National Flood Resilience Strategy for Scotland is a comprehensive framework designed to enhance Scotland’s ability to withstand and recover from flood events. The strategy focuses on several key areas to improve flood resilience, including the development of innovative flood defence infrastructure, improved forecasting and early warning systems, community engagement and education, and promoting sustainable land use practices. It aims to minimise the impact of flooding on communities, protect critical infrastructure, and ensure that Scotland's environment and economy can adapt to the challenges posed by climate change and increased flood risks.

SPT will align with the National Flood Resilience Strategy for Scotland through their climate resilience actions by implementing advanced flood defence measures, enhancing forecasting and early warning systems, and promoting sustainable land use practices to safeguard their infrastructure and communities against the impacts of flooding and climate change.

Scottish Climate Change Adaptation Programme

The objectives and outcomes of the SCCAP are applied within the Climate Change Adaptation Action Plan in the following ways:

1. **Risk Assessment and Management**: conduct a thorough assessment of climate-related risks to SPT’s corporate estate, aligning with SCCAP's objective to identify vulnerabilities.
2. **Enhancing Resilience**: By integrating climate resilience into planning and operations, SPT are ensuring that their assets, such as the Glasgow Subway and bus services, are better equipped to withstand extreme weather events and changing climatic conditions, supporting SCCAP’s focus on building adaptive capacity.

3. **Biodiversity and Ecosystem Services**: SPT are incorporating nature-based solutions (NbS) into its adaptation plan, promoting biodiversity and utilising natural processes to enhance the resilience of transport systems, which aligns with SCCAP outcomes focusing on ecosystem health.
4. **Stakeholder Engagement**: SPT fostered stakeholder collaboration with Glasgow council and other stakeholders from the outset of the development of the action plan to ensure that diverse perspectives are considered, reflecting SCCAP's emphasis on participatory approaches.
5. **Monitoring and Evaluation**: The plan identifies Monitoring Evaluation and Research (MER) indicators to support with climate change action planning and assess the effectiveness of adaptation measures implemented by SPT. This will align with SCCAP's focus on evaluating progress and adapting strategies as necessary.

By embedding these elements into their Climate Change Adaptation Action Plan, SPT can contribute to the overarching goals of the SCCAP while enhancing the resilience of their operations and the communities they serve.

The National Transport Strategy 2 (NTS2) Delivery Plan

The National Transport Strategy 2 Delivery Plan sets out the Scottish Government's vision for a transport system that is sustainable, inclusive, and accessible, with a strong emphasis on addressing climate change and reducing emissions. It outlines key priorities, such as enhancing public transport, promoting active travel, and ensuring equitable access to transport services for all communities, including vulnerable groups.

SPT are aligning its Climate Change Adaptation Action Plan with the National Transport Strategy 2 by focusing on the following areas:

1. **Sustainable Transport Solutions**: Prioritising projects that enhance public transport and active travel options, thereby reducing reliance on private vehicles and lowering carbon emissions.
2. **Equitable Access**: Ensuring that climate adaptation measures consider the needs of all demographics, particularly vulnerable groups, to promote social equality in transport services.
3. **Stakeholder Engagement**: Collaborating with local communities, stakeholders, and service users to gather insights and ensure that the adaptation plan reflects the needs and priorities of those affected by climate change.

4. **Monitoring and Evaluation**: Establishing mechanisms to regularly assess the effectiveness of adaptation actions, ensuring they remain aligned with national legislation and evolving climate challenges.

SPT's Climate Change and Net Zero Strategy

At the local level, SPT's initiatives are guided by its Climate Change & Net-Zero Strategy, focusing on eliminating greenhouse gas emissions and adapting transport services to climate impacts. The organisation engages with service users and internal departments to address the needs of different demographics, especially vulnerable groups. SPT has included adaptation as a core delivery area within their corporate Climate Change Strategy and Net-Zero Action Plan. This plan aims to further this work to align our corporate Strategy within this framework, ensuring a proactive and comprehensive approach to climate change risk and opportunity assessment. This assessment will enable us to integrate climate resilience into our operations and explore opportunities to enhance community and local resilience, providing co-benefits in a social, economic and environmental context wherever possible.'

Climate context

The existing climate of Glasgow is characterised by a temperate maritime climate, with mild winters and cool summers. Glasgow city experiences moderate temperatures, with average annual temperature around 9°C. Western Scotland experiences some of the highest rainfall levels in the UK, especially in the western hills and mountains, resulting in Glasgow, especially areas around the River Clyde, being a high flood risk area.

The impacts of climate change on the region, include rising temperatures and changing precipitation patterns, which could affect local biodiversity, water resources, and flood risks. Predicted climate changes by 2100 indicate that Glasgow could experience warmer temperatures, with projections suggesting an increase of 2°C to 3°C. There may be an increase in the frequency and intensity of extreme weather events, such as heavy rainfall and flooding, as well as potential impacts from sea-level rise. These changes are expected to affect the city's infrastructure, ecosystems, and communities, necessitating adaptation measures to enhance resilience to these climate challenges.

Climate Ready Clyde undertook scenario analysis on climate change projections that Glasgow will be exposed to, as part of the Glasgow City Region Climate Adaptation Strategy and Action Plan. Under all climate scenarios, the following would occur:

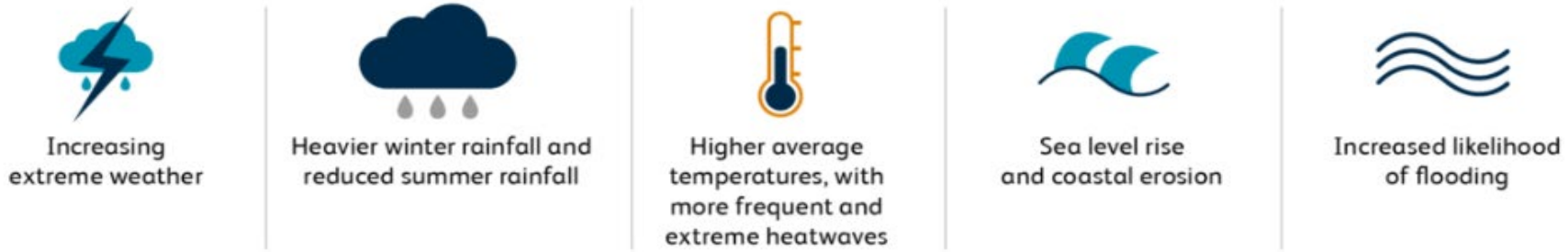


Figure 1: Climate hazard projections from UKCP18 (source: Climate Ready Clyde)

The spatial maps display the variation in:

- Temperature change (˚C)
- Surface water flooding (1 in 200 year)
- River flooding (1 in 200 year)
- Coastal flooding (1 in 200 year)
- Precipitation change (%)

Between two climate scenarios:

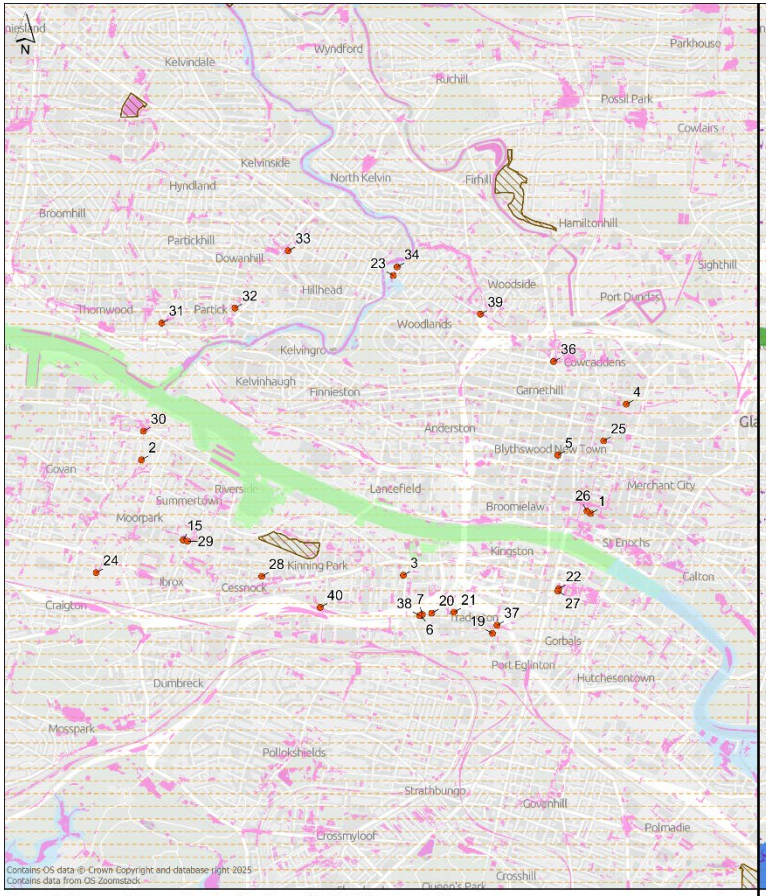
- RCP2.6
  (reflective of annual temperature change with a median of 1.5)

- RCP8.5
  (reflective of annual temperature change with a median of 4)

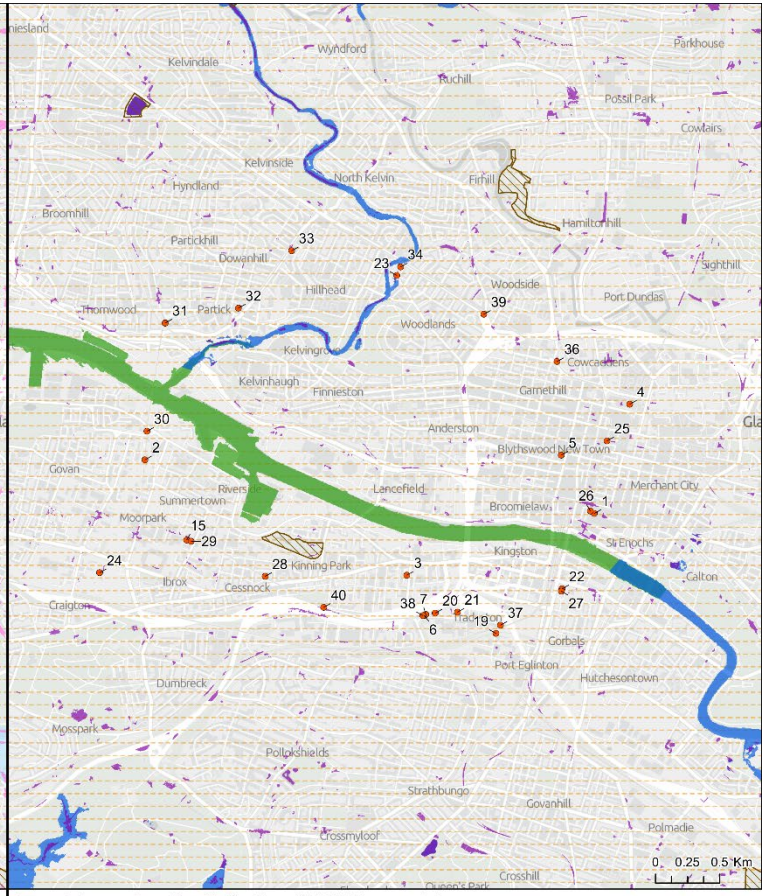
For assets:

- Asset 1 – 7
- Assets 12, 15, 19 & 20
- Assets 21 – 30
- Assets 31 – 40

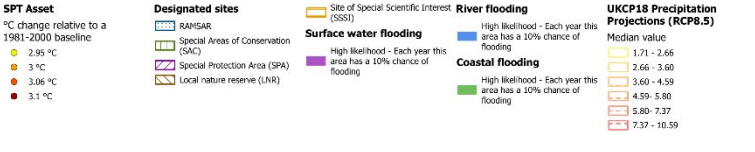
See Appendix 1 for Asset ID



Annual change 1.5 median (reflective of RCP2.6 scenario)



Annual change 4 median (reflective of RCP8.5 scenario)



The spatial maps display the variation in:

- Temperature change (˚C)
- Surface water flooding (1 in 200 year)
- River flooding (1 in 200 year)
- Coastal flooding (1 in 200 year)
- Precipitation change (%)

Between two climate scenarios:

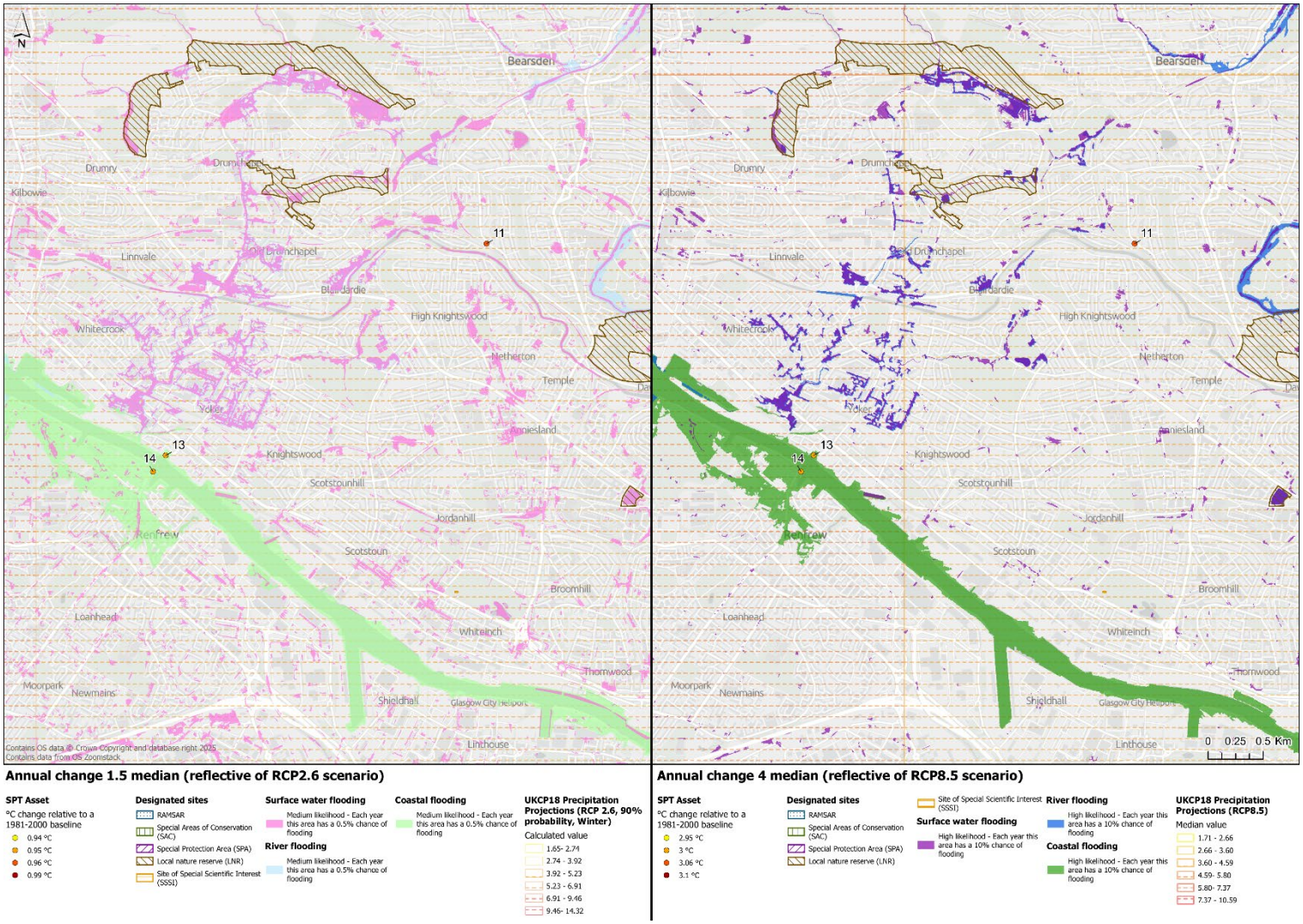
- RCP2.6
  (reflective of annual temperature change with a median of 1.5)

