Glasgow - A city poised for the future

Glasgow is the biggest city in Scotland. It is the economic engine and main commercial hub, not only for the City region, but also for the country. Almost 2.5 million people, half of Scotland’s population, live within an hour of the City. Since the 1980s the city has been undergoing an economic revival through regeneration, restructuring and reinvention of some of its communities. With climate scenarios predicting a warmer, wetter climate and more extreme storm incidents which could occur at any point in the year, climate change adaptation is a real and pressing challenge to the continued success of the city.

While we are taking action at a local government level, how can we help people to adapt to protect themselves and their property from the predicted climate impacts?

Key facts
- Glasgow’s population is almost 600,000 (2011) and has been on the rise over the last 10 years after decades of decline.
- The city has a median age of 35 years- 68% working age population- a relatively young population compared with the rest of Scotland
- The number of households in Glasgow is predicted to rise by 28% over the next 25 years.
- Single adult households will continue to rise and will soon form the majority of households
- Almost 50% of the City’s residents live in the 20% of most deprived areas in Scotland
- 73% of dwellings in Glasgow are flats, reflecting the City’s tenements
- There are over 1800 listed buildings or structure and 25 conservation areas
- Climate impacts indicate a growing risk of flooding from various sources and major investment is needed to deal with this over the next 50 years

Challenges in context
Glasgow, with its geography and urban infrastructure, like many urban areas, faces a series of interconnected climate-related challenges, which are anticipated to become more serious in the coming years. For example, extreme rainfall, combined with tidal rivers, aged sewerage
systems and much of the city’s location on a flood plain can lead to severe flooding events. Winds of more than 70mph can do structural damage to the urban infrastructure and the large proportion of aging properties, many of these listed, are not easy to adapt to temperature extremes. Glasgow City Council and The Metropolitan Glasgow Strategic Drainage Partnership (MGSDP) have set two challenges, representing areas in which they have demand for solutions to help build resilience to climate change.

**Challenge 1:** Flood mitigation systems that can be retrofitted to commercial or residential properties

**Challenge 2:** Seeking innovative ways to engage stakeholders and communities to take-action in addressing Glasgow’s urban environmental challenges

**Benefits from participation**

Start-ups, established companies, researchers, entrepreneurs and community groups are all invited to submit solutions to help Glasgow City Council address their future climate adaptation and flood risk challenges.

Participation in the challenge offers the following opportunities to participants:

- This challenge presents a rare opportunity to engage with Glasgow City Council and the MGSDP to develop innovative and scalable solutions to its resilience challenge.
- The winning ideas will receive awards of up to £20k to further develop their innovation solutions, with the potential for these to be deployed in Glasgow and by MGSDP partners.
- Those involved with the shortlisted ideas will be invited to participate in the Innovation Day of the European Climate Change Adaptation conference on the 7th June (http://ecca2017.eu/). This will be the Challenge finals and a chance to pitch your solution to a selection panel and to a conference audience.
- In addition to the chance of winning the challenge, there is the potential to showcase your company, research or innovation to audiences that will include funding agencies.
MGSDP wants to identify interventions to reduce flood risks and impacts across Glasgow. Whilst there is an established toolkit of interventions that can be deployed in public spaces, there is a need for solutions that can be retrofitted at private residences and businesses. Solutions need to act as a buffer for surface water flow, temporarily holding water before slowly releasing it back into the environment or drainage system.

A key intervention point is downpipes which convey water run-off from roofs. Examples of potential solutions here include specially adapted water butts (that either fully or partially drain after rainfall in readiness for future rain) or large planters linked to downpipes (raingardens), allowing soil to hold on to water prior to allow uptake by plants / vegetation and slower release into the environment.

Other potential intervention areas include driveways and other paved areas. Any proposed solutions will need to meet the following criteria.

**Key criteria**
- Easily retrofitable solutions are essential
- Add approximately 150 - 1,000 litre buffer / water attenuation capacity per residential property or downpipe (for businesses it would need to be proportionally scaled to the footprint of the business – larger capacity for larger footprint)
- Attractive for private households / business to be happy to adopt: Households / businesses will not be expected to pay for installations, but as a minimum they need to be happy to accommodate it on their property. Therefore large unsightly solutions are out of scope.
- Low cost solutions, < €250 per residential household, including installation assuming economies of scale of >200 installations. A proportionally larger budget for larger scale businesses installations (increased cost needs to be linked to increased water attenuation)

**Non-essential Criteria**
- ‘Ready to go’ proven solutions – ideally solutions would be proven in similar or analogous applications
- Easy to remove from properties if required
- Manufactured in the Glasgow area
- Delivers secondary benefits; for example
  - It had some use, like a water butt to store some runoff for local use during dry weather
  - It is attractive / decorative

**Challenge 1 - Urban flood mitigation**

This Challenge is seeking to identify floor mitigation systems that can be retrofitted to commercial or residential properties.
Challenge 2 - Community engagement in climate adaptation

This Challenge is seeking innovative ways to engage stakeholders and communities to take action in addressing Glasgow’s climate adaptation and environmental challenges.

