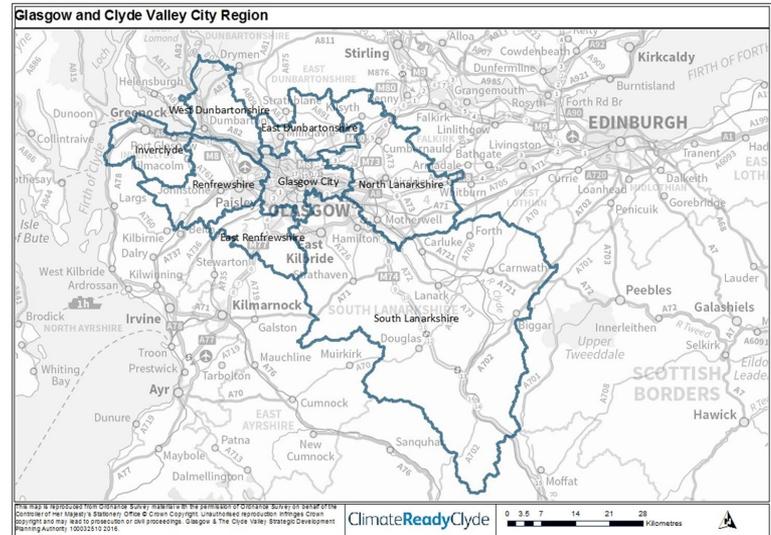


Managing climate risk for prosperity – Glasgow City Region's Adaptation Approach



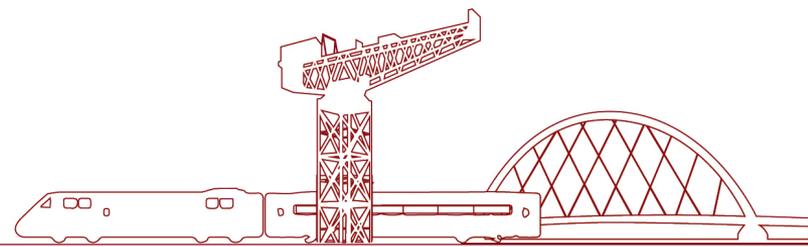
19 June 2019

- 8 municipalities within Glasgow City Region
- £40bn GVA – a third of Scotland's Economic Activity
- 1.8m people live, work and play here
- Diverse mix of urban and rural areas

