Introduction

The City Packs use the latest UK Climate Projections (UKCP) data to provide high-level, non-technical summaries of a city's future climate. Graphics and tables are used to communicate scientific research in an accessible way, providing robust climate information to help city decision makers plan for the future, enabling cities to become more resilient to climate change. The lifecycle of the City Pack project is illustrated in this **infographic**.

The upscaling challenge and vision

The upscaling vision set out the goal of increasing the provision of the City Packs, and the uptake and use of the service.

- Meeting this challenge involves expansion to a wider group of cities and local authorities, horizontal scaling, and future expansion to all cities and local authorities.

- This future expansion would be enabled by functional scaling, technical changes to the information provided and its production – and corresponding additions to the developer team.

- Ensuring the equitable use of the city packs, and the resulting downstream activities is a potential barrier. Vertical scaling, or institutionalisation, is required to increase resource and incentives for the user groups to take up the service.

Horizontal and functional upscaling

LOCATIONS
- Bristol
- Belfast
- London City
- Kirklees
- Leeds
- Glasgow
- Exeter

The first City Pack was co-developed by the Met Office and Bristol City Council. Following the success of the Bristol City Pack, the service 'template' was upscaled for a further six cities. Climate projection data and other 'tailored' elements were updated for each city. However, service content and delivery was not tailored to meet specific user requirements of each city.
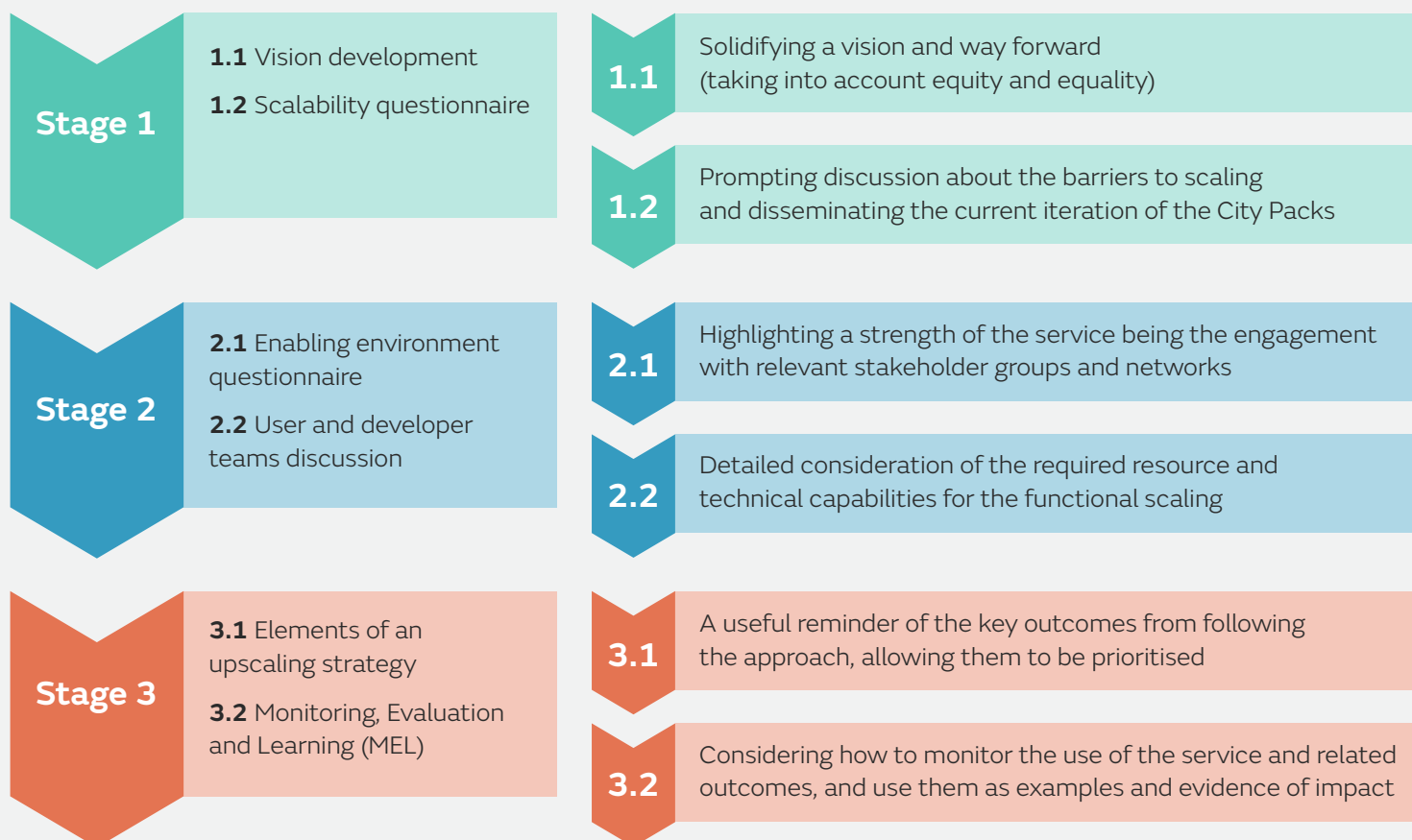
LOCATIONS

