

## Edinburgh Adapts – Creating an action plan for a climate resilient Edinburgh

The Edinburgh Sustainable Development Partnership (ESDP) are calling partners across the city, including communities, businesses and organisations, to help create a vision for a climate resilient Edinburgh and a city wide action plan. As a key stakeholder in the Edinburgh Adapts project you are invited to:

- [Provide feedback on the draft Edinburgh Adapts Vision \(deadline 30 November\);](#)
- [Propose actions that could be included in the action plan \(deadline 13 November\),](#) and
- [Take part in a sector specific workshop \(20,24, 26 November\)](#)

### Why we need to think about climate resilience

Edinburgh is a resilient city that has stood the test of time. The Edinburgh Sustainable Development Partnership (ESDP) is firmly committed to playing its part in ensuring that this remains the case.

The ESDP believes that the impacts of climate change such as increased flood risk, damage to buildings and infrastructure, and disruption to arts, music and cultural events present significant challenges for the city.

In response the ESDP published the [Resilient Edinburgh Adaptation Framework in 2014](#) and is now working with partners across the city to establish a long term vision for a climate resilient Edinburgh, and create a city wide action plan to be published in March 2016.

### Making your views count

The Climate Resilient Edinburgh vision and action plan are being developed through the Edinburgh Adapts project, led by an ESDP Task Group. The consultation and engagement phase of the project started in August 2015 when over 30 organisations participated in a workshop to find out more about climate impacts affecting the city, feedback their priorities for action, and help shape a vision for a climate resilient Edinburgh.

Now we are looking for feedback on the documents coming out of this workshop.

- [Provide feedback on the draft Edinburgh Adapts vision](#)

The draft Climate Resilient Edinburgh vision document sets out what a climate ready Edinburgh could look like in 2025 and 2050. You can find the draft vision in annex 1 of this document. Please complete the feedback form at the end of the draft vision and return it to James Garry [james.garry@edinburgh.gov.uk](mailto:james.garry@edinburgh.gov.uk) or Fiona MacLeod [fiona.macleod@edinburgh.gov.uk](mailto:fiona.macleod@edinburgh.gov.uk) by 30 November 2015.

- [Propose actions](#)

Between October 2015 and February 2016 the Edinburgh Adapts Task Group will work with stakeholders to identify and agree actions to be included in the action plan. Find out more about the action plan in annex 2 and complete the action proposal form. The deadline for proposing actions is 13 November 2015.

### Take part in a workshop

All the actions proposed will be discussed at sector specific workshops at the end of November 2015 and the workshop participants will prioritise which of the proposed actions should be included in the action plan. Register to attend a workshop by following the relevant link:

- [Natural Environment workshop – 20 November, 09:30-13:30, Dovecot Studios](#)
- [Infrastructure and the Built Environment workshop – 24 November, 12:30-16:30, ECCI](#)
- [Economy and Society workshop – 26 November, 12:30-16:30, Dovecot Studios](#)

All three workshops will follow the same format. Please contact James Garry [james.garry@edinburgh.gov.uk](mailto:james.garry@edinburgh.gov.uk) or Fiona MacLeod [fiona.macleod@edinburgh.gov.uk](mailto:fiona.macleod@edinburgh.gov.uk) if you are unsure as to which workshop to attend.

## Annex 1 Edinburgh Adapts Draft Vision

This document sets out a draft vision for a climate ready Edinburgh. It is important that the vision text accurately represents the views of Edinburgh Adapts project partners. At the end of the vision text a feedback form is provided to enable all partners to give their views on the draft vision.

At the first Edinburgh Adapts workshop on 10 August 2015 participants discussed the challenges and opportunities climate change will bring to the city. In order to help people understand what these changes might mean on the ground, participants identified key characteristics and images they associate with Edinburgh, and suggested goals the city should aim at as part of becoming climate ready.

The feedback from these exercises has been distilled into four pairs of themed vision statements – focusing on Economy & Society, Infrastructure & the Built Environment, the Natural Environment, and Governance. These vision statements aim to tell the story of Edinburgh’s adaptation journey, first in 2025 and then in 2050.