- RCP8.5
  (reflective of annual temperature change with a median of 4)

For assets:

- Asset 11
- Asset 13
- Asset 14

See Appendix 1 for Asset ID



The spatial maps display the variation in:

- Temperature change (˚C)
- Surface water flooding (1 in 200 year)
- River flooding (1 in 200 year)
- Coastal flooding (1 in 200 year)
- Precipitation change (%)

Between two climate scenarios:

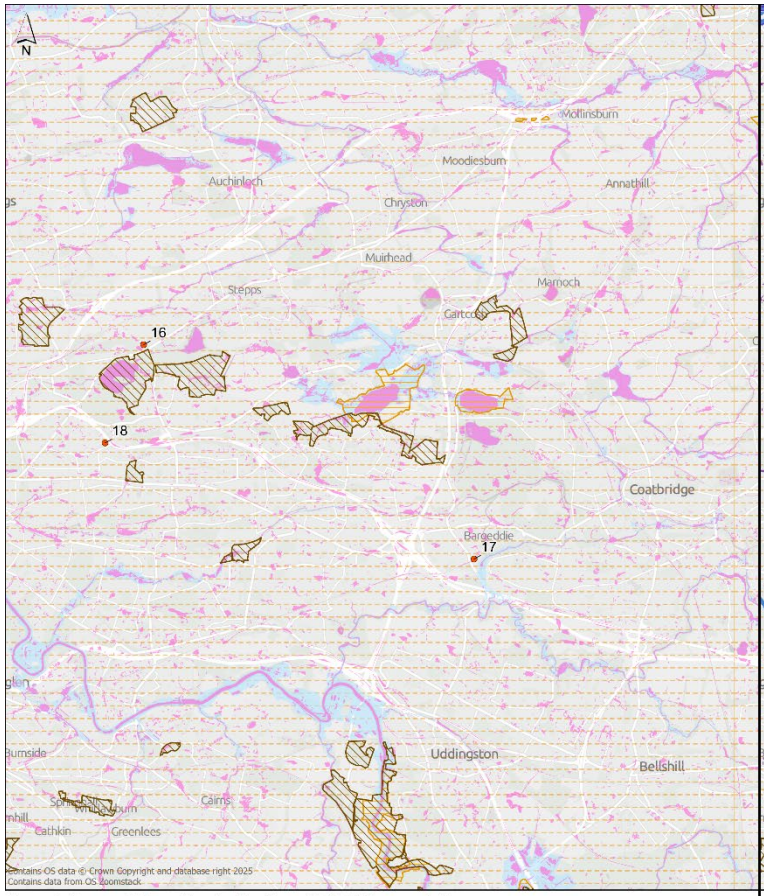
- RCP2.6
  (reflective of annual temperature change with a median of 1.5)

- RCP8.5
  (reflective of annual temperature change with a median of 4)

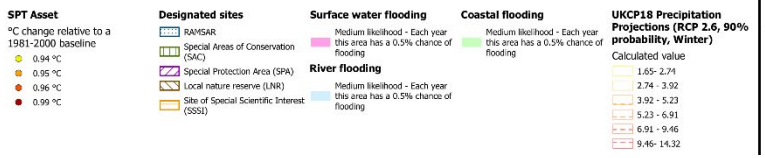
For assets:

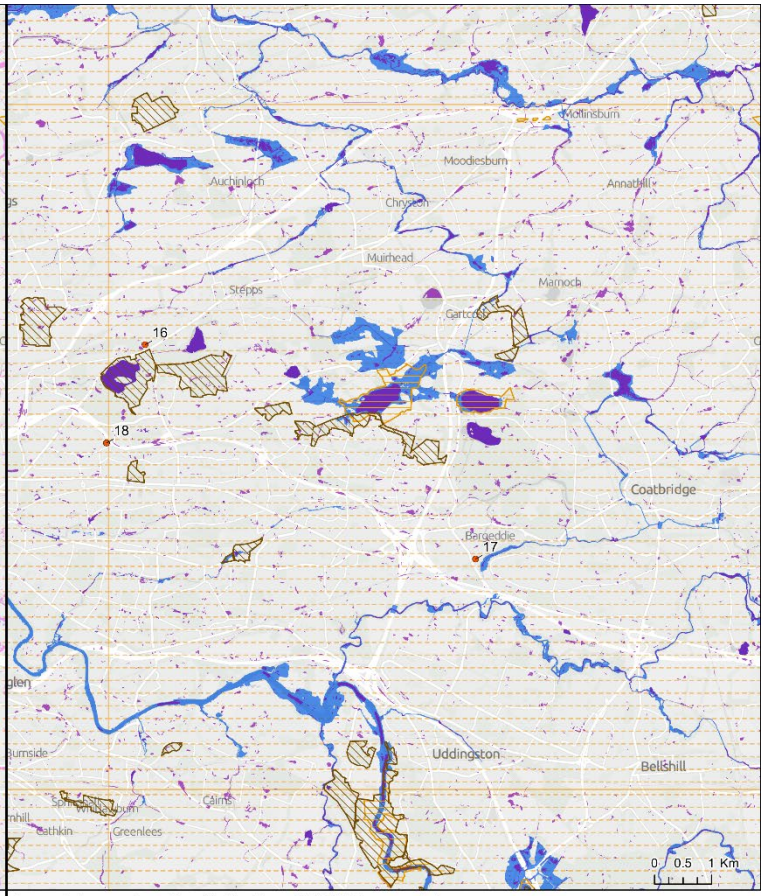
- Asset 16
- Asset 17
- Asset 18

See Appendix 1 for Asset ID

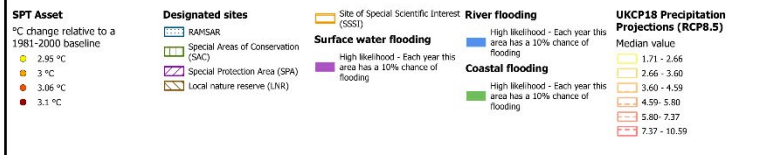


Annual change 1.5 median (reflective of RCP2.6 scenario)





Annual change 4 median (reflective of RCP8.5 scenario)



The spatial maps display the variation in:

- Temperature change (˚C)
- Surface water flooding (1 in 200 year)
- River flooding (1 in 200 year)
- Coastal flooding (1 in 200 year)
- Precipitation change (%)

Between two climate scenarios:

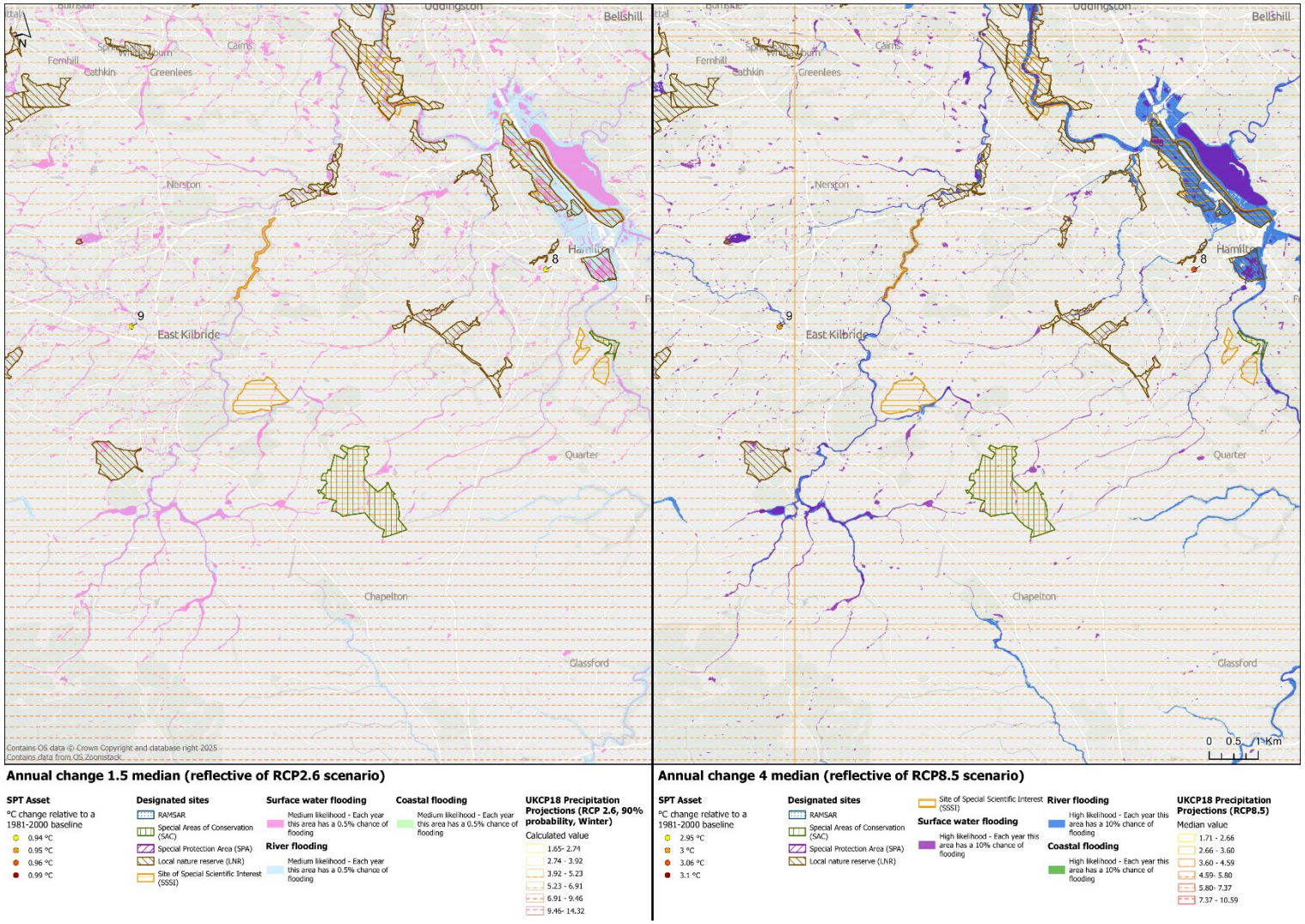
- RCP2.6
  (reflective of annual temperature change with a median of 1.5)

- RCP8.5
  (reflective of annual temperature change with a median of 4)

For assets:

- Asset 8
- Asset 9

See Appendix 1 for Asset ID



The spatial maps display the variation in:

- Temperature change (˚C)
- Surface water flooding (1 in 200 year)
- River flooding (1 in 200 year)
- Coastal flooding (1 in 200 year)
- Precipitation change (%)

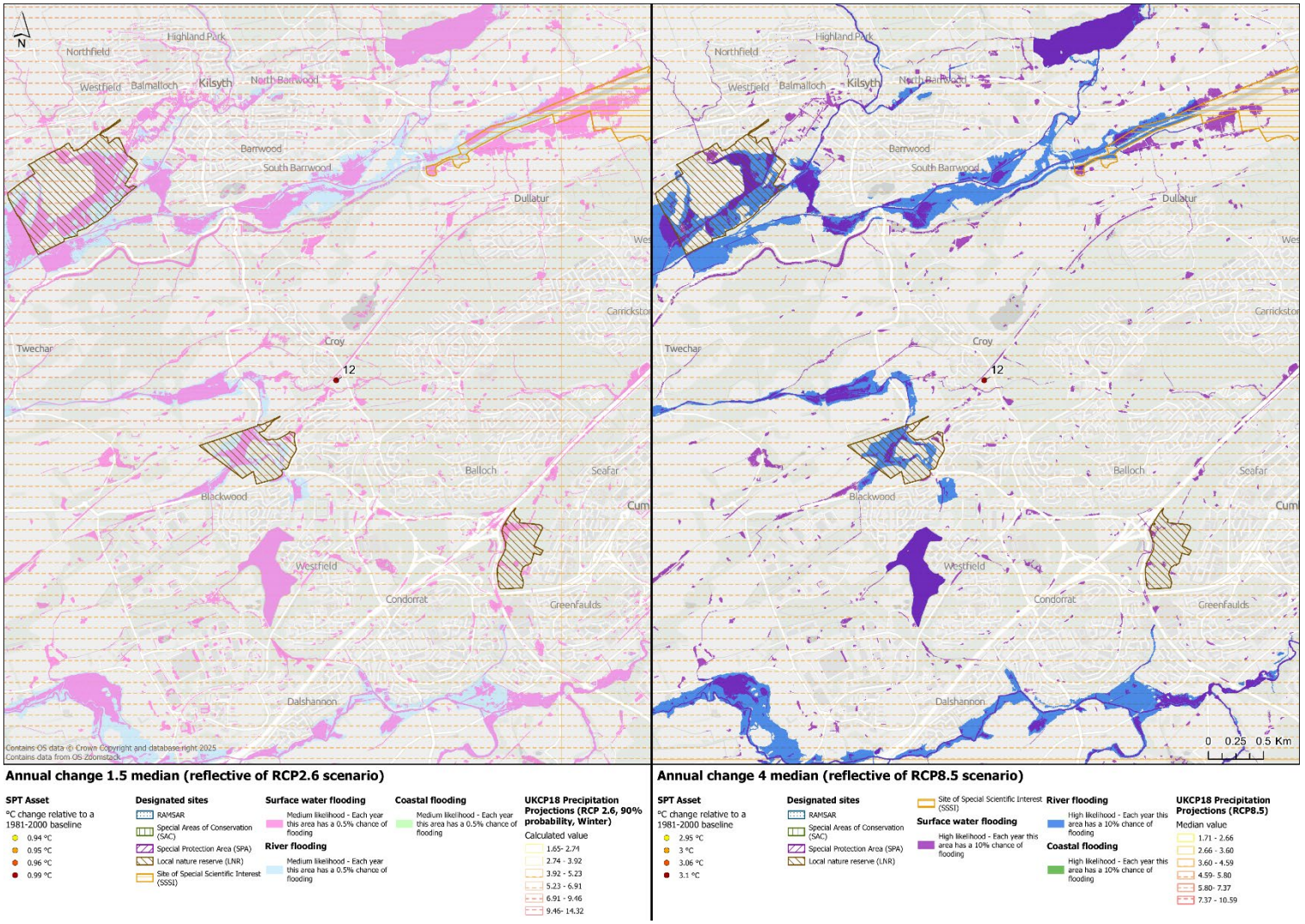
Between two climate scenarios:

- RCP2.6
  (reflective of annual temperature change with a median of 1.5)
- RCP8.5
  (reflective of annual temperature change with a median of 4)

For assets:

- Asset 12

See Appendix 1 for Asset ID



The spatial maps display the variation in:

- Temperature change (˚C)
- Surface water flooding (1 in 200 year)
- River flooding (1 in 200 year)
- Coastal flooding (1 in 200 year)
- Precipitation change (%)

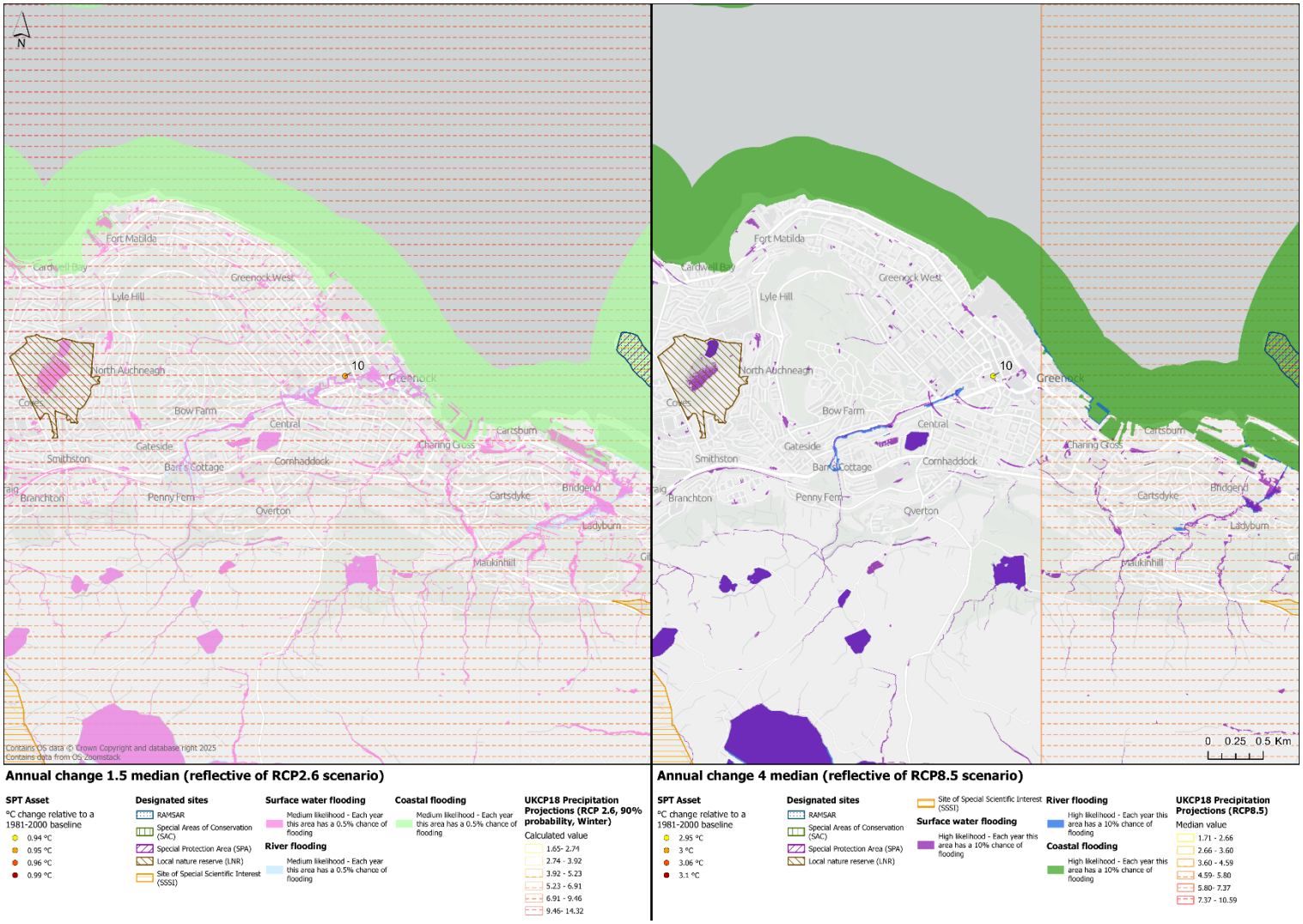
Between two climate scenarios:

- RCP2.6
  (reflective of annual temperature change with a median of 1.5)
- RCP8.5
  (reflective of annual temperature change with a median of 4)

For assets:

- Asset 10

See Appendix 1 for Asset ID



The spatial map display the variation in:

- Temperature change (˚C)
- Surface water flooding (1 in 200 year)
- River flooding (1 in 200 year)
- Coastal flooding (1 in 200 year)
- Precipitation change (%)

Between two climate scenarios:

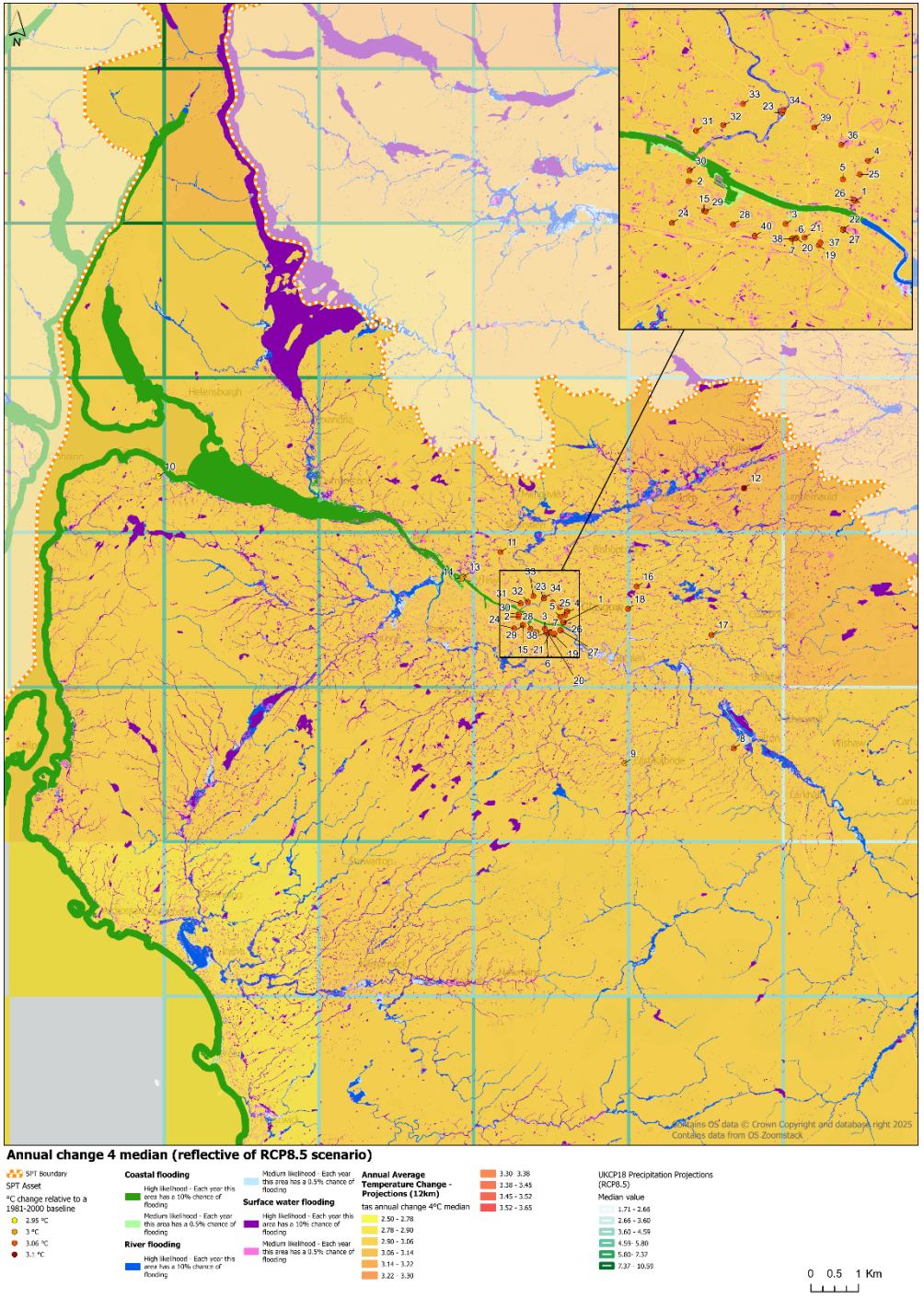
- RCP2.6
  (reflective of annual temperature change with a median of 1.5)

- RCP8.5
  (reflective of annual temperature change with a median of 4)

For all SPT corporate assets.
See Appendix 1 for Asset ID

As displayed in the map, under the RCP8.5 scenario SPT assets are likely to experience the following by 2100:

- Average annual temperature increase of approximately 3 degrees.
- Exposure to *high likelihood* (1 in 10 year) river flooding for assets **23 and 34**
- Exposure to *medium likelihood* (1 in 200 year) surface water flooding
- Precipitation change between 3.6-4.5%.



Adaptation Actions

This final section outlines proposed actions aimed at reducing risk exposure and vulnerability for each asset and the associated hazards. It includes a variety of strategies that can be considered, such as infrastructure improvements, implementation of sustainable drainage systems, and engagement in community awareness programs. By identifying actionable steps, this section aims to provide a clear roadmap for enhancing the resilience of SPT's assets against the identified climate risks, ensuring long-term sustainability and protection for the services provided.

The action prioritisation process follows on from the climate risk data analysis and the action register where several SPT assets have been analysed with potential adaptation and mitigation measures summarised. It is also essential to compile and overlay climate risk projection data with spatial maps of SPT assets to identify potential site-specific climate impacts. These maps will illustrate the distribution of climate impacts, along with associated risks, opportunities, and vulnerabilities. The analysis will focus on site-based impacts projected up to the year 2100, utilising data gathered earlier. Sweco will be able to determine if there are significant receptors within the portfolio that could be negatively affected by climate hazards, such as endangered species, watercourses, Sites of Special Scientific Interest (SSSI), and local nature reserves.

Building on the climate register, each asset has been evaluated, and one action has been prioritised for every asset. This prioritisation is based on a matrix assessment as well as insights gained from various stakeholder engagement workshops aimed at gaining a deeper understanding of the assets, their current and future plans, and the feasibility of the proposed actions. For each asset, the following aspects are analysed for each prioritised action:

Information provided for each action prioritization:

- Climate risk reduction potential - (0 low - 5 high)
- Feasibility - (0 low - 5 high)
- Cost to implement - (0 high - 5 low)
- Governance arrangements feasible - (Yes 1 /No 0)
- Wider benefits (e.g., economic, health, etc.) - (Yes 1 /No 0)
- Public acceptability (stakeholder engagement) - (0 low - 5 high)

Through this analysis, a score was assigned to each action, indicating its priority level. The final score was derived from various factors, including the potential impact of the action, the urgency of the climate risks associated with each asset, resource availability, and stakeholder input. This scoring process ensured a systematic approach to evaluating the importance of each action, allowing for a clear justification of which actions should be prioritised and moved forward for implementation. Additionally, this methodology facilitates transparency and accountability in decision-making, ensuring that the most critical actions are aligned with SPT's overall climate resilience strategy. By prioritising actions based on their scores, SPT can effectively allocate resources and efforts to mitigate climate risks and enhance the resilience of its assets. A summary of the analysis is provided in Table 1.