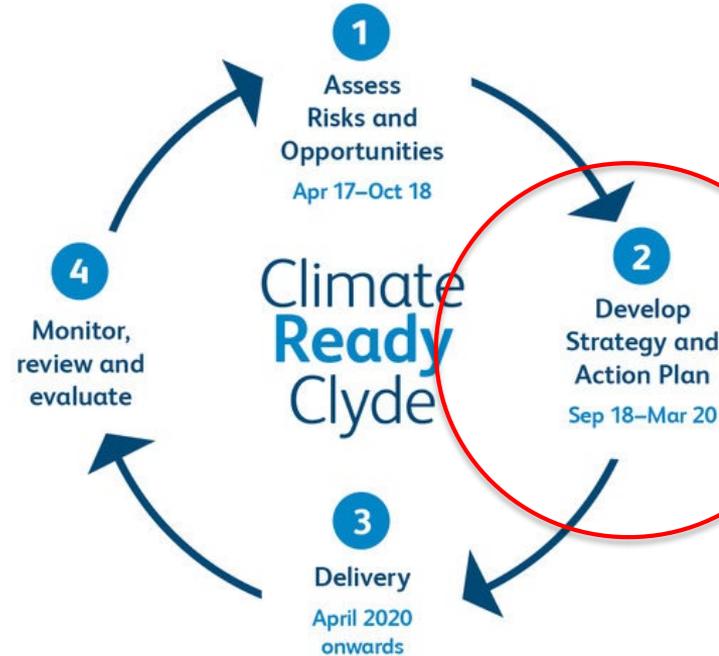


Credit: University of Glasgow

Climate Ready Clyde

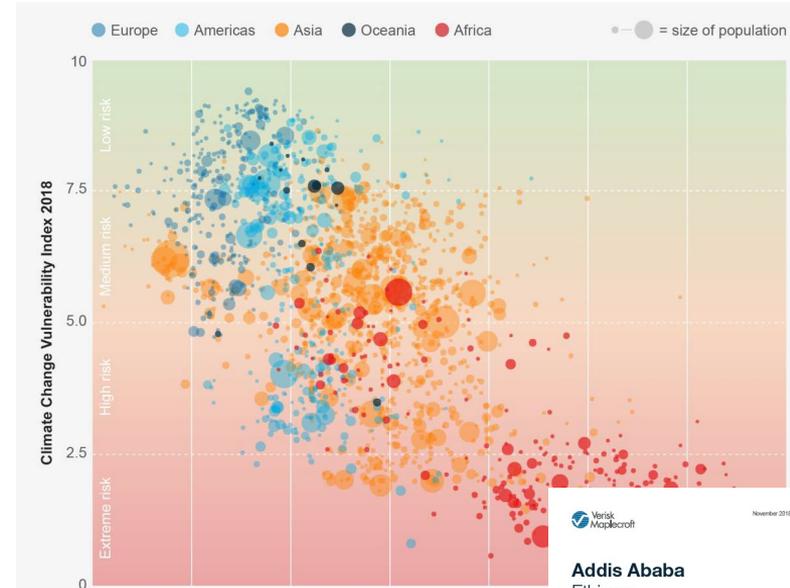


- Strategic initiative to support Glasgow City Region to manage the current and future impacts from the climate crisis.
- 15 partners establishing a coordinated, cross-sector long-term approach to adaptation
- Key mechanisms:
 - Development of adaptation strategy and action plan, & shared evidence base
 - Capacity building and support
 - Climate leadership and advocacy and international knowledge exchange
- Development of Adaptation Strategy and Action Plan underway – endorsed by Glasgow City Region Cabinet



Strategic framing in Glasgow City Region

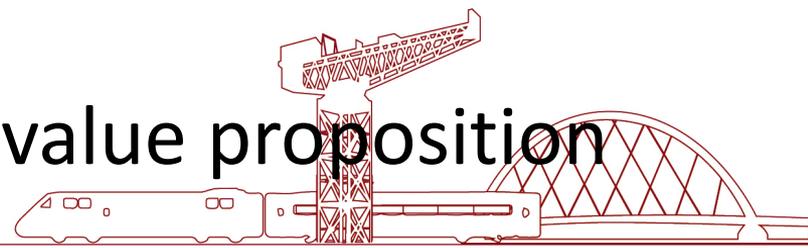
- **Supporting Inclusive Economic Growth**
 - Climate proofing support long term economic performance
 - Private sector confidence – will strengthen positions in Inward investment tracking services
 - Ensuring new capital investment achieves economic uplift for long-term
 - Done correctly, can reduce mental and physical health impacts, including disproportionate effect on most vulnerable – e.g. children, elderly, low income, renters
- **Improving attractiveness of City Region** as a place to live, work and play – enhancing our cultural heritage
- **Fiscal sustainability** – Helps avoid unforeseen costs



Source: Verisk Maplecroft.



Why it's proved a successful value proposition



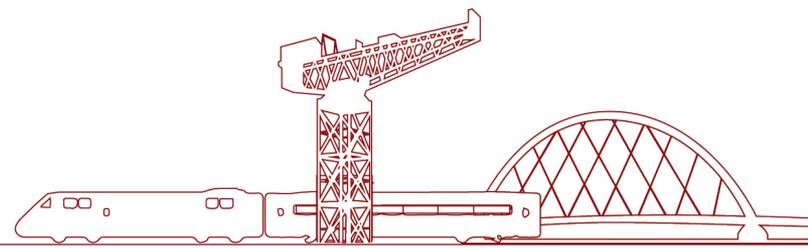
- Timely adaptation is more cost-effective than responding to impacts
- A collaborative, co-ordinated approach to climate change risks and opportunities produces better quality and less costly responses - collectively and individually
- Supporting joined-up policy, making delivery more straightforward
- Value for money - efficiencies of scale in a regional, strategic process
- Collaboration necessary to fulfil spirit of statutory duty