### Top five answers for Vision Questions

Question	Top five answers
How would you describe Edinburgh?	Historic, beautiful, vibrant, a festival city, a cultural centre
What comes to mind when you think of Edinburgh?	Edinburgh Castle, Arthur’s Seat, The Pentland Hills, The Scott Monument, Carlton Hill
What are the city’s best loved places and features?	Arthur’s Seat, The Water of Leith, Parks & Greenspace, Edinburgh Castle, The Seven Hills
What are people like in Edinburgh?	Friendly, canny, diverse, reserved, busy

### Draft vision text

#### Theme 1: Economy and Society

##### By 2025...

Edinburgh is seeing multiple rewards from early investment in adaptation. Work to improve flood resilience amongst the city’s most vulnerable communities is energising and empowering these neighbourhoods, creating networks of mutual support and ensuring those most at risk have a say in future planning. Essential improvements to critical infrastructure and key transport links are prioritised based on climate risk assessments.

Edinburgh’s businesses are benefiting from a reputation for resilience, increasing confidence amongst clients and investors, and encouraging entrepreneurs and talented staff to make the city

their home. Flexible working and strong ICT infrastructure allow more people to work from home, reducing commuting.

Key events in Edinburgh's cultural calendar are prepared for more frequent extreme weather, safeguarding the city's status as an international creative hub. A longer tourist season is creating new event opportunities drawing more visitors to the city. Universities and research institutes are seizing the chance to work with the city on cutting-edge adaptation projects, attracting funding and experts from across the world, and confirming Edinburgh's place in the top-flight of innovative, adaptive cities.

### **By 2050...**

Communities across Edinburgh are revitalised. Greater access to greenspace and localised food production is improving citizens' health, helping people engage with nature and regain civic pride. The distinct character of Edinburgh's neighbourhoods is maintained, but successful adaptation initiatives are empowering communities to build networks of mutual support, helping the city come together when faced with extreme weather events and other stress situations.

Businesses, universities and research institutions are at the forefront of urban adaptation, exporting pioneering skills and technology to meet growing demand, and cementing Edinburgh's position as a centre of excellence. Excellent public transport and ICT infrastructure safeguards economic resilience, creating confidence in business continuity and flexibility for employees.

Well informed planning is enabling Edinburgh's many festivals and celebrations to seize the opportunities afforded by changing tourism patterns and increase resilience to the most negative impacts of climate change.

## **Theme 2: Infrastructure and the built environment**

### **By 2025...**

Thanks to integrated planning, active travel and public transport use continues to grow across the city, reducing pressures on transport infrastructure and improving health. New developments have an eye on the future, bringing together cutting edge 'smart building' technologies while incorporating beneficial natural processes through green/blue architecture. With fewer workers commuting, streets are quieter, cleaner, and more multi-functional spaces.

Maintenance of Edinburgh's iconic historic buildings is being gradually and subtly adjusted to take account of the changing climate, safeguarding the city's heritage without altering its globally celebrated character. These improvements are exemplars of best practice and draw the attention of other historic European urban centres, themselves facing similar pressures from the changing climate.

Disruption to the public and to critical infrastructure is kept to a minimum despite an increase the number of flooding events and storms. By investing in sustainable drainage systems, keeping existing channels clear and redirecting water flows to areas of natural permeability, water is able to flow

through the city in a controlled manner, reducing the potential for damage and keeping insurance costs low.

### **By 2050...**

Edinburgh's seven hills are green nodes in the city skyline, connected by roof-top meadows and tree-lined streets. The towering grandeur of the Old Town and the elegant rise of the New Town are joined by a thread of innovative climate smart developments, while established communities are connected to the centre by active travel greenways.

Community gardens, growing spaces, and permeable pathways and cycle lanes have replaced hard surfaces to improve water permeability across the city. With fewer cars, whole streets have been reclaimed for pedestrians, providing new civic areas and encouraging children to play outside, engaging with nature and improving their health.

Sea levels continue to rise, bringing storms and high waves, but land use planning and improvements to coastal defences are protecting shore communities and important industrial areas. The city is flexible and resilient: Flexible from using natural process and state of the art technology to move with the grain of the weather. Resilient through using diverse energy sources – including community and small scale utilities projects – ensuring it is insulated from shocks in other areas.