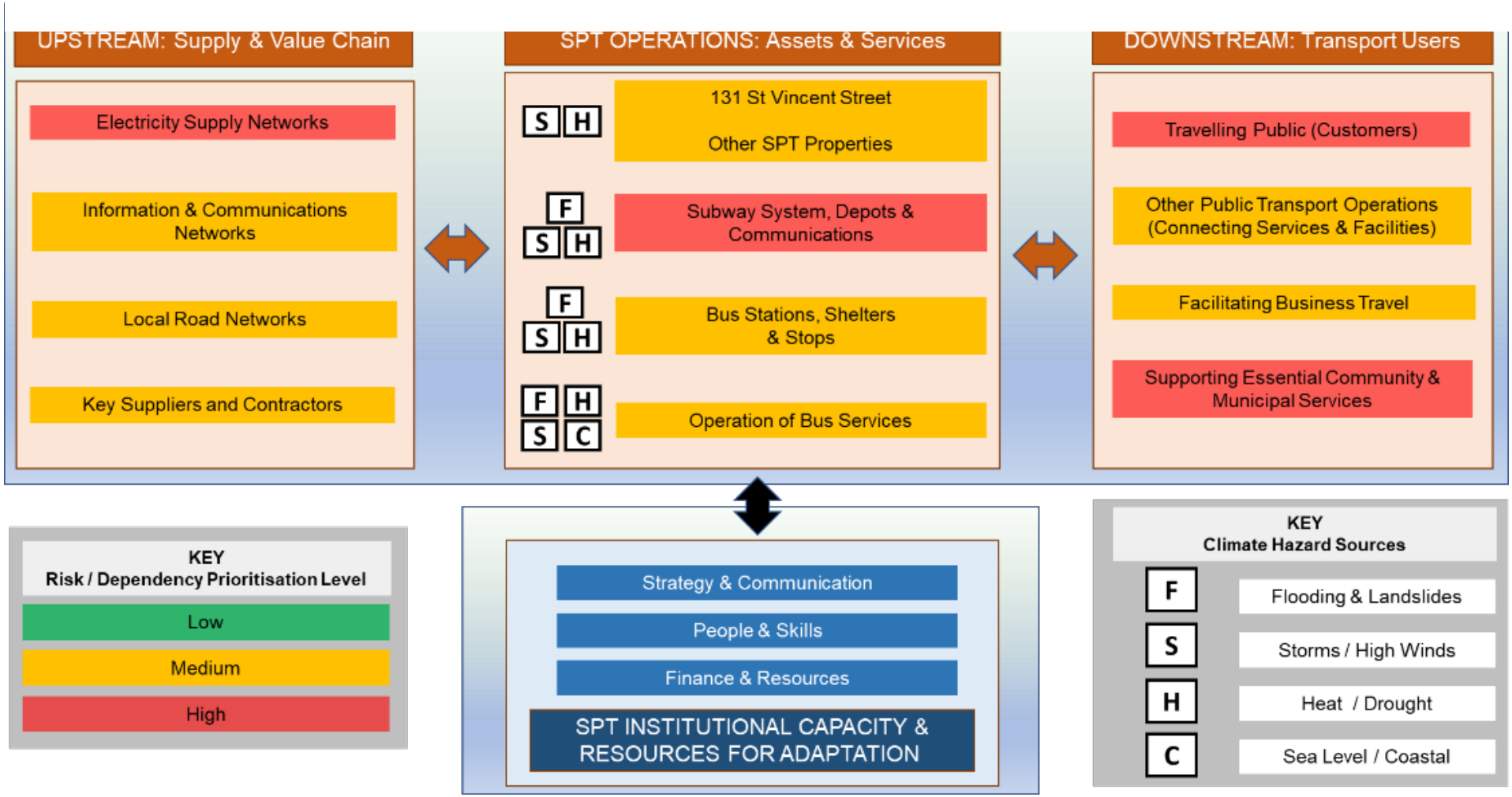
Table 1: The action prioritisation process

Title	Description	Score	Prioritise action? Y/N
Garrioch Quadrant, Maryhill, Glasgow, G20 8RT	Continue regular maintenance and checks for invasive species	19	Y
Seaward Street Store	Regular maintenance of drainage systems	18	Y
Broomloan Depot, Robert St, Govan, Glasgow G51 3HB	Invest in new flood defence systems/ resilience measures for the subway within flood prone areas	17	Y
Buchanan Bus Station	Improve guttering and downpipes and	17	Y
Cessnock Subway Station	Regular maintenance and drainage upgrades with GCC	17	Y
Cowcaddens Subway Station	SUDs and drainage improvements	17	Y
131 St Vincent Street, Glasgow, G2 5JF	Adaptive/improved design of retrofit for future proofing	16	Y
Woodville Street, Ibrox	Regular maintenance with GCC as responsibilities are split between both	16	Y
Ibrox Subway Station	Regular maintenance with GCC	16	Y
Kelvinhall Subway Station	Regular maintenance of guttering and drainage systems	16	Y

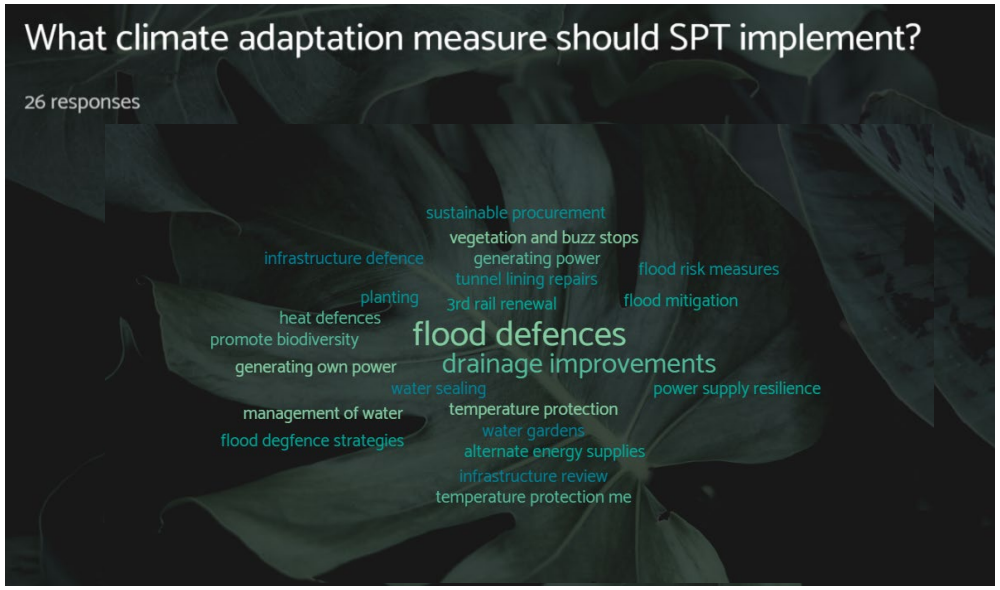
Title	Description	Score	Prioritise action? Y/N
West St-Subway Station	Feasibility studies taking place - surface drainage systems	16	Y
Shields Road, Subway Station	Implementation of SUDs and drainage improvements	16	Y

It is crucial to ensure that the adaptation actions consider not only the direct assets of SPT but also its operations and the entire upstream and downstream value chains. The Climate Risk Assessment (CRA) framework also evaluated subway systems and communication networks, in addition to the operation of bus services. The assessment indicated that adverse weather events could considerably compromise safety by disrupting systems and making roads impassable. High-risk hazards, particularly snow and ice, present significant safety challenges for bus services. Flooding may damage infrastructure and require costly repairs, while increased temperatures can impact vehicle performance and passenger comfort. Additionally, the need to reduce carbon emissions necessitates the transition to greener technologies, such as electric buses, which may require significant investment and adjustments to existing maintenance facilities. Furthermore, ensuring accessibility and service continuity for all community members during adverse weather conditions poses logistical and operational challenges. Additionally, communication systems may be susceptible to disruptions caused by severe weather conditions and cyber-attacks. To mitigate these risks, it is essential to develop emergency plans for communications related to SPT's critical transport infrastructure and to implement smart bus services.

Figure 2: SPT Organisation Adaptation Risk Map



Stakeholder engagement was crucial to the analysis of the assets, providing insights into the future outlook for these assets and any potential mitigation plans that may be implemented. During the workshops, various aspects related to climate risks and adaptation strategies were discussed, with the following viewpoints expressed by SPT:



Several key themes emerged from the discussions that were consistent across all aspects of SPT assets. These themes highlight critical concerns and considerations regarding the resilience of the infrastructure in the face of climate change. They are summarised below:

- **Flooding and Precipitation** – Flooding and increased precipitation were identified as the primary hazards that could significantly impact SPT assets. Stakeholders expressed concerns about the frequency and intensity of these events, particularly how they could disrupt operations, damage infrastructure, and affect service reliability. The potential for increased rainfall and subsequent flooding necessitates proactive measures to enhance drainage systems and implement effective flood management strategies to safeguard the assets and ensure uninterrupted service for the community.
- **Temperature increase** – Stakeholders highlighted the challenges posed by rising temperatures, particularly in subway stations. Concerns were raised about the need for adequate cooling systems to maintain comfortable environments for passengers and protect equipment from heat-related damage. Strategies to manage heat gain, such as improving ventilation and utilising energy-efficient cooling solutions, were discussed as essential for ensuring operational efficiency and user comfort.
- **Solar PV Strategies** – The potential for integrating Solar PV technology into the SPT infrastructure was discussed as a viable strategy to enhance sustainability and reduce reliance on non-renewable energy sources. Stakeholders expressed interest in exploring opportunities for solar energy generation on rooftops of stations and other assets, which could contribute to energy savings and resilience against energy price fluctuations.
- **Nature-Based Solutions** – There was a strong emphasis on the importance of nature-based solutions (NbS) in mitigating climate risks. Stakeholders advocated for the use of green infrastructure, such as green roofs, rain gardens, and permeable pavements, to enhance urban resilience. These solutions not only help manage stormwater and reduce flooding but also contribute to biodiversity, improve air quality, and create more pleasant urban spaces for communities.

By addressing the key themes identified by the stakeholders, the actions were prioritised and recommended for implementation. To prioritise actions for implementation, several key considerations were identified across different categories.

Action Profile

- Comprehensive overview of each action, detailing its title and description while outlining the implementation aspects across several categories

Logistics

- Clarify the action owner responsible for implementing each action, the role of SPT in delivering the action, and the anticipated timeframe for starting and completing the action

Finance

- Capital expenditure (CAP EX) and operational expenditure (OP EX) associated with action delivery must be evaluated, along with potential financing or funding options, such as national government grants or internal funding sources

Feasibility

- It is important to assess whether the action relies on technology that is not yet mature or market-ready and to determine the timeframes for its development. Stakeholder buy-in is also critical, as those directly impacted by the action should have a voice in its creation and approval

Impacts and Benefits

- Impacts and benefits of each action should be considered, including economic advantages, such as savings over time, environmental benefits related to risk reduction and mitigation, and social benefits that contribute to overall health and wellbeing

MER

- A monitoring, evaluation, and reporting (MER) framework should be established that includes key performance indicators (KPIs) to assess progress against action targets and a target year for the implementation of each action.

The findings from the action implementation plan highlight a comprehensive approach to enhancing the resilience of SPT assets against climate risks. Each action is tailored to address specific vulnerabilities, with a focus on improving infrastructure and implementing sustainable solutions. Key observations include:

Diverse Actions: The actions range from implementing grey water harvesting and improving drainage systems to adopting solar PV technology. These measures aim to enhance resilience to flooding, manage stormwater runoff, and reduce energy consumption.

Stakeholder Collaboration: Many actions require collaboration with stakeholders such as Glasgow City Council (GCC) and Scottish Water (SW), emphasising the importance of partnerships in implementing effective climate adaptation strategies.

Financial Considerations: Several actions are expected to incur low capital and operational expenditures, with potential funding sources identified, including council grants. This signifies an opportunity for cost-effective solutions that also promote sustainability.

Environmental Benefits: The proposed actions, such as the implementation of Sustainable Drainage Systems (SuDS), are geared towards not only mitigating flooding but also enhancing biodiversity and local ecosystems. This dual focus on climate resilience and environmental stewardship is a core theme throughout the plan.

Social Impact: The actions are designed to improve public health and safety by reducing the risks of flooding, waterborne diseases, and enhancing the overall quality of life for local communities.

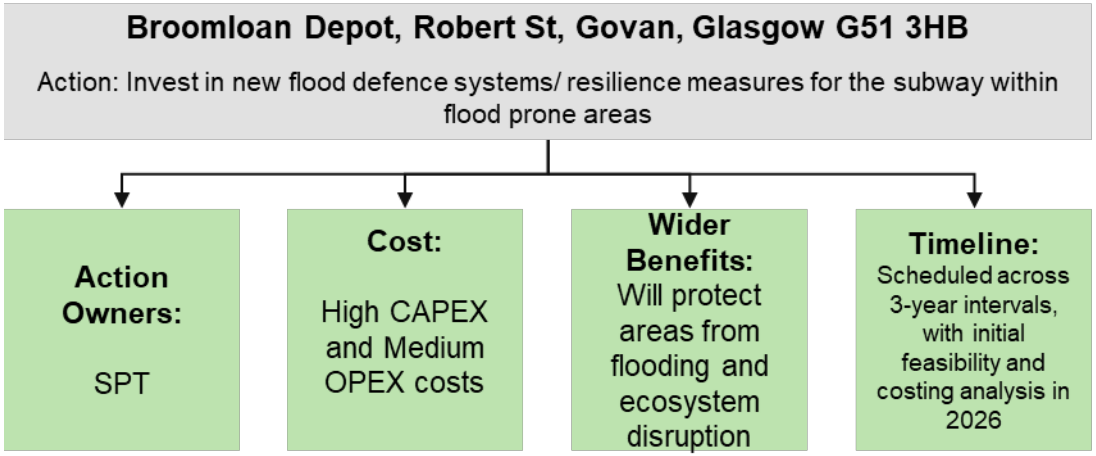
Timeframe for Implementation: These actions are provisionally scheduled across 3 year intervals, with initial feasibility and costing analysis in 2026, followed by further assessment as required.

Flagship Actions

Building on the most recent analysis and the prioritisation of actions, the assessment progressed to promote flagship initiatives for SPT's assets. These flagship actions underwent evaluation using a criterion matrix, where the scores obtained influenced whether an action was designated as a priority for implementation. The assets that achieved scores between 16 and 19 (the higher end of the scoring scale) were selected as flagship actions. The assessment has been categorised through asset group, covering subway stations and buildings, Bus stations/depots, storage and land, leased assets and offices.