Our members



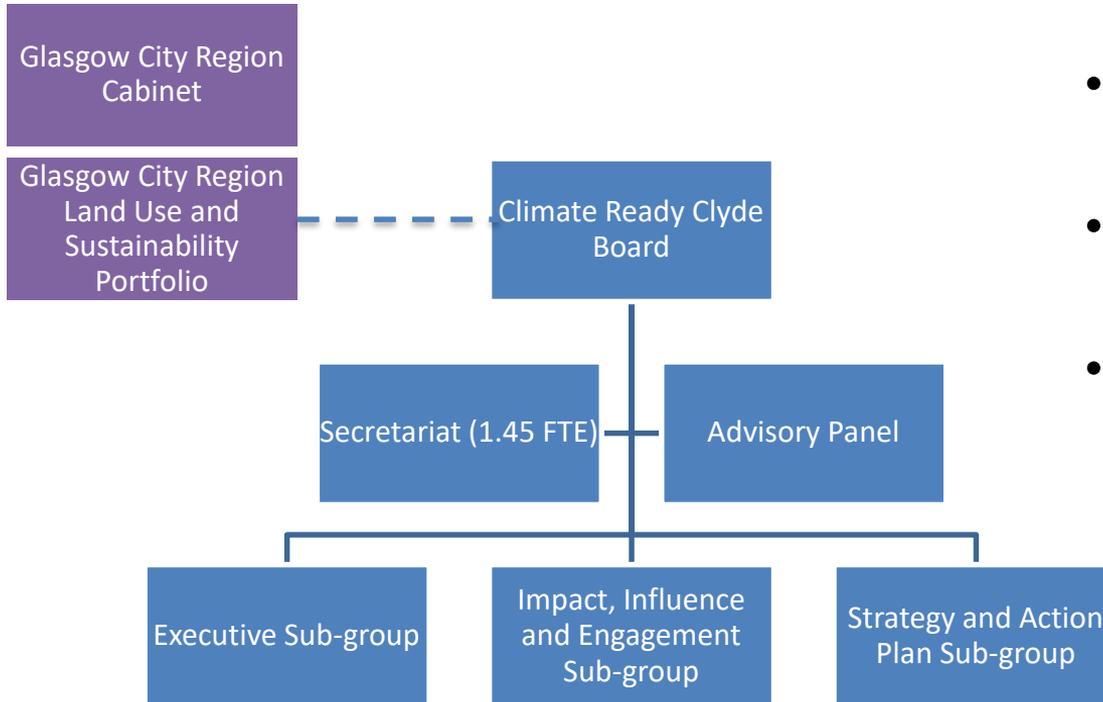
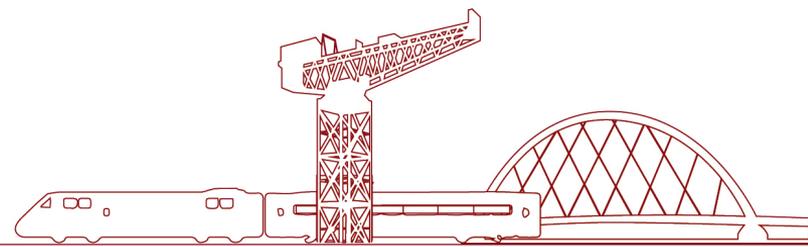
Scottish Government
Riaghaltas na h-Alba
gov.scot



Climate Ready Clyde is a cross-sector initiative, funded by 15 partners and delivered by sustainability charity, Sniffer.

ClimateReadyClyde

Governance



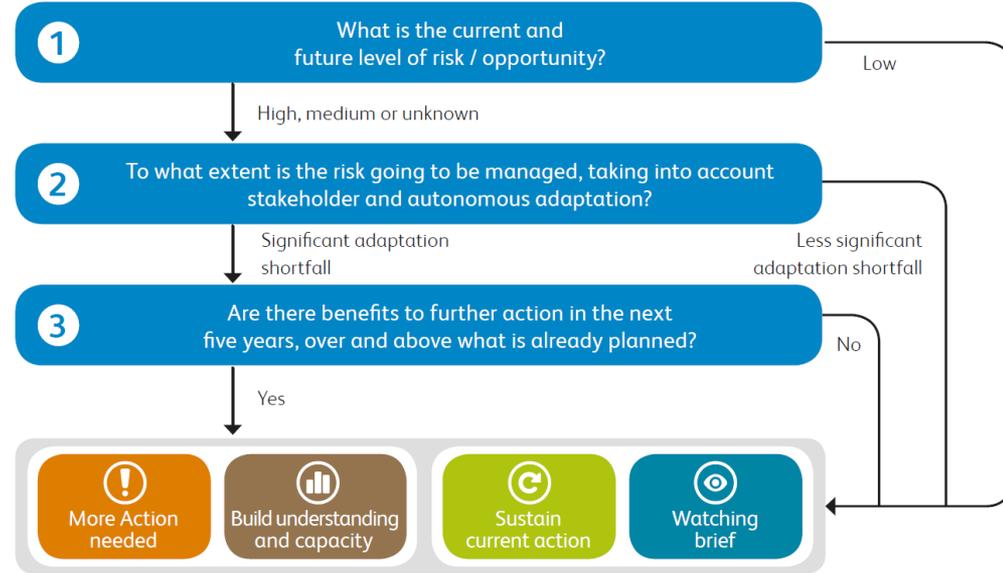
- Work programme agreed by board
- Co-funded contributions of around £8,000 per partner
- Independent chair – non remunerated