## **Theme 3: Natural Environment**

### **By 2025...**

Changes in climate are altering the distribution and populations of tree and plant species across the city, with some species flourishing while others become less common. Regular monitoring of much loved woodlands, parks and waterways allow the city to protect these natural havens from new pests and diseases.

Work continues to connect the major greenspaces in the city. Communities are encouraged to make their gardens wildlife friendly and developers are working hard to include green spaces in new developments.

Many brownfield sites and disused industrial areas are being transformed into 'pop up' community gardens, growing spaces and wildflower meadows. Nature flourishing across the city benefits people's health and wellbeing. The natural environment is also acknowledged as playing a vital role in protecting people, their homes and their businesses. Parks and greenspaces provide areas for holding water during heavy rainfall events, while healthy trees supply shade during warmer weather and draw pollutants from the air, improving public health.

### **By 2050...**

From atop Arthur's Seat green threads weave through Edinburgh, a natural web connecting tree-lined neighbourhoods to flourishing community gardens and parks ringed with wildflowers that change with the seasons. Nature has grown vertically as well, with wall gardens and green roofs increasing biodiversity while also helping to manage water and temperature throughout the year.

Re-wilding of the city's rivers, streams and waterways is improving biodiversity while harnessing natural processes to improve drainage and water quality.

The impacts of new pests brought by the changing climate are kept to a minimum by maintaining a balance of diverse species. The public are aware of potential risks, allowing swift action to protect nature from emerging threats.

Food production is highly visible in the city again. Fruit trees, herbs and vegetables grow in city parks, tended and harvested by local communities. Sharing these skills, keen residents are being supported to transform private gardens into edible enclaves, increasing food security and reconnecting people with the food on their plate.

The city's vibrant, green reputation is attracting new families and new investment. Schools are taking advantage of the gardens on their doorsteps to teach children to engage with nature, bringing the classroom outside, and the increased opportunities for outdoor recreation have improved health and wellbeing across the population.

## Theme 4: Governance

### By 2025...

It's been ten years since organisations, businesses and communities came together to develop the city's first adaptation action plan and the benefits are clear across all parts of the city. Partners have built strong relationships and remain firmly committed to working together to share knowledge and take action for an ever more resilient Edinburgh.

Resources are targeted at areas most at risk, based on assessment of climate risk and consideration of a wide range of social and economic factors. This is helping to tackle inequality and deliver increased climate resilience as part wider transformation. Communities that are already feeling the impacts of climate change are empowered to help shape the future of their neighbourhoods. Internally, organisations are providing training to staff to ensure that climate resilience is included at all stages from strategic planning to on the ground delivery.

### By 2050...

Empowered communities, responsible businesses and public sector organisations are working together in trust and partnership. They are shaping how the city develops as it faces new challenges and opportunities, and are working together to make sure that climate resilience is taken account of in city plans, policies and investment decisions.

An engaged population is kept informed of risks such as heatwaves and severe weather through a flexible communications strategy, with neighbourhood networks helping emergency services to put well designed contingency plans into action.

A significant bank of practical case studies on urban climate change impacts, built up over years of data gathering and research, allows Edinburgh to act as a knowledge hub for similar cities. The

capital is staying ahead of the curve, with a reputation as an adaptation champion, continuing to attract talented thinkers, fresh investment and international recognition.

## The Edinburgh Adapts Draft Vision Text

### Feedback Form

Vision statements are used to motivate and inspire multiple audiences by providing a clear, exciting view of the future. The Edinburgh Adapts Vision Statement will complement the specific interventions set down in the city's Adaptation Action Plan by creating a snapshot of daily life in a well-adapted city.

As a collaborative project we want to make sure the vision text captures the aspirations of all those involved in Edinburgh Adapts, balancing as far as possible participants visions of the success. To that end, we would value your feedback on the first draft of the vision text. This feedback will be incorporated into a second draft which, once approved, will be used to create promotional materials.

