West Midlands Regional Adaptation Network (RAN)

Tuesday 24th June 2025

West Midlands Combined Authority

Greener Together

Welcome and Introduction

Purpose of the Regional Adaptation Network (RAN)

To connect and build the skills and knowledge of people who have a role in preparing the region for climate change. The Network is part of the new, wider West Midlands Adapt project.

Mentimeter poll

- What sector do you represent?
- How familiar are you with climate adaptation?

Mentimeter QR code
Join at menti.com

West Midlands Combined Authority | Greener Together


UNIVERSITY OF BIRMINGHAM
West Midlands Combined Authority
Midlands Connect
Transport | Investment | Growth
Environment Agency
GeoEnergy
Coventry City Council
UK Health Security Agency
Coventry University
midland heart
Association of Directors of Public Health
COMMUNITY RESILIENCE TEAM
West Midlands Fire Service
British RedCross
Transport for West Midlands
NHS
The Royal Wolverhampton NHS Trust
CITY OF WOLVERHAMPTON COUNCIL
CITIZEN
Department for Transport
SEVERN TRENT WATER
NATURAL ENGLAND
manor farm
NHS England Midlands
Dudley Metropolitan Borough Council
Met Office
KIER
Walsall Council
RICS
West Midlands Police
HEALTHY SANDWELL
We find the support you need
Birmingham and Solihull Integrated Care System
Caring about healthier lives
UNIVERSITY COLLEGE BIRMINGHAM
IN PARTNERSHIP WITH THE UNIVERSITY OF WARWICK
WEST MIDLANDS resilience forum
sustainability west midlands
NetworkRail
Birmingham City Council
Sandwell Metropolitan Borough Council
ea Education Authority
gia CHARTERED SURVEYORS
nationalgrid Electricity Distribution
ENERGY CAPITAL
Canal & River Trust
Making life better by water
whg

Agenda

Time	Item	Speaker
13:00-13:10	**Welcome and high-level introduction to WM-ADAPT and the RAN** • Soft launch of Climate Adaptation Literacy	Beth Haskins & James Hodgson
13:10-13:40	**Member presentation on impacts and adaptations:** • Birmingham City Council – application of CRVA data • Environment Agency – intro to Nafra2 Q&A	Simon Needle Jon Saner
13:40 – 14:00	**Mentimetre – accessing data** **Climate Risk & Vulnerability Assessments (CRVAs) to date and data enhancements** 3-minute quick fire intro to the four areas – one slide per area. Q&A	Sarah Greenham
14:00 – 14:35	**Breakout discussions:** • Urban heat island data • Surface water flood risk data • Health impacts data • Economic impacts data	Sarah Greenham Xilin Xia Jenny Stocker James Hall James Hodgson
14:35 – 14:45	**Quick fire feedback to the room**	Facilitators
14:45 -15:00	**AOB and wrap up** • Terms of Reference review for next time • Ask to circulate invitation wider • Forward Plan – what's coming up	Beth Haskins & James Hodgson

Climate Adaptation Literacy

- Online, self-led e-learning course
- CPD accredited
- Receive a CPD certified and digital badge upon assessment
- Est. time – 30-45mins per module
- Complete at your own pace
- Three modules:
    1. Climate change in the UK and why adaptation matters
    2. Zooming in – Climate impacts in the West Midlands
    3. How can we adapt to climate change?

Available here: [West Midlands Climate Adaptation Literacy Training]

WM Regional Adaptation Network

Birmingham's Climate Risk and Vulnerability Assessment Mapping – Concept through to Policy

Simon Needle
Parks Services Manager

Birmingham's Context

The Challenges

- Population at 1.1million and rising
- One of the youngest populations in Europe
- Significant number of wards in top 10 percentile IMD
- High levels YLL in certain quarters
- Air Pollution
- UHI
- Pluvial and Fluvial flooding
- Need for 89,000 additional homes by 2031; currently space identified for 51,000

COVID19 pandemic has brought to the fore the inequality of accessible green space. Minority ethnic communities more impacted by pandemic

Higher levels of minority ethnic communities in areas of low GI, poorer air quality and high UHI.

Liaison with other Departments such as Public Health are critical to understanding impacts and benefits.

Birmingham - total land area 103.5 Square miles

- 24 Square miles of Green Infrastructure
- 13.5 Square miles of Public Open Space
- 9.2 Square miles of designated Nature Conservation sites
- 5.4 Square miles of designated woodlands (in Parks and open spaces).
- 250 miles of rivers, brooks and streams
- 35 miles of canals