Climate Risks and Opportunity Assessment for Glasgow City Region

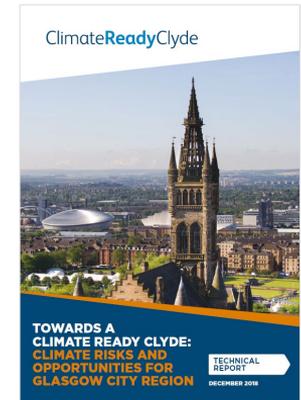
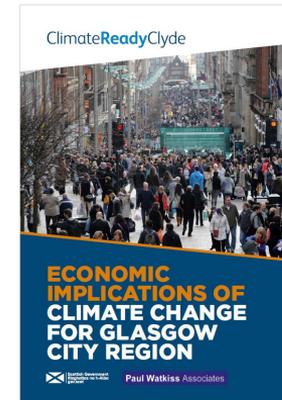
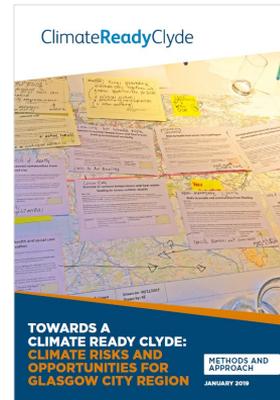


- Process for prioritising action on
- 67 climate risks and opportunities identified for Glasgow City Region
- Collaborative process, designed and delivered with over 100 stakeholders from across Glasgow City Region, Scotland and UK – designed
- Advised by international advisory board of academics, cities, and the Committee on Climate Change
- Assumes a 4 degree rise, though scenarios considered where available
- Management of risks mapped to UN SDGs