All local authorities

The popularity of the City Packs has led to them being upscaled to a further 21 cities across the UK. An additional 'local information' page was also added as an optional bespoke element, provided by city stakeholders. Any further upscaling was limited by the capacity and resource of the developer team.

Equivalent information to the City Packs will be provided to all local authorities, realising the full upscaling vision. This involves a wider developer team to overcome technical and resource challenges, as well as structured stakeholder engagement and dissemination.

Upscaling challenges and identified solutions

Challenges	Solutions
The upscaling process made us consider the ethics of the choices we made for the City Packs; were we targeting this work at the councils that need it most? And how could the City Packs have the greatest impact for the broadest range of users?	We recognised that the biggest impact of the City Packs could come from serving the councils with less resource available to otherwise access climate information, to provide them with a base to start developing their climate resilience plans.
To achieve our upscaling vision requires significant effort in preparing an enabling environment for the project to grow. How could we make sure that the City Packs reach the stakeholders we were targeting? And how could we make sure that the information in the City Packs will be acted on?	Key stakeholder networks were used to increase visibility and understanding of the City Packs, such as the Core Cities Network. Case studies were developed to give examples of how cities had used the City Pack information. User feedback was gathered on preferences for materials to support decision-making.
Our upscaling vision will require technical abilities to handle more complicated data processing tasks and also an online delivery platform, capabilities which we did not have in our team.	The process helped us identify this through discussions on skills, resourcing and gaps. The ongoing project to provide the information to all local authorities in the UK is being performed by a developer team whose composition addresses this.

The relevance of the upscaling approach and recommendations for applying it elsewhere

Stage 1
- **1.1** Vision development
- **1.2** Scalability questionnaire

1.1 Solidifying a vision and way forward (taking into account equity and equality)

1.2 Prompting discussion about the barriers to scaling and disseminating the current iteration of the City Packs

Stage 2
- **2.1** Enabling environment questionnaire
- **2.2** User and developer teams discussion

2.1 Highlighting a strength of the service being the engagement with relevant stakeholder groups and networks

2.2 Detailed consideration of the required resource and technical capabilities for the functional scaling

Stage 3
- **3.1** Elements of an upscaling strategy
- **3.2** Monitoring, Evaluation and Learning (MEL)

3.1 A useful reminder of the key outcomes from following the approach, allowing them to be prioritised

3.2 Considering how to monitor the use of the service and related outcomes, and use them as examples and evidence of impact

> **Similar projects thinking about upscaling would benefit from considering upscaling requirements as early in the project as possible. In particular, they may wish to consider the target audience for the service and how upscaling can allow the service to be provided more equitably. It is also vital to include sufficient time for user engagement and to build in plans for monitoring and evaluation of the service from the beginning.**