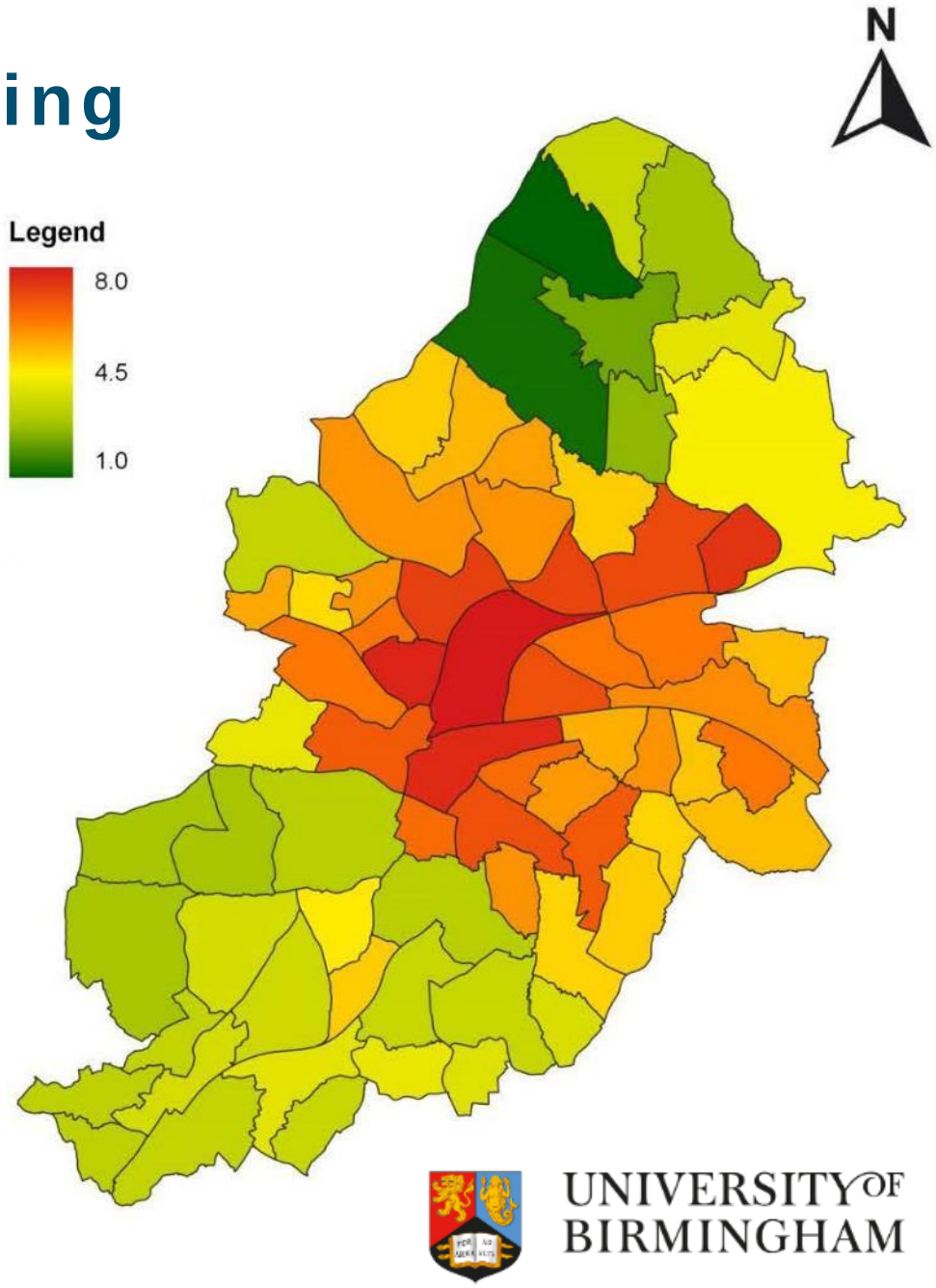
Future Parks Accelerator
Environmental Justice Mapping

Environment justice assessment tool

Evidence-based approach for regeneration and levelling up.

Assessed indices of multiple deprivation;

- Access to greenspace
- Tree canopy cover
- Flood Risk (fluvial and pluvial)
- Urban heat island
- Health inequality
- Air pollution (NO_2 & $PM_{2.5}$)