Outputs

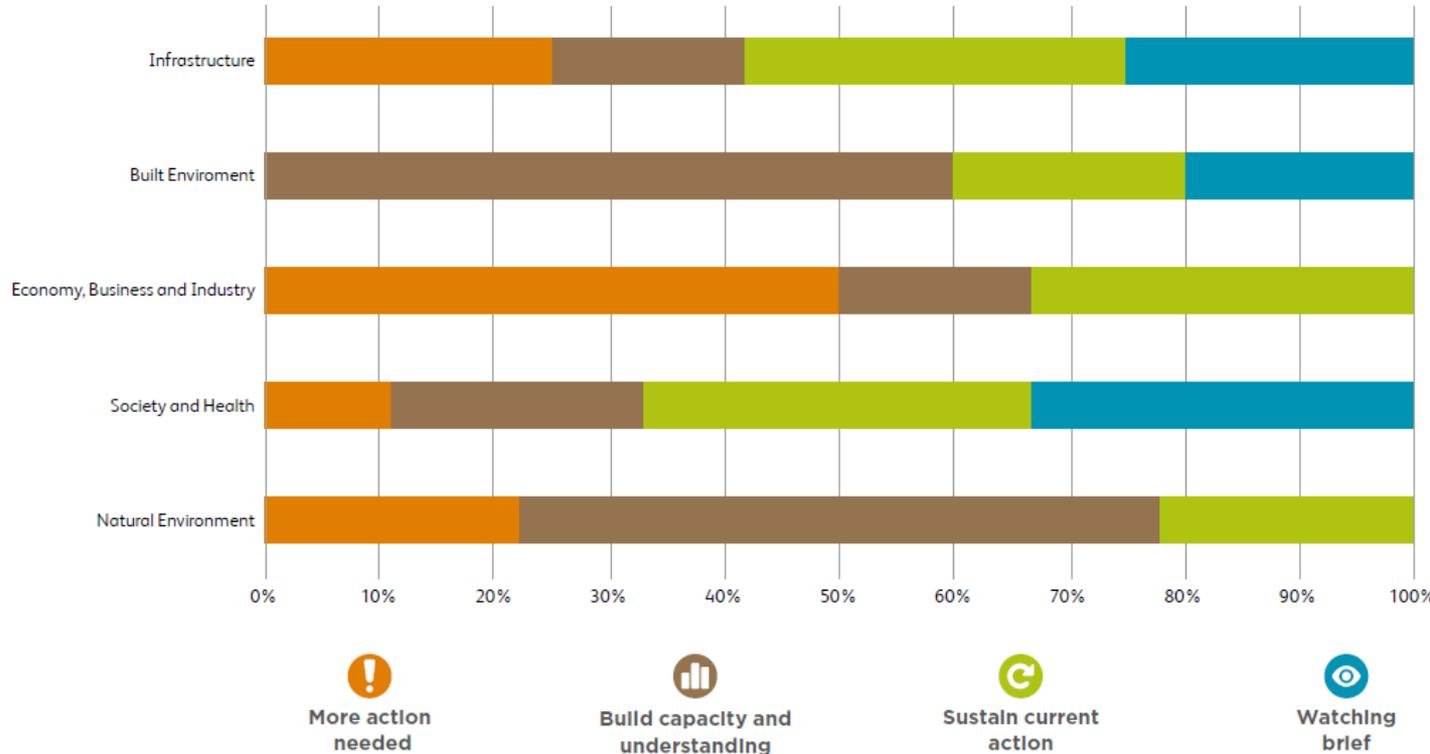
- Key findings and next steps
- Technical Report
- Economic Implications study
- Methods
- Website and 'at a glance' wallcharts
- Supporting research and downloadable data



Urgency scores by theme

Progress is well underway in some sectors (e.g built environment). More action is needed in other areas, such as infrastructure and economy.

N.B. international issues, cross cutting and adaptive capacity issues not ranked due to lack of local evidence



Economic implications

- Partial assessment of 4 recent weather events show they cost Glasgow City Region £60m
- Total aggregate costs from climate change is estimated at £400m/year in 2050s – dominated by flooding impacts
- Similar numbers in terms of benefits from reduced heat demand and morbidity and mortality
- Large-scale one-off climate events would have high financial and economic impacts, as well as wider (multiplier) effects

Cost (or benefit) = the number of physical units in year *t* times the economic unit value

Specifically:

The cost (or benefit) of a weather-related event on a specific vulnerable receptor (or group of receptors), under selected climate and socio-economic scenarios (£ per event in year *t*)

equals

The predicted 'physical' impact on the vulnerable receptor(s), under selected climate and socio-economic scenarios (the number of physical units affected by the event in year *t*)

times

The appropriate economic unit value or 'price' (£ per affected unit in year *t*)

Priority risks for further action

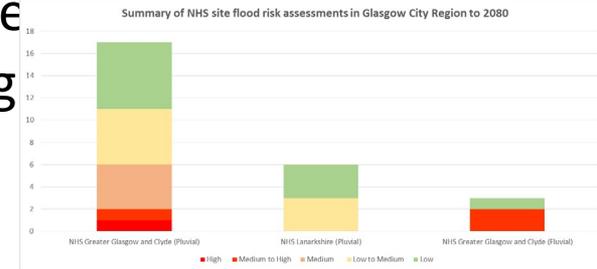


Transport infrastructure

- Flood risks to M8
- Coastal erosion to Western Rail line to Helensburgh
- Storms and high winds impact on Erskine Bridge

Healthcare

- 6 hospitals at 1 in 200 year risk of surface water flooding (including Royal Alexandra, Gartnavel Royal, Inverclyde)
- NHS Health Scotland identify risk of overheating risk