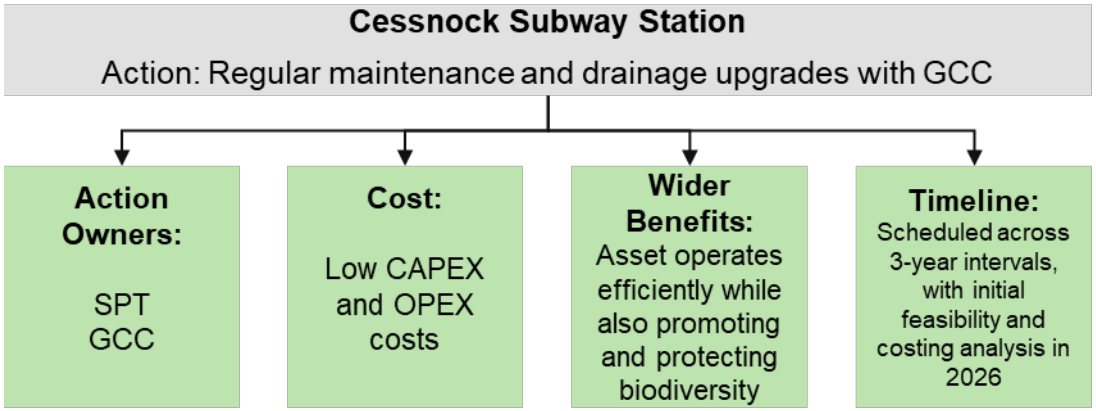
Subway Stations and Buildings

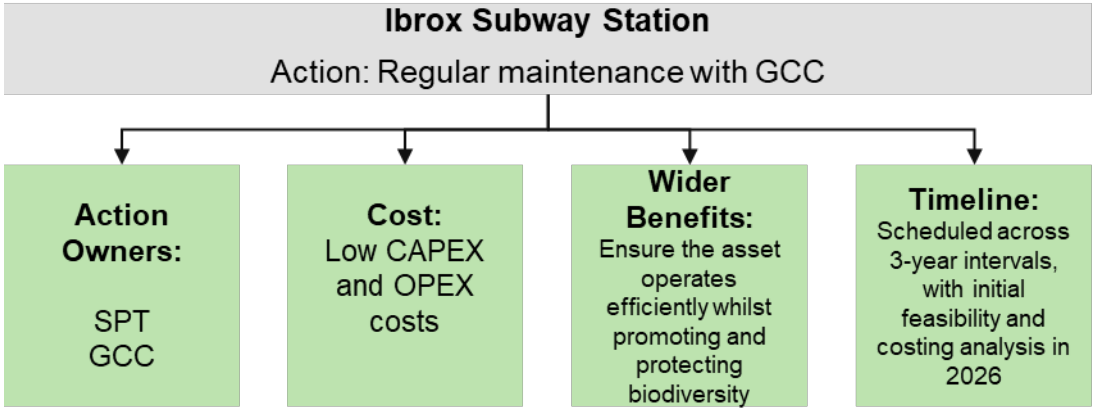
This section will examine SPT's assets related to subway stations and tunnels, outlining the actions to be taken forward. These actions will be prioritised through a tier system, focusing on quick wins and the use of innovative materials.



Examples:

Weed control; manage weed growth
Clearing debris; removing litter, fallen branches
Tree and shrub care; promote healthy growth
Soil management; improve soil quality
Access path maintenance; ensure safe access
Security maintenance; fencing repairs
Wildlife management; check for invasive species

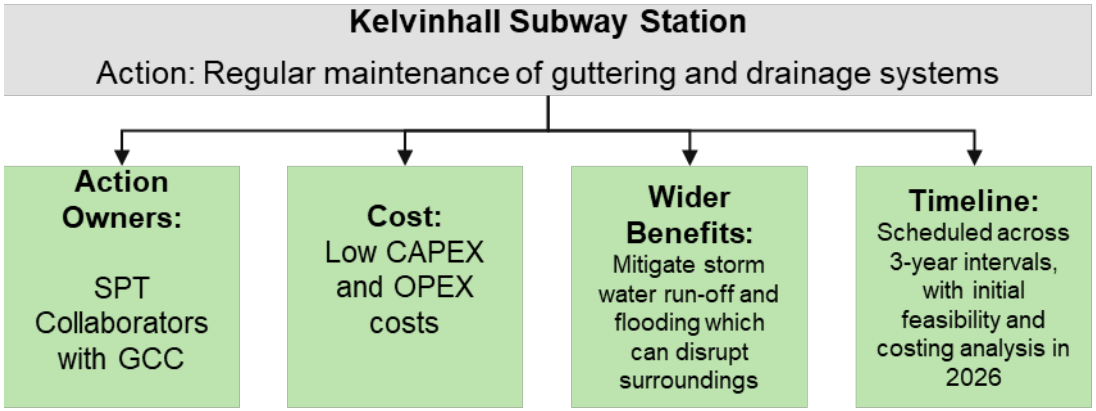


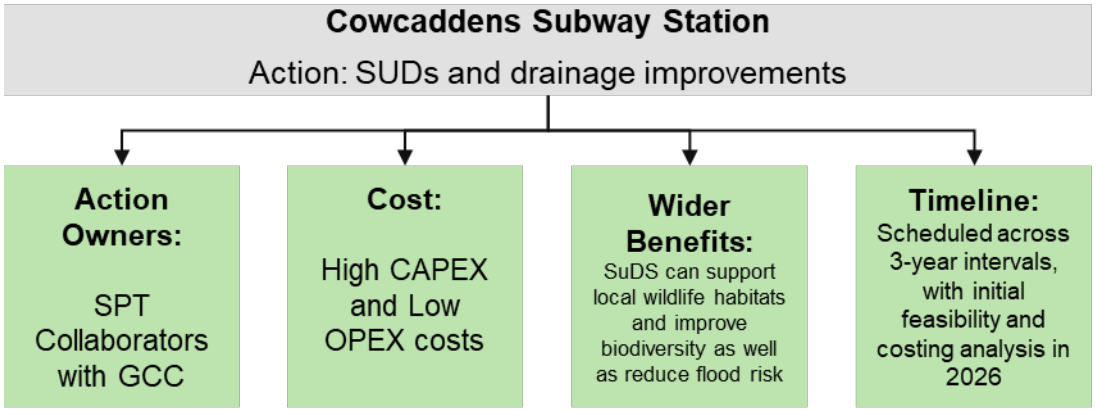


Short-term strategies

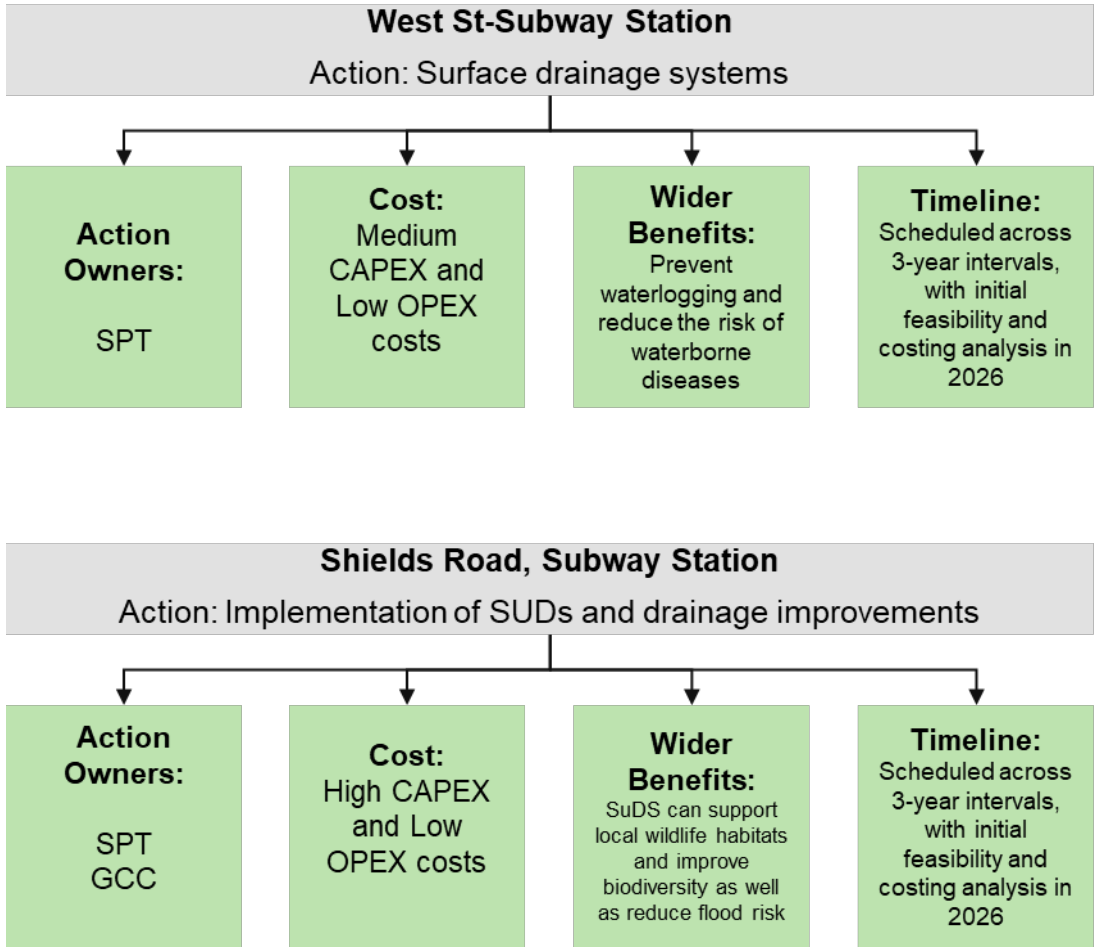
Regular maintenance of drainage systems is essential to ensure their proper functioning and to prevent flooding and other water-related issues. Examples of maintenance activities include:

1. **Cleaning Drains and Gutters**: Removing debris, leaves, and sediment from drains and gutters to ensure water flows freely.
2. **Inspecting and Clearing Culverts**: Regularly checking and clearing culverts to prevent blockages that can lead to flooding.
3. **Maintaining Ditches and Swales**: Ensuring that ditches and swales are free from obstructions and that vegetation is managed to promote effective water flow.
4. **Checking and Repairing Grates**: Inspecting drainage grates for damage and ensuring they are properly secured to prevent accidents and blockages.



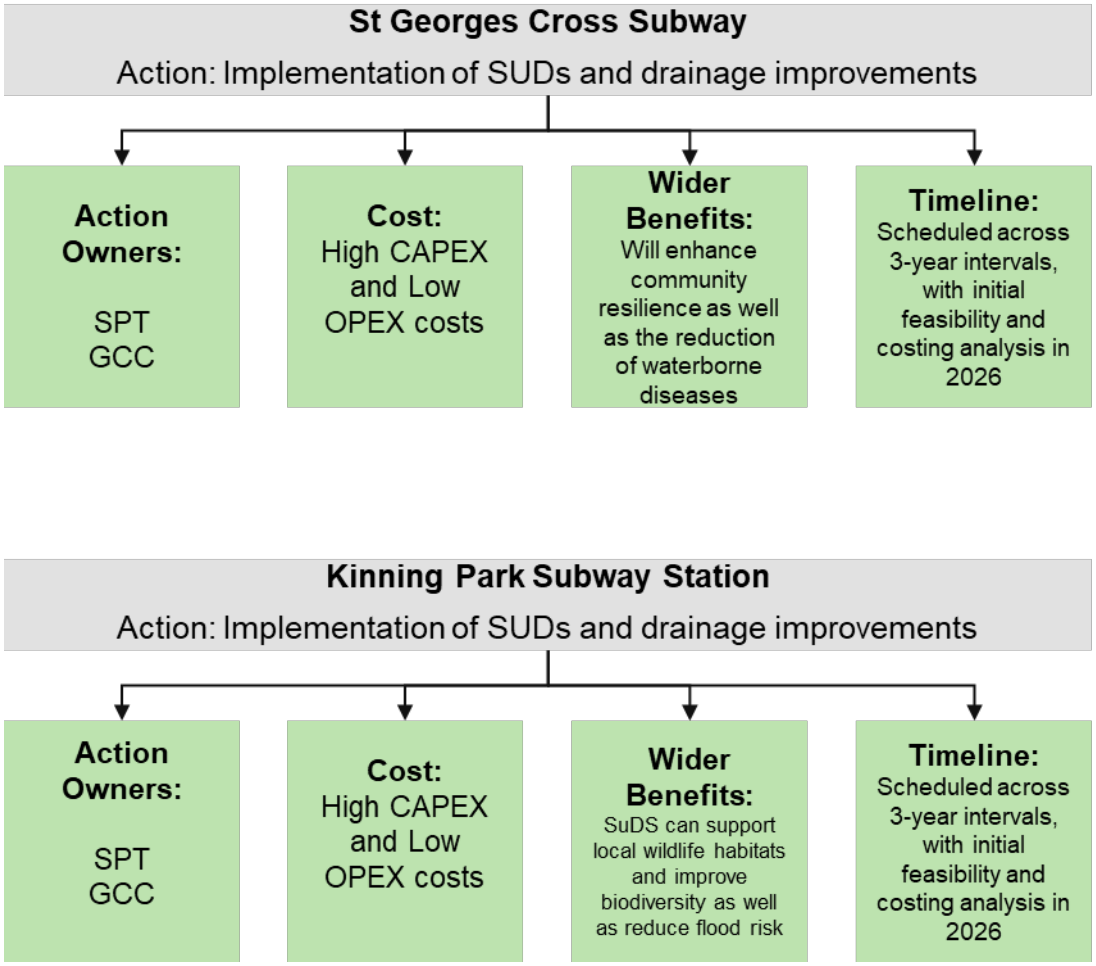


5. **Monitoring Water Levels**: Regularly checking water levels in drainage systems to identify any potential issues or areas of concern.
6. **Reinforcing Erosion Control Measures**: Maintaining erosion control measures, such as silt fences and riprap, to protect drainage systems from soil erosion.
7. **Inspecting Piping Systems**: Regular inspections of underground piping systems for leaks or blockages and conducting necessary repairs.
8. **Vegetation Management**: Managing vegetation around drainage areas to prevent overgrowth that could impede water flow.
9. **Routine Maintenance Schedules**: Establishing a routine maintenance schedule to ensure all aspects of the drainage system are inspected and maintained regularly.
10. **Permeable Pavements**: Installing permeable pavements near subway entrances to allow rainwater to infiltrate the ground rather than flood the station.



Mid-term strategies

1. **Improved Drainage Systems:** Upgrading existing drainage systems with larger capacity pipes and better materials to handle increased water volumes from heavy rainfall events.
2. **Retrofitting Ventilation Systems:** Enhancing ventilation systems to reduce heat buildup and improve air quality within subway stations.
3. **Green Roofs and Walls:** Installing vegetation on rooftops can help absorb rainwater, reduce heat island effects, and improve air quality.
4. **Flood Barriers and Gates:** Installing automated flood barriers and gates at subway entrances to prevent water ingress during extreme weather events.
5. **Energy Efficient Lighting:** Installing LED lighting and motion sensors to reduce energy consumption and improve the sustainability of subway stations.