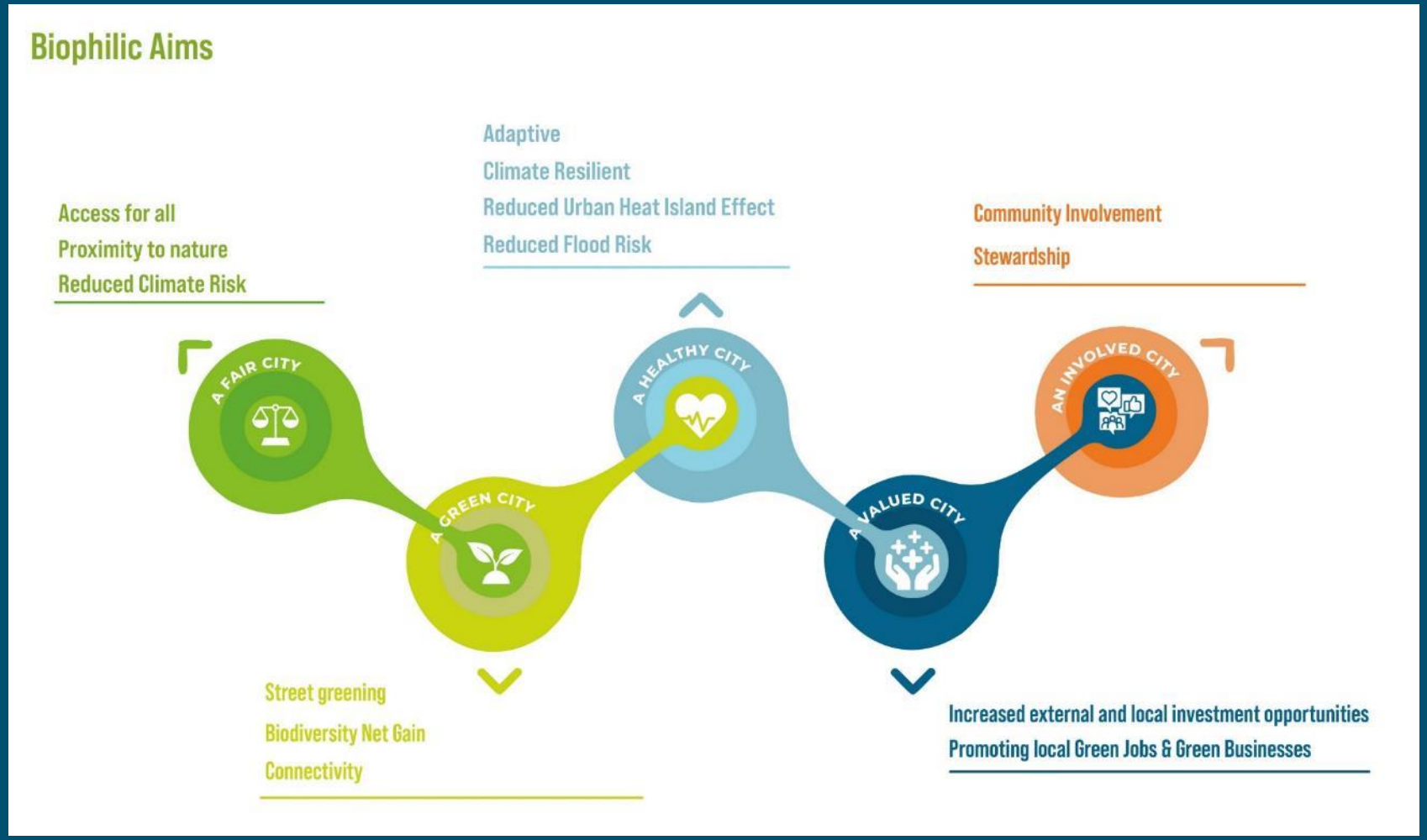


UNIVERSITY OF BIRMINGHAM

City of Nature biophilic aims

Guiding principles supporting a “Future Parks Standard”
And

BIRMINGHAM’S
BOLDER BIOPHILIC
GREEN PROSPECTUS



Biophilic Masterplan Approach to East Birmingham

114 Emerging Biophilic Opportunities Across East Birmingham

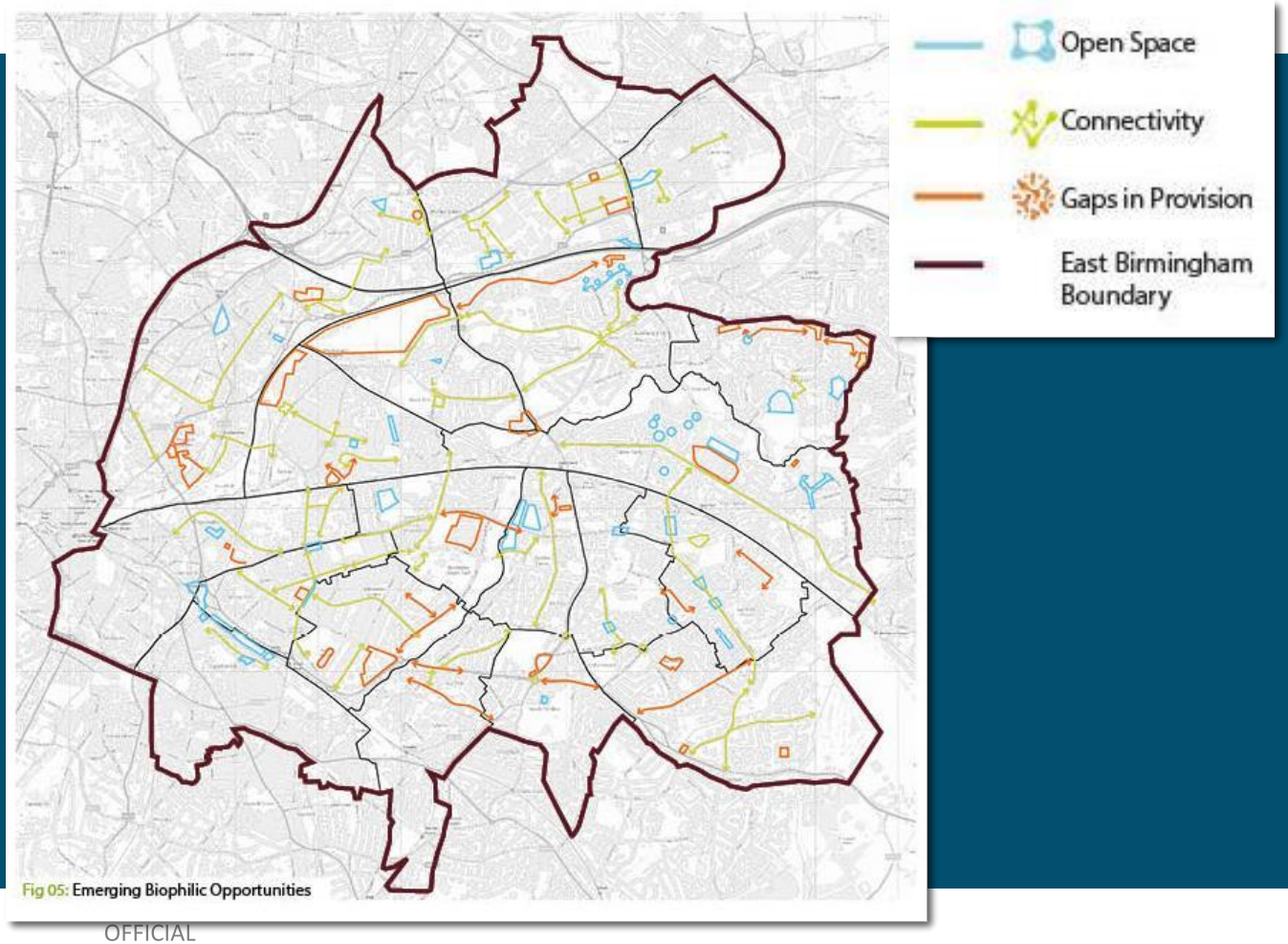


Fig 05: Emerging Biophilic Opportunities

CRVA mapping - First iteration – evolved from Environmental Justice Map

Background:

On 11 June 2019 the council declared a climate emergency. In this declaration, the council recognised that the impacts of climate change, such as increased extreme weather events such as flooding, droughts and heatwaves will affect Birmingham residents. With this, the council is also committed to preparing Birmingham for the effects of climate change to make sure our city and residents are resilient to future climate risks. This resulted in Birmingham's Environmental Justice Map, which is helping with the planning and delivery of the City of Nature Plan, reducing the risks of climate change for the most vulnerable and working towards building a more resilient and greener city.

To help the council develop the city while also adapting to climate change, a climate risk and vulnerability assessment (CRVA) is needed to help identify where the needs of Birmingham are greatest. The council has developed a CRVA map, which builds on the success of the Environmental Justice Map.

Methodology:

The CRVA map scores areas of Birmingham based on compiling the presence and extent of 11 different factors that may influence the effect of climate change. These factors are:

- Concentration of nitrogen dioxide (an air pollutant)
- Concentration of fine particulate matter (an air pollutant)
- Fluvial (river) flood risk
- Pluvial (surface) flood risk
- Surface temperature
- Local climate zone classification
- Deficit in open green space
- Deficit in other green space
- Deficit in tree canopy cover
- Excess years life lost
- Indices of Multiple Deprivation

Most of these datasets are open source and can be viewed using geographic information system (GIS) mapping software, such as ArcMap or QGIS.