Priority risks for further action



Natural Environment

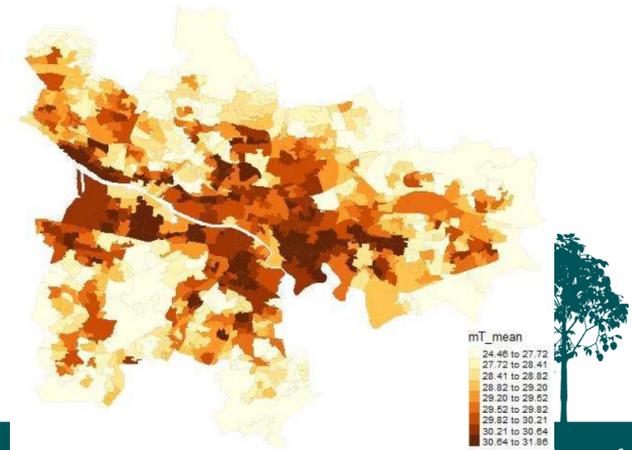
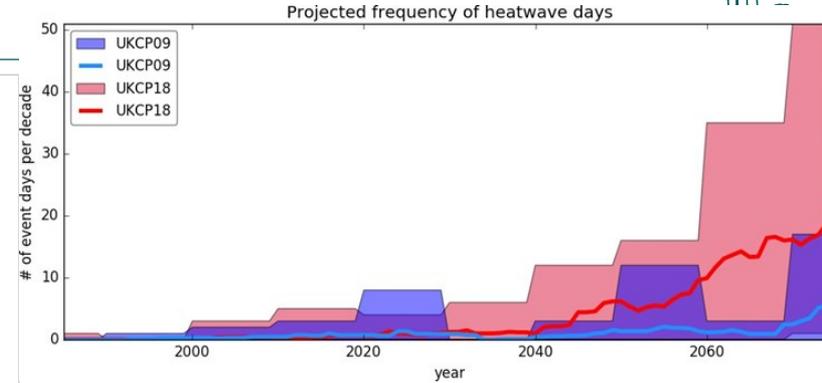
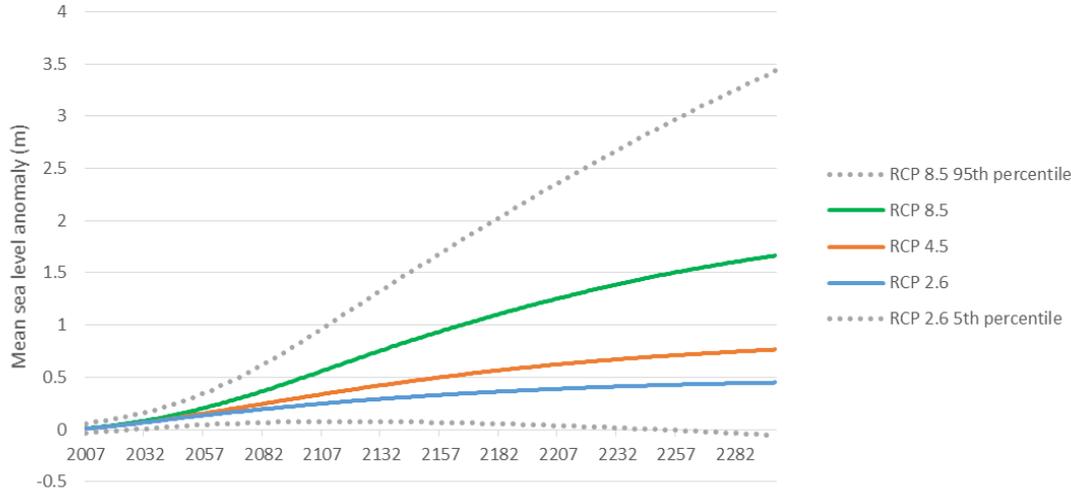
- Risks to soil stocks, crops and livestock from changes in temperature and water regime
- Terrestrial and Marine biodiversity from changes to habitat suitability, pests and invasive species

Business and Industry

- Business sites – 12 SEILs at Moderate risk of flooding, alongside increasing risk to non-domestic premises
 - Supply chain and distribution networks – potential impacts on ports, airport and freight hubs
 - Opportunities for adaptation products and services
- 

Changing hazards for Glasgow City Region

Sea level anomalies for marine projections near Dunoon and Gourock using exploratory method, 2007-2300