Completed feedback forms should be emailed to James Garry [james.garry@edinburgh.gov.uk](mailto:james.garry@edinburgh.gov.uk) or Fiona MacLeod [fiona.macleod@edinburgh.gov.uk](mailto:fiona.macleod@edinburgh.gov.uk) by 30 November 2015.

- 1) Please note below elements missing from the draft text which should be included and give a reason why.**

*(E.g. The Infrastructure and Built Environment section should include reference to damp proofing homes because...)*

- 2) Please note below any parts of the draft text which are particularly relevant/important and why.**

*(E.g. Emphasising business confidence in the Economy and Society section is important because...)*

- 3) Please note below any parts of the draft text which should be altered/repositioned/removed.**

*(E.g. References to waterways in the Natural Environment section should specifically mention the Water of Leith because...)*

- 4) Please note below any further suggestions you have for improvements to the draft text.**

[Type here...]



## Annex 2 Edinburgh Adapts action plan – proposing actions

The Edinburgh Adapts action plan will be a strategic, city wide action plan focused on increasing climate resilience through partnership working. The Edinburgh Adapts action plan will cover the period 2016 – 2021. It will focus on increasing resilience to the climate risks identified in the [Resilient Edinburgh Adaptation Framework](#) and at the Edinburgh Adapts workshop held in August 2015. A list of key risks and opportunities is provided in Annex 3.

The action plan will include actions that can only be delivered effectively through partnership working. It will not include small scale actions that are the sole responsibility of one organisation, business, community or individual.

Organisations, business and communities across the city are asked to propose actions that they can contribute to the action plan by completing the action proposal form below. In particular we are seeking actions that are being/ could be co-developed and delivered with partners.

**Proposing actions at this stage does not constitute a formal agreement to including actions in the plan or funding the delivery of actions.** The deadline for proposing actions is 13 November 2015. The actions that are proposed will be discussed at sector specific workshops to be held in November 2015.

Proposed actions can include actions that are already underway, those which are confirmed and will start shortly and, those that are planned for the future but have yet to be fully confirmed. Stakeholders also have the opportunity to propose new actions that they would like to work with others to develop.

### Types of actions

The action plan will include actions that can only be delivered effectively through partnership working. It will not include small scale actions that are the sole responsibility of one organisation, business, community or individual.

For example: The development of a small-scale roof garden on a headquarters building is unlikely to be included

However, action to introduce green networks as part of a large scale new housing development is likely to be included.

Three categories of actions can be proposed. Table 1 explains each of the categories and provides example actions.

Table 1: Action categories, descriptions and example actions

Category	Rationale/ description	Example actions
1. Evidence to inform decision making	Actions that enable joint work to improve understanding of current and future climate risks and, identify priorities and inform decision making.	Example actions could include: <ul style="list-style-type: none"> <li>• Sharing assessments of climate risk between different stakeholders, allowing joint risks to be identified and managed effectively.</li> <li>• Identifying shared information gaps and commissioning</li> </ul>



		<p>joint research to inform decisions about how best to increase resilience.</p> <ul style="list-style-type: none"> <li>• Collaborating on research into the potential climate risks to our local environment, communities, businesses and services.</li> </ul>
2. Building capacity to adapt	<p>Building adaptive capacity means improving our ability to increase resilience by developing the knowledge and skills needed to take action.</p> <p>It also includes taking action to include climate resilience in key strategic planning and decision making processes that will influence long term planning and investment decisions.</p>	<p>Example actions could include:</p> <ul style="list-style-type: none"> <li>• Embedding climate resilience within strategic plans and policies.</li> <li>• Developing shared training resources for staff and students.</li> <li>• Engaging with individuals and communities to ensure that people can play an active role in decision making.</li> <li>• Preparing practical and easy-to-use tools and guidance for local event management and businesses.</li> </ul>
3. Taking action on the ground	<p>Taking action on the ground refers to actions that are being implemented to increase the physical resilience of the city.</p>	<p>Example actions could include:</p> <ul style="list-style-type: none"> <li>• New/ improved green networks and infrastructure</li> <li>• Sustainable urban drainage and flood risk management infrastructure</li> <li>• Retrofitting the build environment to increase resilience</li> <li>• Designing new developments that take account of future climate change impacts</li> <li>• Improvements to the resilience of roads, railways, energy supply and/ or communication networks.</li> <li>• Improving the capacity of communities to cope with severe weather events</li> </ul>