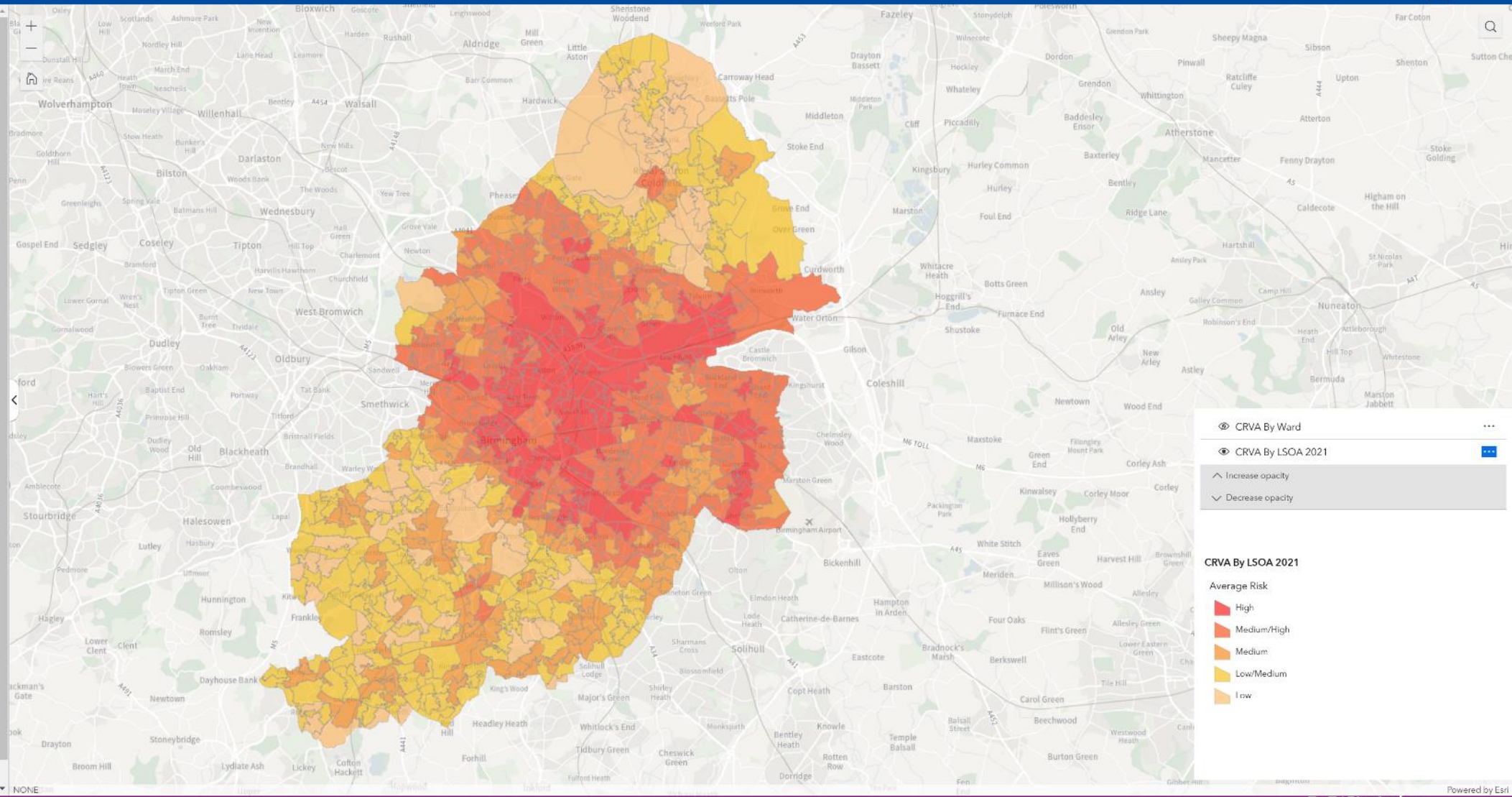
To create the CRVA map, the map of Birmingham was divided into a 100m^2 grid and a score from 0 to 1 was generated per grid square for each factor. The higher the score in a layer, the more at risk or vulnerable that area is to the factor. The scores for all the layers were then summed to create the final CRVA score for the grid across Birmingham, where the higher the score, the more at risk and vulnerable that area is to the compound effects of climate change, now and in future.

For the list of data sources and a more in-depth description of the methodology see here

How is the risk defined?

This map defines climate risk from low to high in five descriptive categories, where the higher the combined CRVA score, the higher its risk category. It is important to note that the risk categories are only relative to the score within Birmingham. This means that an area with a high risk score is only what is understood to be high within the city – there could be other parts of the UK with a higher risk, as the values of some of the factors could be greater than the maximum value recorded for Birmingham. The same applies for low risk – there could be other parts of the UK at a lower risk than the lowest scores in Birmingham. It is also important to note that a high risk classification does not necessarily mean that its score is high for every factor. Some factors may score higher in some places than others, and this will depend on the area.