Long-term strategies

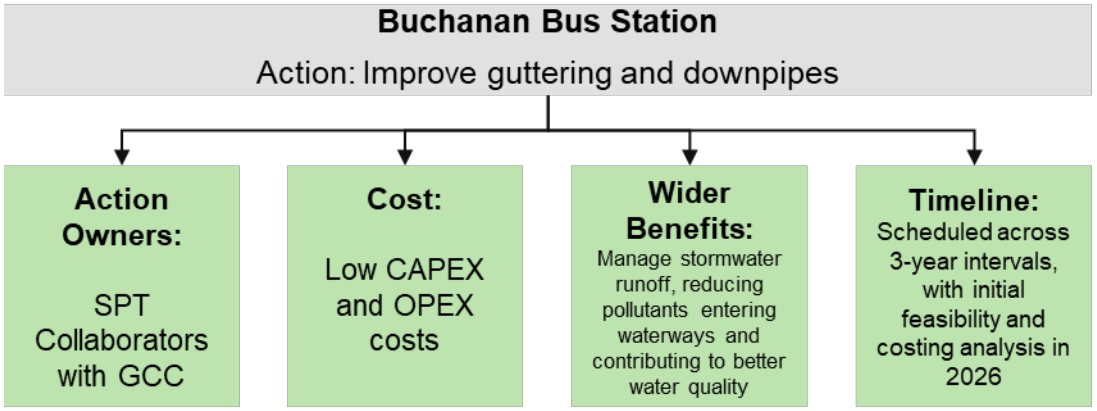
1. **Advanced Predictive Analytics:** Utilise AI and machine learning to predict weather patterns and potential flooding events, allowing for proactive measures to be taken.
2. **Smart Drainage Systems:** Implement IoT-based drainage systems that can dynamically adjust to changing conditions and optimise water flow to prevent flooding.
3. **Renewable Energy Integration:** Use solar panels, wind turbines, and other renewable energy sources to power the station and reduce dependency on non-renewable energy.
4. **Water Recycling Systems**: Install systems to capture, treat, and reuse water within the station for various purposes, reducing overall water consumption.
5. **Real-time Monitoring and Response Systems:** Implement sensors and monitoring systems to continuously track environmental conditions and automate emergency responses.

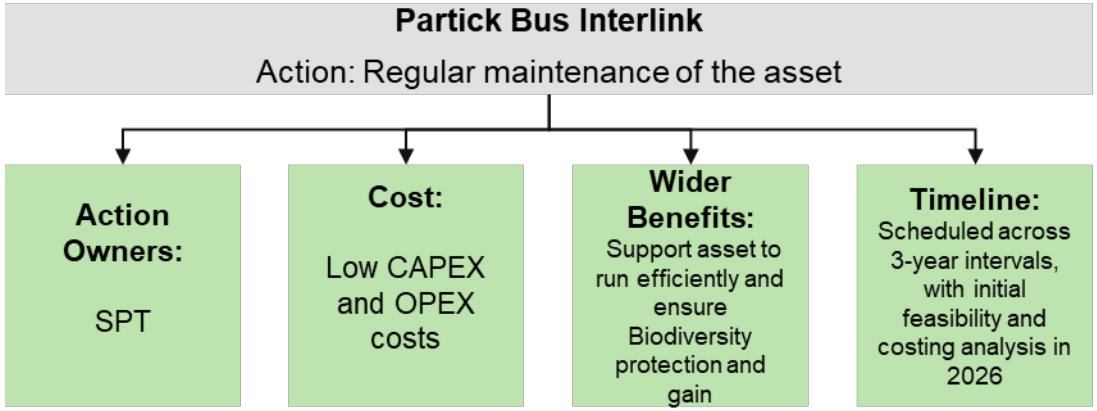
Bus Stations and Buildings

This section will assess SPT's assets pertaining to bus stations and related infrastructure, detailing the actions to be implemented. These actions will be prioritised using a tier system, emphasising quick wins and the utilisation of innovative materials.

Short-term strategies

1. **Regular cleaning of drainage systems:** Ensuring that drains are free from debris and blockages to prevent flooding.
2. **Installation of permeable pavements:** Using materials that allow water to pass through, reducing surface runoff and improving drainage.
3. **Routine inspections and repairs:** Conducting frequent checks on drainage systems and promptly repairing any damage.
4. **Upgrade to sustainable drainage systems (SuDS):** Implementing green infrastructure such as swales, rain gardens, and retention ponds to manage stormwater sustainably.
5. **Improved signage and information:** Educating staff and users about the importance of keeping drains clear and reporting issues promptly.
6. **Vegetation management:** Planting trees and shrubs that can help absorb excess water and reduce runoff.
7. **Bioswales:** Create bioswales or vegetated channels that direct and filter stormwater.





Mid-term Strategies

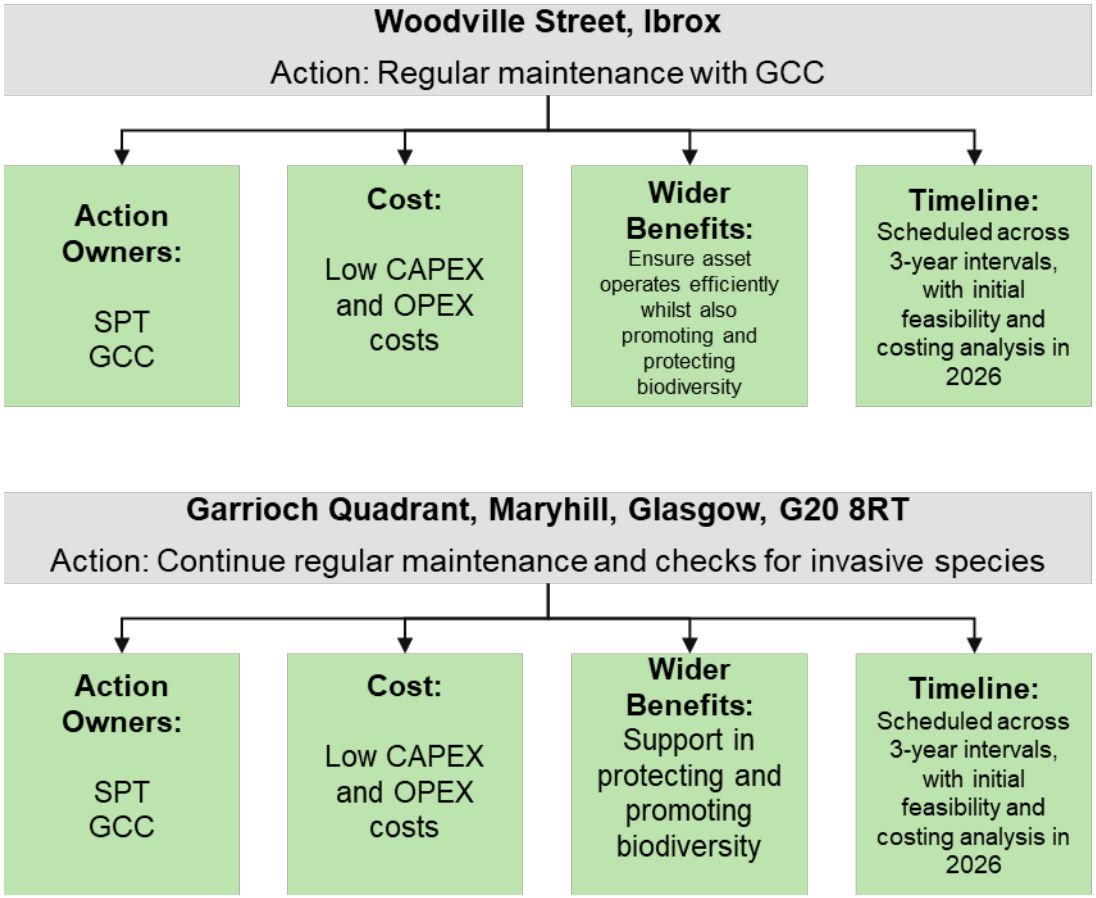
1. **Green Roofs and Walls:** Install green roofs and walls on bus station buildings to enhance insulation, reduce energy consumption, and manage stormwater runoff.
2. **Rain Gardens:** Create rain gardens near bus stations to manage stormwater runoff and reduce flooding. These gardens can be designed with native plants that thrive in local conditions and support pollinators.
3. **Stormwater Harvesting:** Develop stormwater harvesting systems to collect and reuse rainwater for non-potable purposes, such as cleaning bus station areas and irrigation of green spaces.
4. **Public Awareness Campaigns:** Educate the public and bus station users about the benefits of NbS and sustainable practices. Encourage community involvement in maintenance and upkeep of green infrastructure.
5. **Bioretention Cells:** Implement bioretention cells that capture and treat stormwater through phytoremediation. These cells use plants and soil to remove contaminants from runoff, improving water quality before it enters the drainage system.
6. **Solar-Powered Lighting:** Equip bus stations with solar-powered lighting solutions to reduce energy consumption and promote sustainability.
7. **Enhanced Public Transport Information Systems:** Implement real-time information systems to keep passengers informed about weather-related disruptions and alternative routes.

Long-term Strategies

1. **Wetlands Creation:** Create constructed wetlands adjacent to bus stations to treat stormwater runoff through natural filtration processes. Wetlands also support biodiversity and provide aesthetic value to the urban environment.
2. **Smart Drainage Systems:** Install smart drainage systems equipped with sensors to monitor and manage water flow, ensuring efficient drainage during heavy rainfall.
3. **Renewable Energy Integration:** Install solar panels and wind turbines at bus stations to provide renewable energy for lighting and other facilities, reducing carbon footprint.
4. **Advanced Water Recycling:** Implement advanced water recycling systems to treat and reuse stormwater for cleaning and irrigation purposes at the bus stations.
5. **Futureproofed Design:** Design bus stations with materials and structures that can withstand extreme weather conditions, such as high winds and heavy rain.
6. **Eco-Friendly Materials:** Use sustainable and eco-friendly construction materials for building and upgrading bus stations to minimise environmental impact.
7. **Resilient Transportation Networks:** Develop redundant transportation routes and systems to ensure continued operation during extreme weather events, minimising disruption to services.
8. **Community Engagement:** Involve local communities in the planning and maintenance of bus stations to ensure the solutions meet their needs and promote public awareness of climate adaptation.

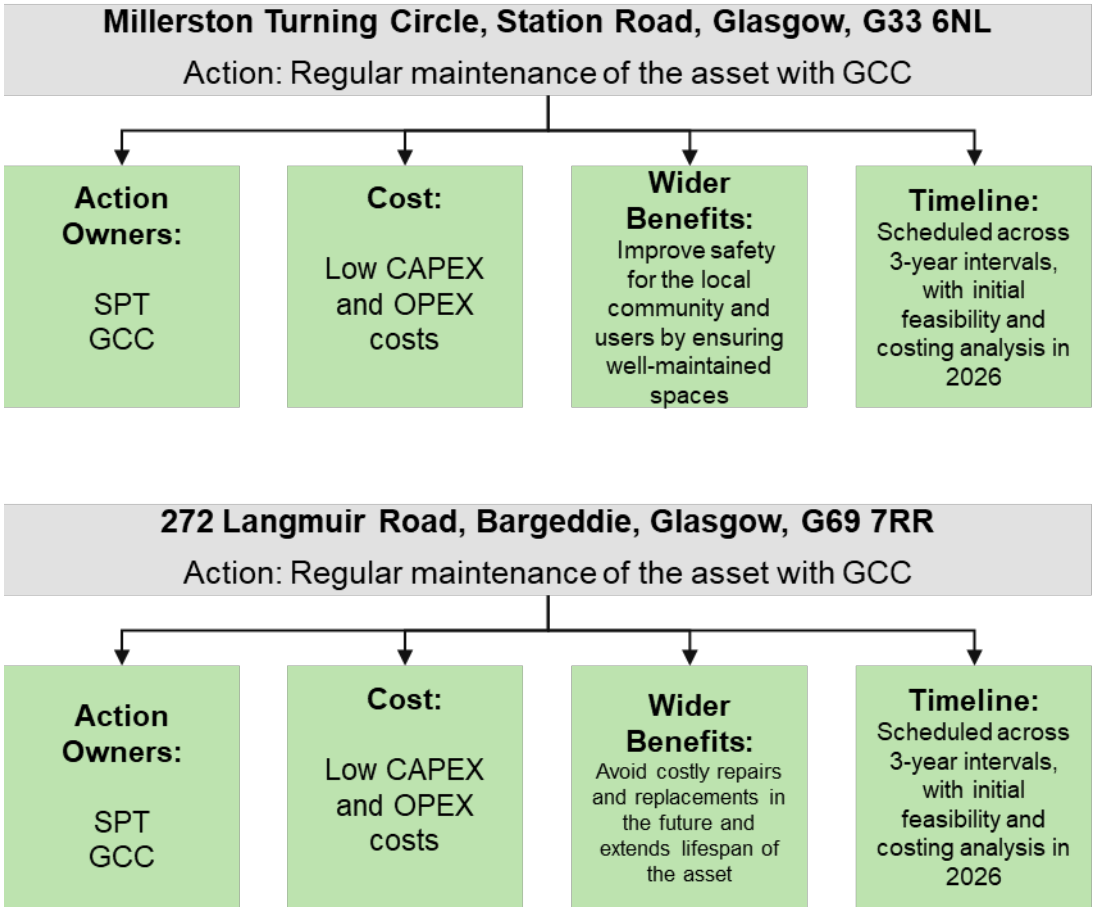
Land and Storage

This section will assess SPT's assets pertaining to bus stations and related infrastructure, detailing the actions to be implemented. These actions will be prioritised using a tier system, emphasising quick wins and the utilisation of innovative materials.



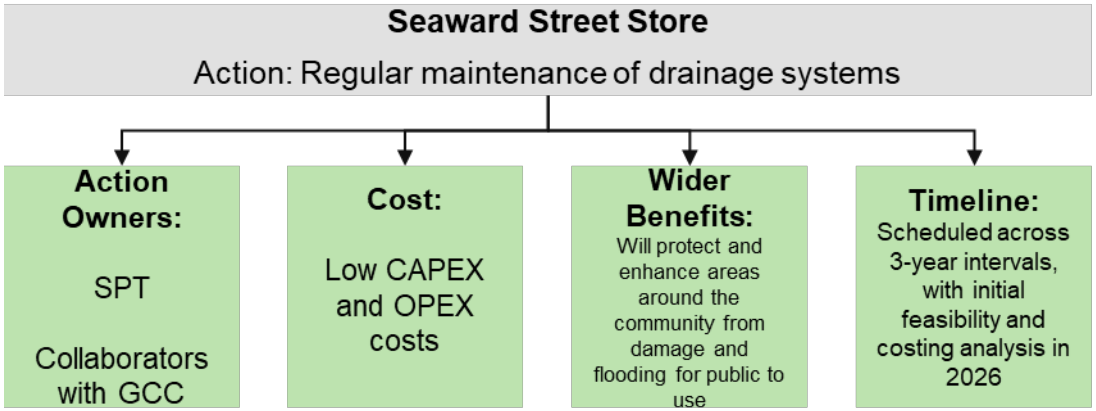
Short-term strategies

1. **Community Involvement:** Engage local communities in creating and maintaining green spaces, fostering a sense of ownership and stewardship. This would be a follow up from the existing engagement with the non-profit woodworking group at Woodville.
2. **Rain Gardens:** Install rain gardens to capture and filter rainwater, reducing runoff and improving water quality.
3. **Green Infrastructure:** Convert vacant land into green spaces such as parks, community gardens, or urban forests. This helps manage stormwater, reduce heat island effect, and improve air quality.
4. **Pollinator Habitats:** Create habitats for pollinators such as bees and butterflies, which are vital for maintaining biodiversity and healthy ecosystems.
5. **Routine Inspections**: Conduct regular inspections to identify potential issues such as erosion, waterlogging, or damage to facilities. This helps in early detection and timely intervention.