For more information, advice or a general discussion on proposing actions please contact James Garry [james.garry@edinburgh.gov.uk](mailto:james.garry@edinburgh.gov.uk) or Fiona MacLeod [fiona.macleod@edinburgh.gov.uk](mailto:fiona.macleod@edinburgh.gov.uk)

## Complete the action proposal form

### Action proposal form

Please send completed action proposals forms to James Garry [james.garry@edinburgh.gov.uk](mailto:james.garry@edinburgh.gov.uk) or Fiona MacLeod [fiona.macleod@edinburgh.gov.uk](mailto:fiona.macleod@edinburgh.gov.uk) by 13<sup>th</sup> November 2015

Please complete the form below to propose actions:

Name: \_\_\_\_\_ Job title/ Role: \_\_\_\_\_

Email address: \_\_\_\_\_ Phone Number: \_\_\_\_\_

Name of organisation/ business/ community: \_\_\_\_\_

### Action category 1: Evidence to inform decision making

*Actions to improve understanding of current and future climate risks, identify priorities and inform decision making.*

Please tell us about any actions that are already being implemented or are planned:

<b>Action</b> <i>Title of the action</i>	<b>Description</b> <i>Describe what is/ will happen</i>	<b>What will be achieved?</b> <i>Aims and objectives</i>	<b>Who is involved?</b> <i>List all of the organisations/ businesses/ communities involved in delivering the action</i>	<b>Start date</b>	<b>End date</b>

Please tell us about any actions under this category that you would be interested in working with others to develop:

<b>Action</b> <i>Title of the action</i>	<b>Description</b> <i>Describe what you would like to see happen?</i>	<b>What will be achieved?</b> <i>Aims and objectives</i>	<b>Who would you like to work with?</b> <i>List the organisations/ businesses/ communities you would like to work with to develop the</i>	<b>Start date</b>	<b>End date</b>



			<i>action</i>		

Action category 2: Building capacity to adapt

*Building adaptive capacity means improving our ability to increase resilience by developing the knowledge and skills needed to take action. It also includes taking action to include climate resilience in key strategic planning and decision making processes that will influence long term planning and investment decisions.*

Please tell us about any actions that are already being implemented or are planned:

<b>Action</b> <i>Title of the action</i>	<b>Description</b> <i>Describe what is/ will happen</i>	<b>What will be achieved?</b> <i>Aims and objectives</i>	<b>Who is involved?</b> <i>List all of the organisations/ businesses/ communities involved in delivering the action</i>	<b>Start date</b>	<b>End date</b>

Please tell us about any actions under this category that you would be interested in working with others to develop:

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Action category 3: Taking action on the ground

*Taking action on the ground refers to actions that are being implemented to increase the physical resilience of the city.*

Please tell us about any actions that are already being implemented or are planned:

<b>Action</b> <i>Title of the action</i>	<b>Description</b> <i>Describe what is/ will happen</i>	<b>What will be achieved?</b> <i>Aims and objectives</i>	<b>Who is involved?</b> <i>List all of the organisations/ businesses/ communities involved in delivering the action</i>	<b>Start date</b>	<b>End date</b>

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Please send completed action proposals forms to James Gary [james.garry@edinburgh.gov.uk](mailto:james.garry@edinburgh.gov.uk) or Fiona MacLeod [fiona.macleod@edinburgh.gov.uk](mailto:fiona.macleod@edinburgh.gov.uk) by 13 November 2015.

## Annex 3: Edinburgh Adapts – list of climate risks and opportunities

The following list of climate risks and opportunities is taken from the [Resilient Edinburgh Climate Change Adaptation Framework](#) and provides an overview of the types of climate risks that are likely to impact Edinburgh. Risks are presented under different sector headings and opportunities are summarised at the end.