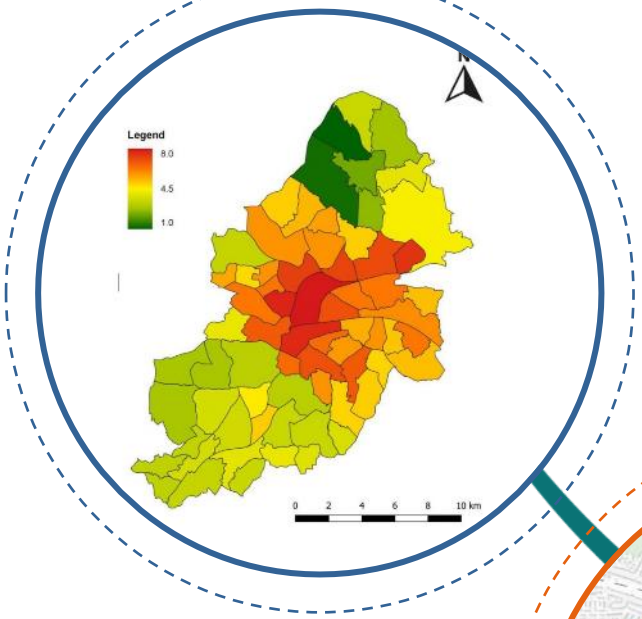
Contact Us



BE BOLD BE BIRMINGHAM

Birmingham City Council

Biophilic Masterplan Approach

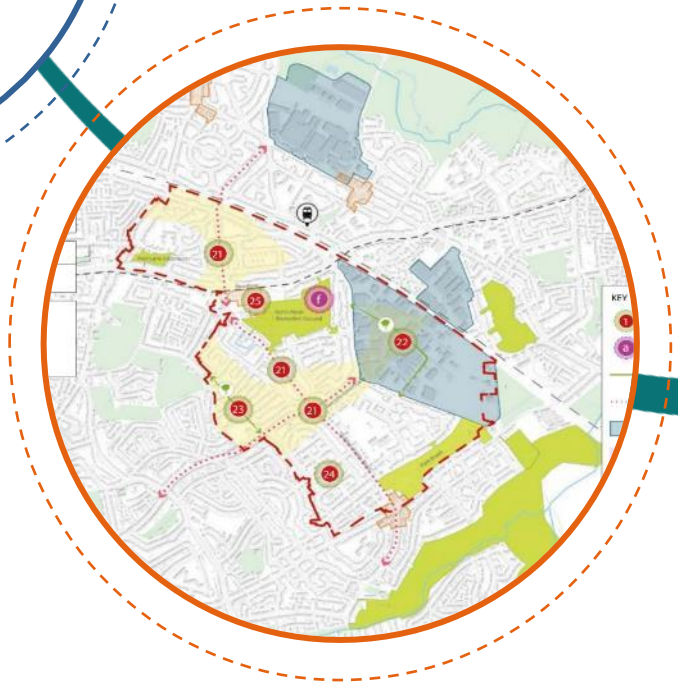


Climate Risk & Vulnerability map

- Identifies areas most at risk and so most in need of greenspace
- From a climate resilience, environmental quality and access perspective

Baseline analysis

- What we have
- What we need
- What you can connect to eg. (Nature recovery Network)



Biophilic Masterplan

- Connectivity; movement, green, blue and wildlife
- Open space; destinations, co-location
- Gaps in provision; equitable of access, greenspace within 300m

Everyday access to nature benefits

- Mental well-being and physical health
- Climate resilience
- Community
- Biodiversity
- Economic prosperity