Mid-term strategies

1. **Urban Green Spaces:** Convert vacant land into parks, community gardens, or green corridors to increase biodiversity, improve air quality, and provide recreational spaces for residents.
2. **Tree Planting Programmes:** Plant trees on vacant land to provide shade, reduce heat, absorb carbon dioxide, and improve local air quality. This includes the planting of native species.
3. **Green Roofs on Storage Facilities:** Installing green roofs can help regulate temperature, reduce energy use, and manage stormwater. This can improve the resilience of storage facilities to extreme weather events.
4. **Rainwater Harvesting Systems:** Implementing rainwater harvesting systems on storage facilities to collect and reuse rainwater can help mitigate flooding and reduce water usage.
5. **Biodiversity Enhancement:** Creating habitats for wildlife in vacant land areas to support biodiversity and ecological balance.



Long-term strategies

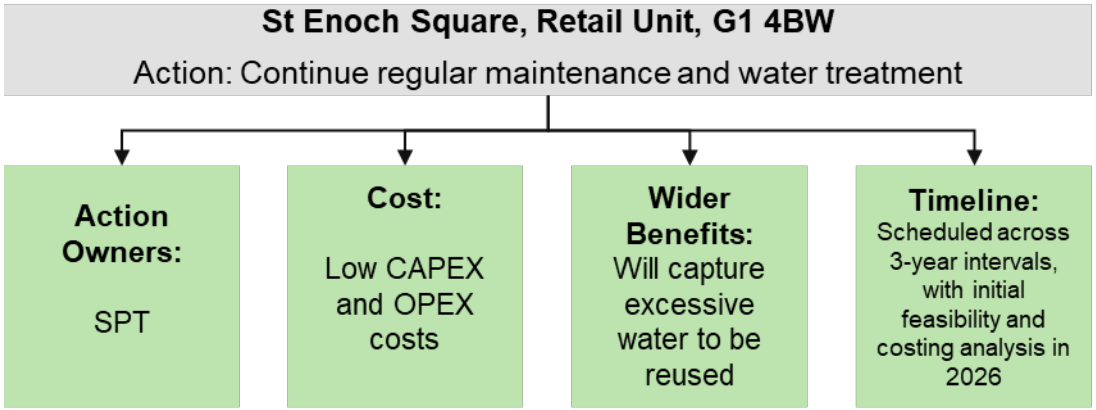
1. **Renewable Energy Integration:** Incorporate renewable energy sources such as solar panels and wind turbines in storage facilities to reduce carbon footprint and ensure energy security.
2. **Habitat Restoration and Conservation:** Restore and conserve natural habitats such as wetlands, woodlands, and grasslands to improve biodiversity and ecological resilience.
3. **Carbon Sequestration Projects:** Develop projects focused on enhancing soil carbon sequestration through practices like composting, mulching, and biochar application.
4. **Pollinator Habitats and Biodiversity Corridors:** Establish pollinator habitats with native plants to support bees, butterflies, and other pollinators, enhancing biodiversity.
5. **Renewable Energy Installations:** Utilise vacant land for solar farms or wind turbines to generate renewable energy, reduce dependence on fossil fuels, and lower greenhouse gas emissions.

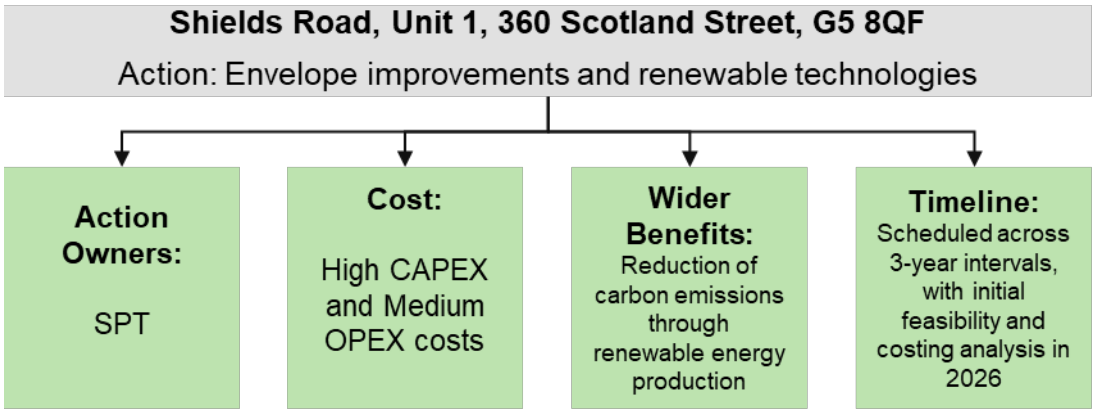
Leased Assets

This section will evaluate SPT's leased assets, outlining the actions to be undertaken. These actions will be prioritised using a tier system, focusing on quick wins and the use of innovative materials.

Short-term strategies

1. **Regular Inspections:** Conducting routine inspections to identify and address maintenance issues promptly.
2. **Rainwater Harvesting:** Implementing rainwater harvesting systems to reduce water usage and manage stormwater more effectively.
3. **Sustainable Urban Drainage Systems (SuDS):** Implementing SuDS to manage surface water and reduce flood risks.
4. **Green Roofing:** Installing green roofs to enhance building insulation, manage stormwater, and improve air quality.
5. **Permeable Pavements:** Using permeable materials for walkways and parking areas to enhance stormwater management and reduce flooding risks.





Mid-term Strategies

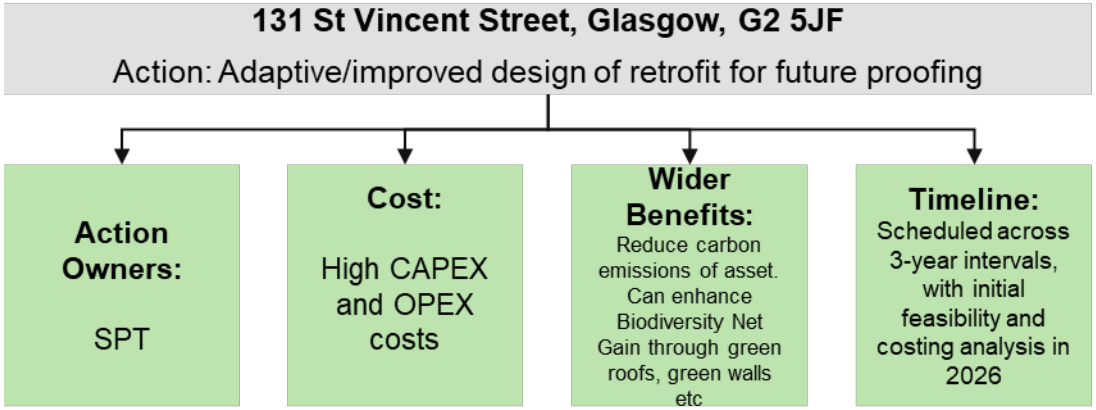
1. **Solar Panels:** Installing solar panels to generate renewable energy and reduce reliance on fossil fuels.
2. **Flood Defence Measures:** Installing barriers or landscaping features that can mitigate the impact of flooding, such as levees or swales.
3. **Energy-efficient Windows:** Replace old windows with double or triple-glazed windows to improve thermal performance and reduce energy consumption.
4. **Advanced HVAC Systems:** Upgrade heating, ventilation, and air conditioning systems to more efficient models that can better handle extreme weather conditions.
5. **Insulation**: Upgrade insulation in buildings to improve energy efficiency and reduce heating and cooling costs. Use eco-friendly materials to further enhance sustainability.
6. **Energy-efficient Lighting:** Retrofit buildings with LED lighting and smart controls to reduce energy consumption.
7. **Enhanced Ventilation**: Upgrade ventilation systems to ensure better air quality and comfort within buildings.
8. **Building Management Systems (BMS):** Implement advanced building management systems to monitor and control energy use, temperature, and humidity.

Long-term Strategies

1. **Smart Building Systems:** Implementing advanced building management systems with sensors and IoT integration to monitor and control lighting, heating, cooling, and water usage. This can optimise energy efficiency and detect maintenance needs early.
2. **Renewable Energy Integration:** Incorporating solar panels, wind turbines, or other renewable energy sources to reduce reliance on fossil fuels and lower carbon footprint. Battery storage systems can ensure energy availability during peak times or outages.
3. **Adaptive Building Envelope:** Using materials and designs that can adjust to environmental conditions, such as dynamic shading systems, phase change materials, and smart windows that alter their properties based on external conditions.
4. **Certification and Standards:** Achieve high-level certifications like BREEAM, LEED, or WELL for sustainable building practices.
5. **Adaptive Reuse and Modular Design:** Design buildings with modular components that can be easily adapted or repurposed to changing needs and conditions.
6. **Smart Building Technologies:** Implement IoT devices and sensors to monitor and optimise energy usage, indoor air quality, and building performance. Use advanced analytics and AI to predict maintenance needs and improve building efficiency.

Offices

This section will assess SPT's Office assets, detailing the actions to be implemented. These actions will be prioritised using a tier system, emphasising quick wins and road mapping long term innovative actions.



Short-term strategies

1. **Green Roof Installation**: Installing green roofs on SPT's office buildings can help in managing stormwater, reducing energy consumption, and mitigating the urban heat island effect. Green roofs also provide habitats for local wildlife.
2. **Rain Gardens:** Creating rain gardens around the office premises to capture and filter runoff rainwater. This helps in reducing flooding and improving water quality.
3. **Natural Ventilation:** Implementing natural ventilation systems to reduce reliance on air conditioning. This can be achieved by strategically placing windows and vents to promote airflow.
4. **Energy-Efficient Lighting:** Replacing traditional lighting with energy-efficient LED lights to reduce energy consumption and greenhouse gas emissions.
5. **Water-Efficient Fixtures:** Installing low-flow toilets, faucets, and other water-efficient fixtures to reduce water consumption. Utilise greywater systems for irrigation of green spaces and gardens.

Mid-term Strategies

1. **Solar Panels:** Installing solar panels to generate renewable energy, reducing the office's carbon footprint and energy costs.
2. **Living Walls:** Creating living walls made of plants to improve air quality, insulation, and aesthetics. Living walls can also reduce the building's energy consumption.
3. **Stormwater Management Systems:** Developing advanced stormwater management systems to handle extreme weather events. These systems can include bioswales, retention ponds, and constructed wetlands.
4. **Building Insulation:** Enhancing building insulation to improve energy efficiency and indoor climate control. This includes using sustainable materials like recycled insulation.
5. **High-Efficiency HVAC Systems:** Upgrading to high-efficiency HVAC systems that use less energy and provide better climate control.
6. **Flexible Workspace Design:** Designing flexible workspaces that can adapt to changing needs and promote a healthy work environment. This includes movable walls, ergonomic furniture, and open-plan layouts.
7. **Supplier Collaboration:** Work with suppliers who adhere to circular economy principles and provide eco-friendly products and services.

Long-term Strategies

1. **Passive Solar Design:** Implementing passive solar design principles to optimize the building's orientation, layout, and materials for natural heating and cooling.
2. **Rainwater Harvesting Systems:** Installing advanced rainwater harvesting systems to collect and store rainwater for non-potable uses like irrigation and flushing toilets.
3. **Geothermal Energy Systems:** Utilising geothermal energy systems to provide heating and cooling for buildings. This renewable energy source can significantly reduce the office's carbon footprint
4. **Biophilic Building Design:** Embracing biophilic design principles to create buildings that connect occupants with nature. This can enhance well-being and productivity.
5. **Flood-resistant design:** Retrofit building infrastructure to be more resistant to flooding, including raising electrical systems, installing flood barriers, and using water-resistant materials.
6. **Smart building technology:** Incorporate smart building technology to monitor and optimize energy use, indoor air quality, and temperature, enhancing overall resilience and reducing operational costs.
7. **Digital Twins**: Digital twins enable real-time monitoring of building performance and environmental conditions. Sensors can collect data on energy usage, temperature, humidity, and air quality, which can be used to optimize building systems for improved efficiency and climate resilience.

Community Engagement

SPT plays a crucial role in fostering social value, enhancing community well-being, and promoting climate resilience around the Glasgow area. This section outlines key initiatives and actions that can help SPT achieve these objectives and implement community engagement around their assets and strategies.

Community Workshops and Forums

Organise workshops and forums to educate residents about climate change and resilience strategies. Empowering communities with knowledge and tools to adapt to climate change, fostering a sense of ownership and collaboration.

Local Climate Action Groups

Establish and support local groups focused on climate action and sustainability projects around SPT and assets. This can include the public as well as public bodies such as GCC. This will encourage community involvement and builds in improving the local environment.

Engagement with Local Schools and Youth Programmes

Develop programmes for schools and youth organizations that focus on climate education and practical adaptation measures. This action continues from the existing work which is being carried out by SPT with local schools.

Green Infrastructure Projects

Invest in green infrastructure such as community gardens, rain gardens and community spaces around SPT assets. SPT has vacant land where actions have been identified to improve and support local community.

Collaborations with Local Organisations

Partner with local NGOs, businesses, and academic institutions to support climate resilience initiatives. This will strengthen community bonds and leverages diverse expertise and resources for greater impact around SPTs climate resilience and adaptation.

Public Awareness Campaigns

Launch campaigns to raise awareness about the importance of climate resilience and adaptation specific to SPT. Use social media, local events, and partnerships with community organisations to spread the message.