### Climate Risks

#### Infrastructure and the Built Environment

Significant risks to infrastructure and the built environment from climate change include:

- Increased energy consumption in summer months due to increased need for air conditioning/cooling in existing buildings
- Increased bioproductivity promoting growth of problem species, pests infestations and vermin
- Damage to property from wetter winters and severe weather events
- Increased dampness and mould in buildings
- Disruption to construction work due to severe weather
- Vulnerability of key heritage and cultural assets
- Increased insurance costs
- Increased incidence of inundation and flood damage
- Damage to sea defences and increased vulnerability to storm surges
- Tourism and recreational demand
- Storm water management and flooding infrastructure
- Urban heat island effect increasing the risk of buildings overheating
- Increased need for air conditioning in summer will push up energy use, affecting bills and demand on electricity infrastructure
- Reduced need for heating during winter
- Disruption to power stations causing energy supply shortages
- Increased chance of drought and water shortages
- Risks to digital infrastructure (e.g. overheating of servers due to high summer temperatures)
- Increased need for housing due to climate refugees
- Failure of essential road infrastructure
- Road deterioration
- Failure of drainage infrastructure
- Disruption to work programmes and operational issues
- Significant increases in maintenance costs and requirements for new infrastructure
- Disruption to public transport, cycling and pedestrian networks due to the increased incidence of localised and widespread flooding
- Increased number of emergency call-outs
- Failure of coastal defences
- Storm surge inundation
- Economic and reputational impacts of major transport disruption to Edinburgh
- Disruption to freight delivery and storage (including increased need for refrigeration in summer)
- Reduced need for gritting and less road damage from freezing weather in winter
- Increased winds will cause disruption to rail services and cause damage to rail infrastructure
- Increased summer temperatures will cause expansion of rail tracks, risking buckling
- Disruption to fuel stock infrastructure/electricity supply for transport

## The Natural Environment

Significant risks to the natural environment arising from Climate Change include:

- Summer drought
- Deterioration in river and wetland environments
- Species and habitat stress
- Introduction of new species, diseases and pests
- Tree damage and changes in woodland ecosystems
- Deterioration of public parks
- Increased soil erosion and land instability
- Erosion of coastal habitats
- Changing breeding patterns

## Economy and Society

Significant risks to the economy and society arising from Climate Change include:

- Disruption to essential community services
- Increased incidence of vector borne diseases
- More heat stroke, dehydration and respiratory problems.
- Increase in pest numbers and distribution, and increased demand for pest control services
- Increased incident of food poisoning
- Reduced water and air quality
- Mould and fungal illnesses and associated respiratory problems
- General increase in public health and safety risks (e.g. sunburn/heat stroke in summer, impact on vulnerable/elderly people, impact on health services infrastructure and buildings)
- Changes and increases in demand for emergency and rescue services
- Increase in number of incidents requiring a multi-agency emergency planning approach
- Changes in demand for goods and services
- Heat stress impact on service provision
- Closure of water reliant recreational activities
- Lost work days due to severe weather
- Disruption to transport and supplies
- Disruption to energy supplies/increasing energy costs
- Increased repair and maintenance costs
- Increased insurance costs and withdrawal of coverage for most at risk areas/events
- Loss of land and property values
- Disruption and/or cancellation of summer festivals, winter festivals and Hogmanay celebrations
- Disruption to food supplies, both local and international
- Disruption to tourism activities due to severe weather, leading to reputational damage
- Disruption to the city's critical infrastructure
- Increased pressure on essential public services
- Increased fluctuations in weather patterns making forecasting and planning more difficult

## Opportunities

A changing climate and the need to adapt to also presents a number of economic opportunities, for example:

- Financial and business services where ethical and green investment is expanding
- Life Sciences where developing responses to climate change related threats to human health offers the potential for new business
- Tourism where hotter drier local summers will be more attractive to visitors and more outdoor events are possible
- Universities where adaptation related research work may be a growth area
- Edinburgh Centre for Carbon Innovation (ECCI) where leaders in the low carbon sector academics, government, other public sector organisations, networks for business and finance can work together to help find solutions to the impacts of climate change. ECCI also jointly manages ClimateXClimate, which is Scotland's centre for expertise on climate change
- Opportunities for developing re-localised zero carbon economy
- Longer, warmer growing season may assist with an expansion and diversification of local food production