Biophilic Design

Analysis for Interventions

Ward Example; Pype Hayes

East Birmingham CRVA Map

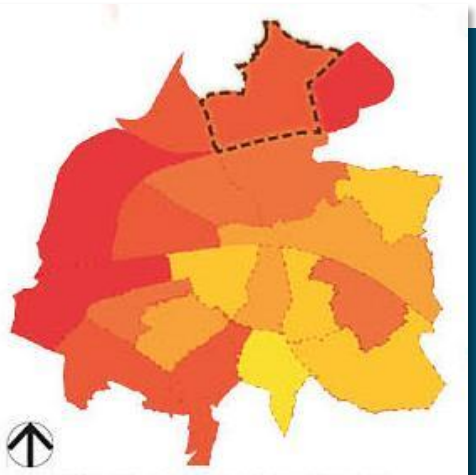


Fig 01: Ward Location Plan and CRVA Scoring

Nature Recovery Network

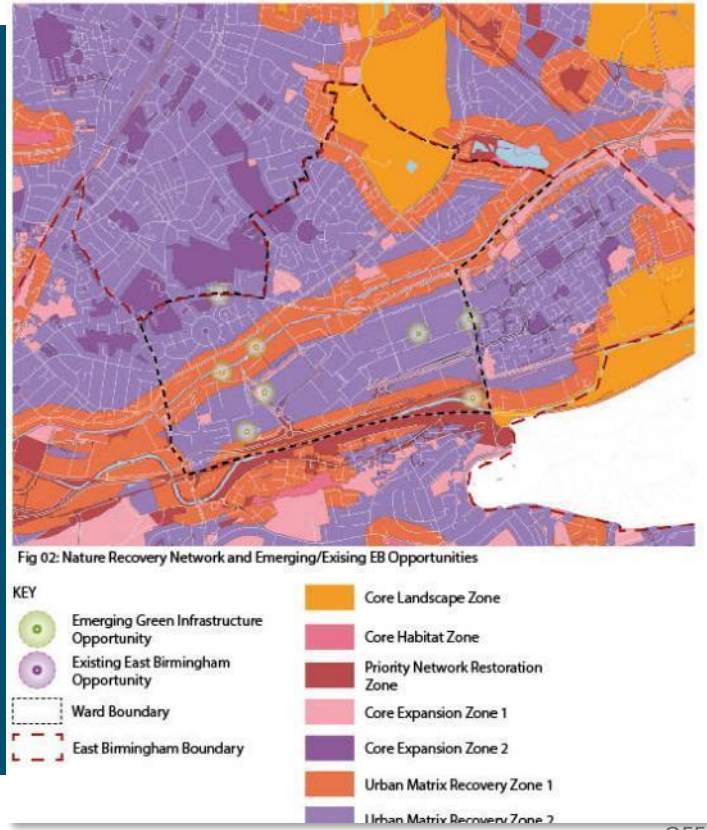


Fig 02: Nature Recovery Network and Emerging/Exising EB Opportunities

Ward Analysis/ Opportunities Plan

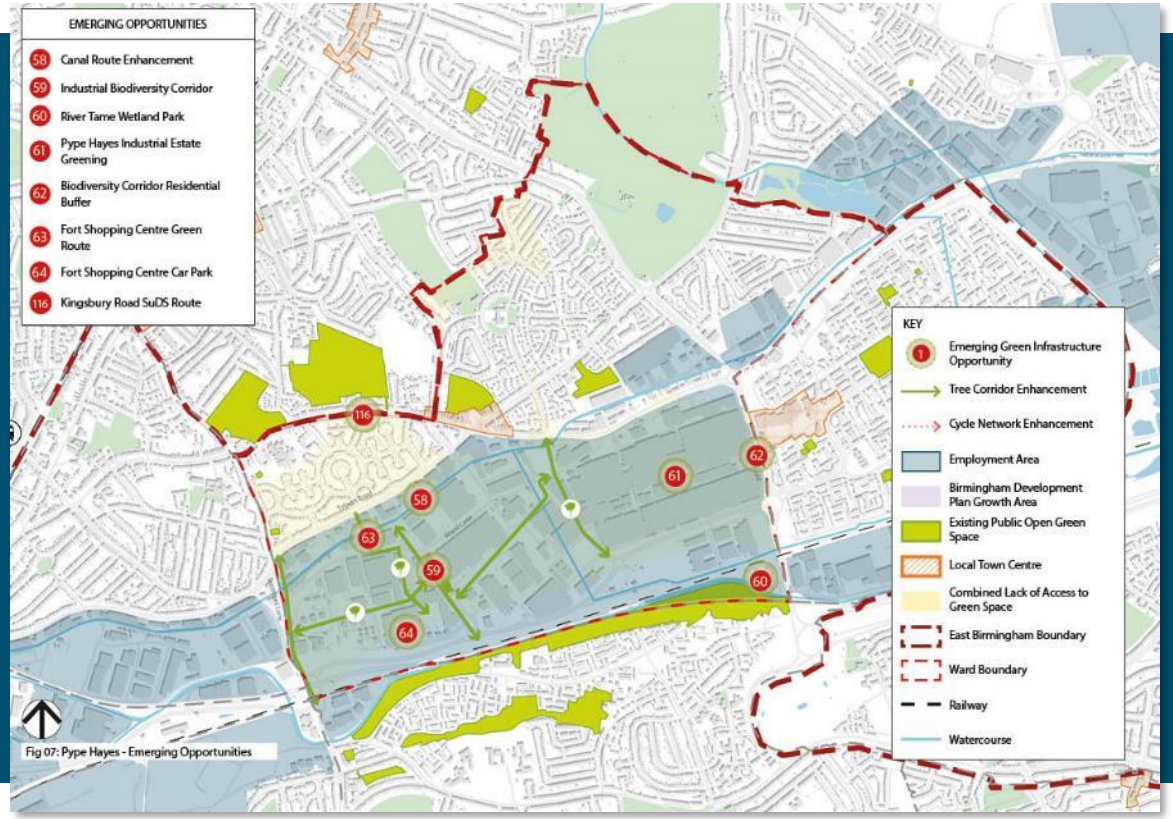
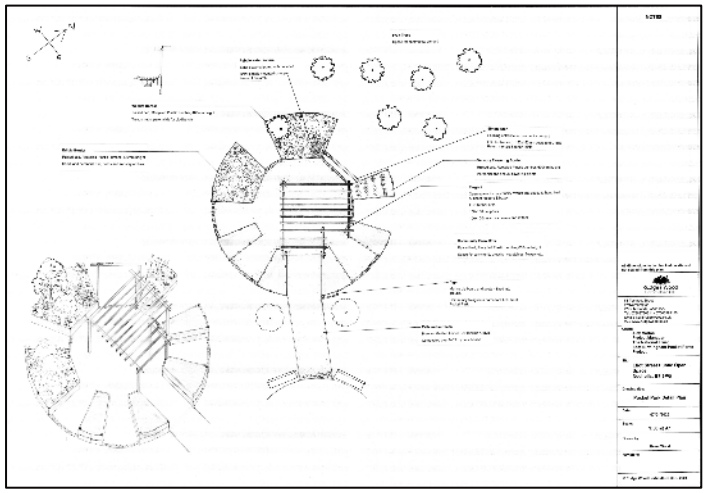


Fig 07: Pype Hayes - Emerging Opportunities

National Trust/ BCC Pocket Parks



Current CRVA mapping - revised functionality to support Planning Policy

Birmingham residents. With this, the council is also committed to preparing Birmingham for the effects of climate change to make sure our city and residents are resilient to future climate risks. This resulted in Birmingham's Environmental Justice Map, which is helping with the planning and delivery of the City of Nature Plan, reducing the risks of climate change for the most vulnerable and working towards building a more resilient and greener city.