Adaptation Framework objectives

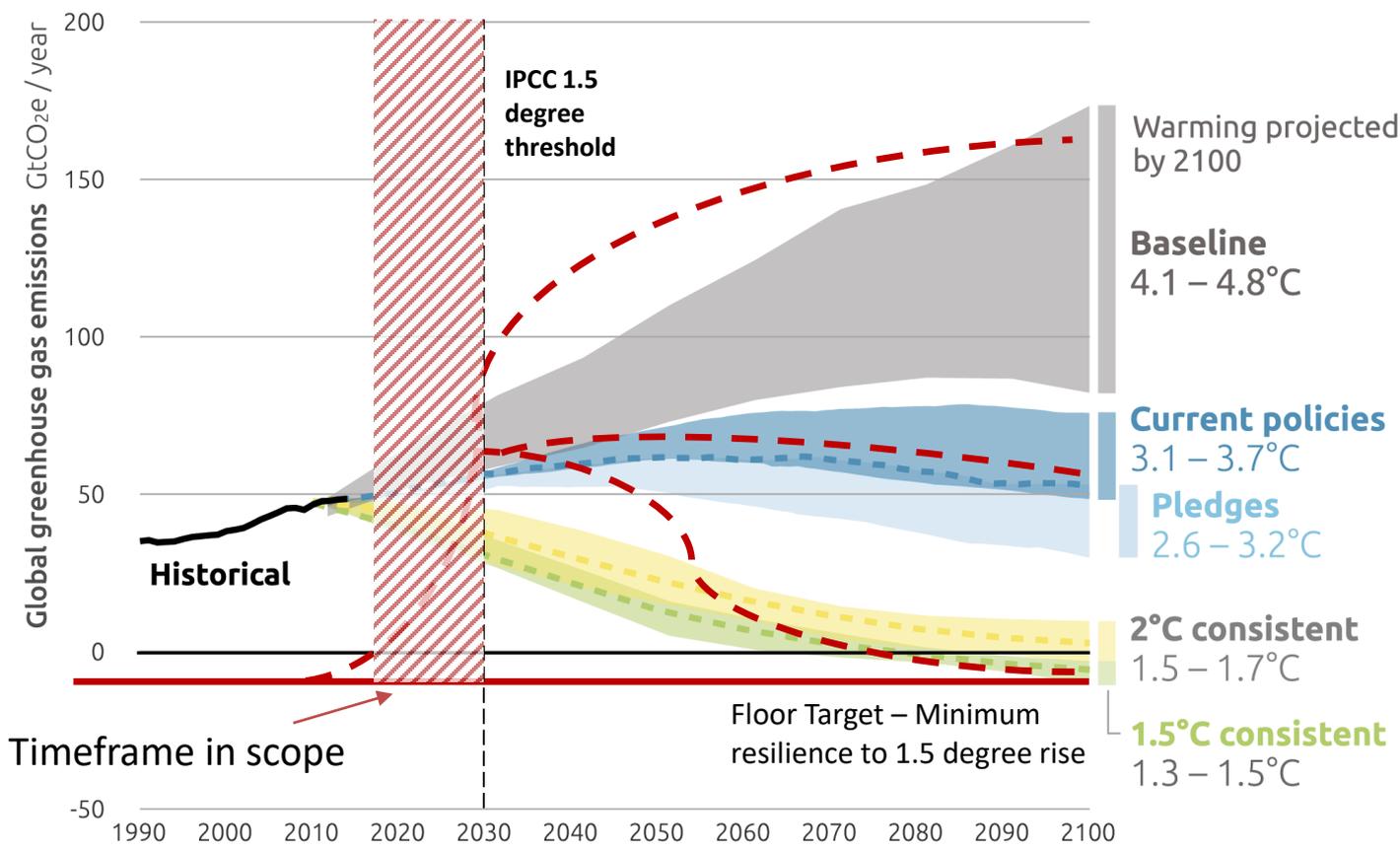


- **Build the City Region's overall resilience to projected future climate change**
- Address priority risks from Risk and Opportunity Assessment in a fiscally responsible way
- Support City Region's broader agendas around economic development, eliminating emissions, inequality and fairness, place-making and value for money
- Outline the mechanisms for future delivery – funding and accountability - partnership working crucial here