This a broad challenge seeking to encompass a wide range of possible approaches. This may include specially designed social media campaigns that go viral, crowd funding initiatives or other approaches that are innovatively designed to empower community engagement. The ECCA event itself is a vehicle for raising awareness and kick starting this, but there is huge scope for ideas and initiatives that take this to the next level and galvanise specific actions on the ground. One key aim is highlighting the challenges and making them interesting and known to the different stakeholder groups as well as motivating them to engage and take action.

Further examples to illustrate the type of initiatives that would be relevant to this challenge are summarised below:

- Community engagement in building raingardens - Raingardens are specially designed garden beds which filter runoff water from roofing downpipes. They act as a buffer to mitigate flooding. A campaign in Melbourne Australia promoted raingardens to local communities to reduce flooding issues. There was a central website with all the necessary guidance for installation combined with platforms for social engagement – including a “ticker” counting the number of gardens and progress towards a community target.

- Crowd funding mechanisms to improve the environment have shown success at engaging communities in some areas in Scotland, enabling the local community to take ownership of their environment.

- Other engagement or educational tools, models or campaigns potentially leveraging celebrity endorsement or corporate sponsorship (an equivalent to ‘the Jamie Oliver school dinners campaign’ but aimed at highlighting or taking action to address Glasgow’s climate adaptation challenges.)

Criteria to consider:

Solutions and ideas submitted should seek to address the following criteria:

- Evidence or reasons to believe the approach can mobilise communities into action to enhance the local environment or similar.

- Evidence or reasons to believe the approach would be suitable for an urban environment and context like Glasgow.

Submissions which combine initiatives with adoption of specific technologies will also be considered, where the technology is low cost and can be retrofitted.
The Glasgow Resilience Innovation Challenge is organised in partnership by Climate-KIC, Sustainable Glasgow, MGSDP and Innovate UK.

About Climate KIC

Climate-KIC is the EU’s largest public private partnership addressing climate change through innovation to build a zero carbon, climate resilient economy. It runs programmes for students, start-ups and innovators across Europe via centres in major cities, convening a community of the best people and organisations. Services offered by Climate-KIC include Demand Led Innovation Brokerage, which involves connecting organisation with climate related challenges to carefully identified and selected providers of innovative solutions. Climate-KIC is supported by the European Institute of Innovation and Technology (EIT), a body of the European Union.

About Sustainable Glasgow

Sustainable Glasgow aims to make this City one of the greenest in Europe. The Partnership’s diverse projects are improving quality of life in the city, boosting the economy and protecting the environment. They cover everything from the installation of LED street lights and electric car charging points to the creation of renewable energy schemes and green jobs. The council-led initiative was formed in 2010 to make Glasgow a world-leading centre for sustainable policy, innovation and action. It has partners from housing, communities, business, universities, enterprise and education.

About MGSDP

The MGSDP (Metropolitan Glasgow Strategic Drainage Partnership – www.mgsdp.org) is a partnership formed by organisations involved with the operation of the sewerage and drainage network within the area – Scottish Water, Glasgow City Council, Scottish Canals, South Lanarkshire Council, Clyde Gateway, Scottish Enterprise, Renfrewshire Council, East Dunbartonshire Council and the Scottish Environment Protection Agency (SEPA). The MGSDP 2060 Vision is to transform how the city region thinks about and manages rainfall to end uncontrolled flooding and improve water quality. The realisation of this vision will provide the flexibility to respond to other changes in the city region, recognised as being important by the Future Glasgow report ‘A 50 Year Vision for the Future’ and National Planning Framework 3 (NPF3) status, and help make Scotland a world leading Hydro Nation.

About Innovate UK

Innovate UK is the UK’s innovation agency. It’s our vision at Innovate UK to help the UK economy grow head and shoulders above other nations by driving disruptive innovation – inspiring and supporting pioneering UK businesses to create the industries of the future. We have a strong business focus and a track record of driving growth by working with companies to de-risk, enable and support innovation – putting them in a stronger position to attract investment and facilitating access to investors, collaborators, customers and export markets. We have helped more than 7,600 organisations with projects estimated to add more than £11.5 billion to the UK economy. Innovate UK is an executive non-departmental public body, sponsored by the Department for Business, Energy & Industrial Strategy.
Next Steps

To take part and learn more about the event, visit the Challenge website


**Submission deadline:** 1st May 2017

**Selected applicants notified:** 8th May 2017

**Open innovation event:** 7th June 2017 in Glasgow

Note: In an open innovation process, the exchange and discussion of ideas is important – both within your team, experts and with other participants. It is your responsibility to ensure that you protect your intellectual property.