Sustainable Transportation Initiatives

Promote the use of public transportation, cycling, and walking through awareness campaigns and incentives. Collaborate with local organisations to create safe and accessible routes for pedestrians and cyclists.

Inclusive Decision-Making Processes

Create platforms for community members to voice their concerns and ideas regarding climate resilience and adaptation for SPTs transport network. Ensure diverse representation from different demographics in planning and decision-making processes.

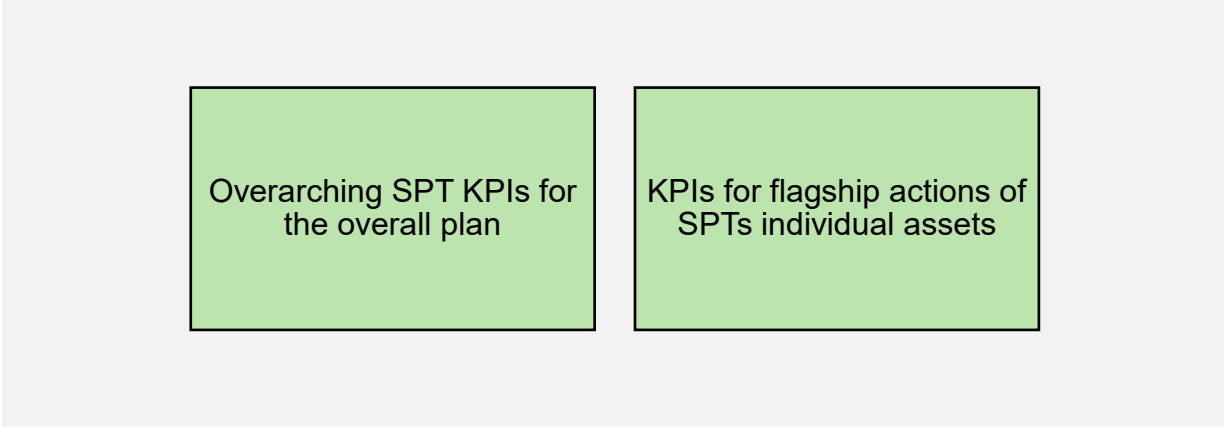
By implementing these social value initiatives, SPT can play a pivotal role in enhancing climate resilience and adaptation in the Glasgow area. These efforts will work in combination with the flagship actions mentioned previously in the action plan, creating a comprehensive strategy to address the challenges posed by climate change. The integration of social value initiatives with flagship actions ensures a holistic approach that not only mitigates the adverse effects of climate change but also promotes the overall well-being, sustainability, and resilience of the community.

This combined approach will foster stronger community engagement, support vulnerable populations, and contribute to the development of infrastructures that are adaptable to changing climatic conditions. By prioritising these interconnected strategies, SPT is positioned in creating a safer, healthier, and more sustainable environment for the community, while also setting an example for other regions to follow in their climate resilience efforts.

Monitoring Progress

Monitoring progress and KPIs of climate resilience and adaptation action plans for SPT is crucial for ensuring that the objectives are being met effectively and efficiently. Regular tracking allows for the identification of areas where improvements are needed, enabling timely adjustments to strategies and resources. Key Performance Indicators (KPIs) provide measurable metrics to evaluate the success of initiatives, such as reductions in service disruptions due to extreme weather, improvements in infrastructure resilience, and advancements in emissions reduction. By closely monitoring these indicators, SPT can ensure that their efforts are leading to tangible benefits in terms of service reliability and sustainability. Furthermore, transparent reporting on progress helps to build trust and accountability among stakeholders, including the public, funding bodies, and local and regional authorities. It also facilitates informed decision-making, ensuring that investments are directed towards the most effective solutions.

SPT have compiled two sets of KPIs and monitoring for their assets based on the flagship actions mentioned earlier in the action plan. These KPIs will cover:



Overarching KPIs

Implementation and governance:	Physical resilience/risk reduction KPIs:	Environmental impact KPIs	Social/community benefits KPIs	Financial KPIs
○% of adaptation projects completed (against planned milestones) ○No. of policies or procedures updated to integrate climate resilience/adaptation	○Reduction in flood exposure (e.g. % decrease in flood prone sites) ○% increase in permeable surfaces and SUDS ○Reduction in extreme weather-related service disruptions (e.g. transport delays/building closures)	○% increase in green infrastructure across corporate estate ○Biodiversity improvement (e.g. increase in tree cover, pollinator friendly planting, biodiversity net gain appropriate)	○No. of local community engagement activities on adaptation (may be for future) ○% of adaptation initiatives that deliver co benefits (e.g. public green space, air quality improvements) ○Stakeholder satisfaction with adaptation measures (survey feedback from GCC, Scottish Water etc)	○% of adaptation budget allocated and spent ○External funding secured for adaptation initiatives ○Alignment with GCC and national climate strategies ○Cost savings from reduced reactive repairs £/year (if applicable)

SPT Asset KPIs

The following table provides a detailed overview of the individual Key Performance Indicators (KPIs) for each SPT asset in relation to the flagship climate resilience and adaptation actions. These KPIs serve as critical benchmarks for assessing the progress and effectiveness of the initiatives implemented. Each asset's performance will be meticulously monitored to ensure that the goals are being met, enabling SPT to make informed decisions and adjustments to optimise outcomes.

Title	Description	MER Indicator
Garrioch Quadrant, Maryhill, Glasgow, G20 8RT	Continue regular maintenance and checks for invasive species	• No. of invasive species identified/recorded per year • % of invasive species management actions completed • % reduction in invasive species cover
Seaward Street Store	Regular maintenance of drainage systems	• % reduction in reported drainage issues • Incidents of localised flooding or standing water (no. per year) • % drainage inspections completed • Annual maintenance costs vs reactive repair costs • Reduction in emergency call outs %

Title	Description	MER Indicator
Broomloan Depot, Robert St, Govan, Glasgow G51 3HB	Invest in new flood defence systems/ resilience measures for the subway within flood prone areas	• Reduction in flood-related service disruptions (%) • Drainage capacity improved (litres/sec) • No. of water ingress incidents reported • Cost savings from avoided flood damage (£/year)
Buchanan Bus Station	Improve guttering and downpipes and	• Reduction in pooling/leaks (%) • No. incidents of blocked or overflowing gutters
Cessnock Subway Station	Regular maintenance and drainage upgrades with GCC	• % reduction in reported drainage issues? • Incidents of localised flooding or standing water (no. per year) • % Drainage inspections completed? • Annual maintenance costs vs reactive repair costs? • Reduction in emergency call outs %
Cowcaddens Subway Station	SUDs and drainage improvements	• % reduction in surface water runoff • flood incident frequency (no/year) • SUDS implementation rate (%)

Title	Description	MER Indicator
131 St Vincent Street, Glasgow, G2 5JF	Adaptive/improved design of retrofit for future proofing	• % of building areas upgraded to meet climate resilience standards
Woodville Street, Ibrox	Regular maintenance with GCC as responsibilities are split between both	• Biodiversity health indicators (e.g. no of key species) • % of land maintained in line with biodiversity best practices • No. of community engagement activities per year?
Ibrox Subway Station	Regular maintenance with GCC	• % of maintenance tasks completed • no. of unplanned repairs/defects reported per year
Kelvinhall Subway Station	Regular maintenance of guttering and drainage systems	• % reduction in reported drainage issues? • Incidents of localised flooding or standing water (no. per year) • % Drainage inspections completed? • Annual maintenance costs vs reactive repair costs? • Reduction in emergency call outs %
West St-Subway Station	Feasibility studies taking place - surface drainage systems	• To review feasibility study taking place in 2025

Next Steps

As SPT moves forward with the actions, it is essential to focus on fostering effective partnerships, ensuring alignment with regional and national strategies, addressing policy uncertainties, and collaborating with local authorities. These steps are crucial to achieving SPT goals, driving impactful change, and building a more sustainable and resilient future.

5. Support Partnership Work with Local Authorities (LA) / Climate Ready Clyde:

- Foster strong partnerships with local authorities and initiatives like Climate Ready Clyde to ensure a cohesive approach towards climate resilience.
- Collaborate on joint projects and share best practices to enhance the effectiveness of climate adaptation strategies for SPT assets as well as surrounding areas.
- Engage in regular meetings and workshops to align goals and actions, facilitating a united front in tackling climate challenges.

6. Alignment with Regional Transport Strategy (RTS) and National Transport Strategy (NTS):

- Clearly outline and direct efforts related to climate resilience through the Regional Transport Strategy (RTS).
- Ensure that actions are aligned with the National Transport Strategy (NTS) to maintain consistency and coherence across different levels of planning. Looking at the following actions:
    - **Promoting Active Travel:** Encouraging walking and cycling as viable travel options to reduce carbon emissions from vehicles.

  - **Investing in Public Transport:** Enhancing public transportation infrastructure to provide efficient and low-emission alternatives to car travel, including electrification of rail services and investment in electric buses.
  - **Supporting Low Emission Zones:** Implementing zones to restrict the most polluting vehicles from entering urban areas, thereby improving air quality and reducing overall emissions.
  - **Encouraging the Use of Renewable Energy:** Utilising renewable energy sources for transportation, such as electric vehicles and charging stations powered by renewable energy.
  - **Carbon Reduction Targets:** Setting ambitious carbon reduction targets that align with national goals, aiming for net-zero emissions by 2045.

- Develop comprehensive plans that integrate climate resilience measures into broader transport policies and infrastructure development.

7. Policy Uncertainty:

- Identify and analyse areas of policy uncertainty that may impact climate resilience initiatives.
- Engage with relevant stakeholders to clarify policy directions and advocate for supportive policies that facilitate climate adaptation.
- Stay informed about legislative changes and adapt strategies accordingly to ensure compliance and effectiveness.

8. Collaboration with All Local Authority Parties:

- Establish a collaborative framework that includes all local authority parties to ensure inclusivity and comprehensive coverage of climate resilience efforts.
- Promote transparent communication and information sharing among local authorities to foster a unified approach.
- Work together to identify and implement practical solutions that address specific climate risks and vulnerabilities in different regions.
- By implementing these detailed steps, we can create a robust and coordinated approach to enhancing climate resilience within the transport network, ensuring that policies and actions are effectively aligned and executed.

Appendix 1 – SPT Asset Register

ID	Type	Property	Description
	Building	St Enoch Square, Retail Unit, G1 4BW	Coffee Shop let to Third Party (former Travel Centre)
	Building	Broomloan Depot, Robert St, Govan, Glasgow G51 3HB	Operational Subway Depot
	Building	Seaward Street Store	Storage
	Building	Buchanan Bus Station, Killermont Street, Glasgow, G2 3NW	Operational Bus Station owned and operated by SPT.
	Building	131 St Vincent Street, Glasgow, G2 5JF	Office owned and occupied by SPT
	Building	Shields Road, Unit 1, 360 Scotland Street, G5 8QF	Restaurant let to Third Party
	Building	Shields Road Unit 2, 360 Scotland Street, Glasgow, G5 8QF	Shop let to Third Party
	Building	Hamilton Bus Station, Brandon Street, Hamilton ML3 6DA	Operational bus station
	Building	East Kilbride Bus Station, 7 Olympia Way, East Kilbride G74 1JT	Operational bus station, stances and former ticket office
	Building	Greenock Bus Station, 28 Kilblain Street, Greenock PA15 1SR	Operational bus station, stances and former ticket office
	Carpark	Westerton Rail Station Car Park, Maxwell Avenue, Bearsden, G61 1PA. Operated by Scotrail	Small part of Westerton Rail Station Car Park
	Carpark	Constarry Road, Croy, G68 9AA	Extended part of Rail Station Car Park leased to Third Party (Croy Railway Station).
	Infrastructure	Renfrew - Plot 1 Yoker Ferry Road (North)	Slipways operated by ferry operator
	Infrastructure	Renfrew - Plot 2 Yoker Ferry Road (South)	Slipways operated by ferry operator
	Infrastructure	Partick Bus Interlink	Operational bus station / infrastructure. We maintain this area.

ID	Type	Property	Description
	Land	Woodville Street, Ibrox	Vacant land adjacent to Ibrox Subway Station. Leased under licence to a community not for profit
	Land	Garrioch Quadrant, Maryhill, Glasgow, G20 8RT	Land formerly reserved for transport purposes. Site currently vacant but managed by us.
	Land	Millerston Turning Circle, Station Road, Glasgow, G33 6NL	Forms part of road
	Land	272 Langmuir Road, Bargeddie, Glasgow, G69 7RR	Land adjacent to Rail Station Car Park. We do own this land and although there is no official agreement it is maintained by others.
	Land/Building	217 Gartcraig Road, Riddrie/Gartcraig, G33 2SS	Land/Buildings let to Third Party. Leased by GCC as a road's depot
	Park And Ride	West St- Car Park	Former car park
	Park And Ride	Shields Road, Car Park multi-storey	Park and ride
	Park And Ride	Shields Road, Car Park surface	Park and ride
	Park And Ride	Bridge Street, Car Park	Park and ride
	Park And Ride	Kelvinbridge Car park	Park and ride
	Subway Building	Edminston Drive, Ibrox (Broomloan Depot Test Track)	Currently operational Subway Depot Test Track. Currently licenced to the JV for train testing
	Subway Station	Buchanan Street Subway Station	Operational Subway
	Subway Station	St Enoch Subway Station	Operational Subway
	Subway Station	Bridge Street Subway Station	Operational Subway
	Subway Station	Cessnock Subway Station	Operational Subway
	Subway Station	Ibrox Subway Station	Operational Subway
	Subway Station	Govan Subway Station	Operational Subway

ID	Type	Property	Description
	Subway Station	Partick Subway Station	Operational Subway
	Subway Station	Kelvinhall Subway Station	Operational Subway
	Subway Station	Hillhead Subway Station	Operational Subway
	Subway Station	Kelvinbridge Subway Station	Operational Subway
	Subway Station	Cowcaddens Subway Station	Operational Subway
	Subway Station	West St-Subway Station	Operational Subway
	Subway Station	Shields Road, Subway Station	Operational Subway
	Subway Station	St Georges Cross Subway	Operational Subway
	Subway Station	Kinning Park Subway Station	Operational Subway

References

[i] European Commission – Causes for Climate Change: available at: Causes of climate change - European Commission

[ii] Scotland Climate Change Plan 2019, available at: Climate change - gov.scot (www.gov.scot)

[iii] Glasgow's Climate Plan, 2019, available at: Glasgow's Climate Plan - Glasgow City Council