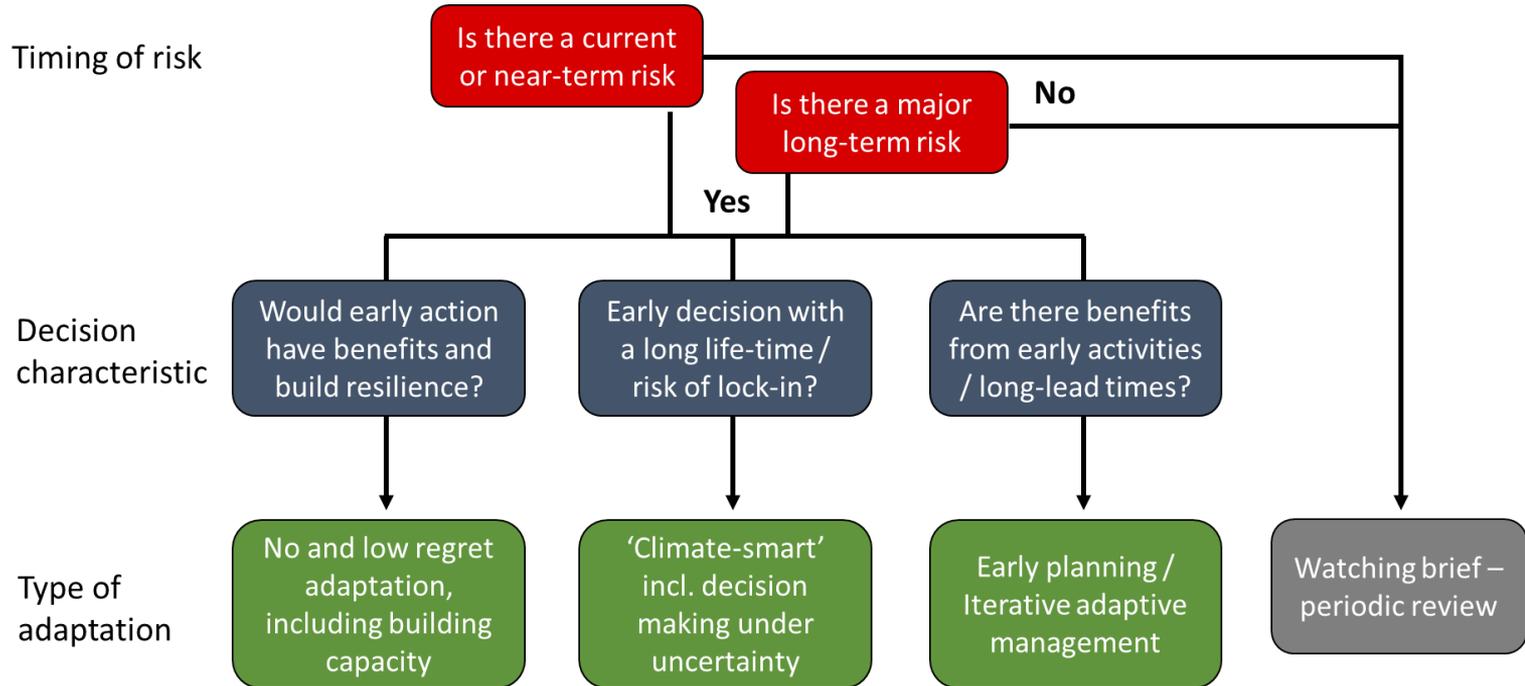
Trajectories for Glasgow City Region's adaptation framework



- IPCC 'gives world 11 years before pathways relatively fixed
- Range of uncertainty on climate change
- Global emissions target of 1.5 – 2 degrees
- Government's ramp up efforts every 5 years – next due in 2020
- Aim to build 4-degree capacity and resilience now – revise with mitigation progress
- Actual assumptions will vary

Emissions Data: Climate Action Tracker

Prioritisation of adaptation options



How can members support effective adaptation?



A real opportunity for members to champion an emerging policy issue:

- Making adaptation understood as a long-term societal challenge for Local Authorities – similar to an aging population or AI/digital economy
- Providing leadership to establish and legitimise the agenda – including ensuring adequate resources, skills and capacity allocated
- Ensuring it is understood as a social and economic challenge for *all* services, not just in the ‘environment’ box
- Ensuring scrutiny and accountability for delivery of actions
- Raising awareness with communities, and supporting their engagement and involvement