To help the council develop the city while also adapting to climate change, a climate risk and vulnerability assessment (CRVA) is needed to help identify where the needs of Birmingham are greatest. The council has developed a CRVA map, which builds on the success of the Environmental Justice Map.

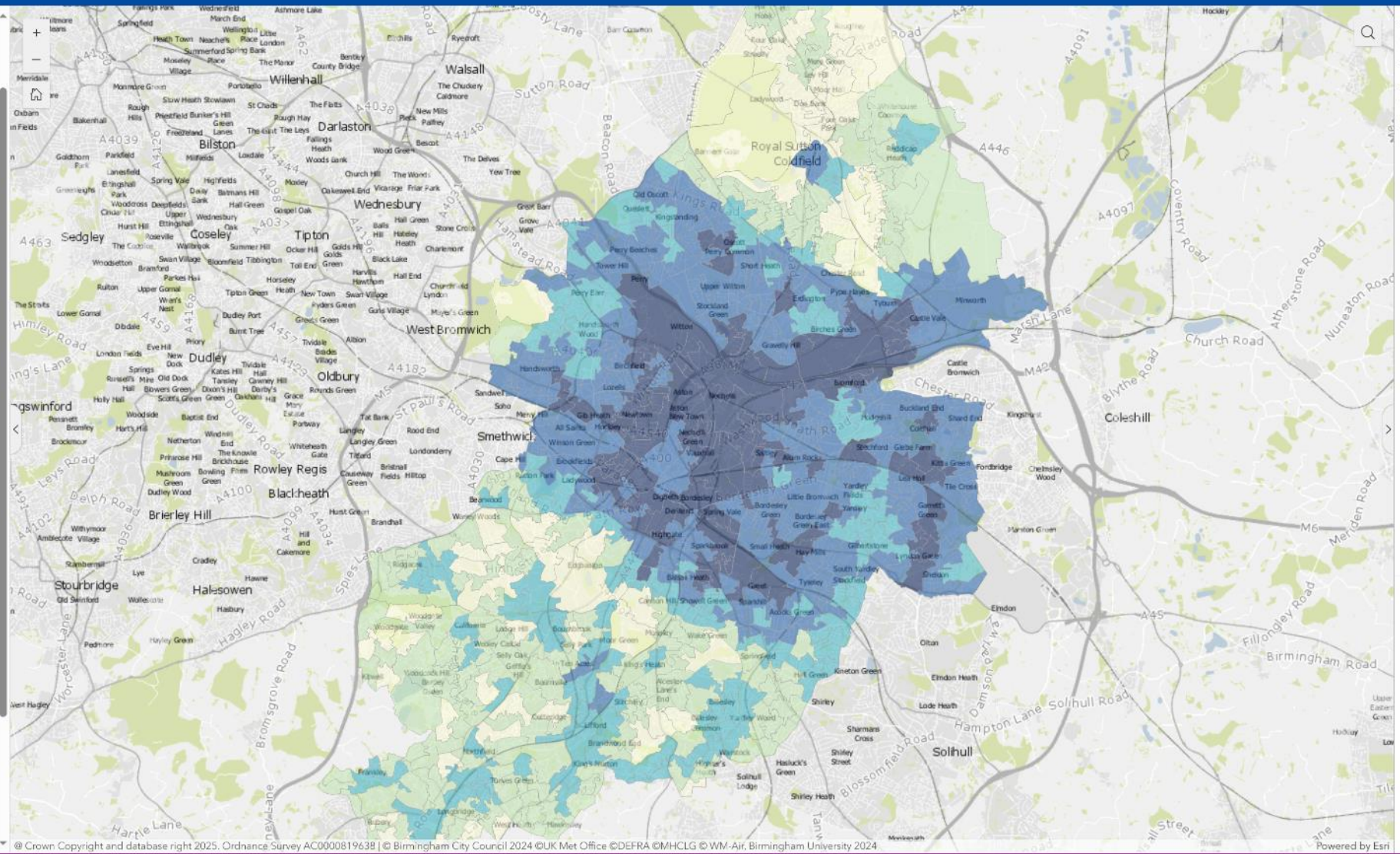
Methodology:
The CRVA map scores areas of Birmingham based on compiling the presence and extent of 11 different factors that may influence the effect of climate change. These factors are:

- Concentration of nitrogen dioxide (an air pollutant)
- Concentration of fine particulate matter (an air pollutant)
- Fluvial (river) flood risk
- Pluvial (surface) flood risk
- Surface temperature
- Local climate zone classification
- Deficit in open green space
- Deficit in other green space
- Deficit in tree canopy cover
- Excess years life lost
- Indices of Multiple Deprivation

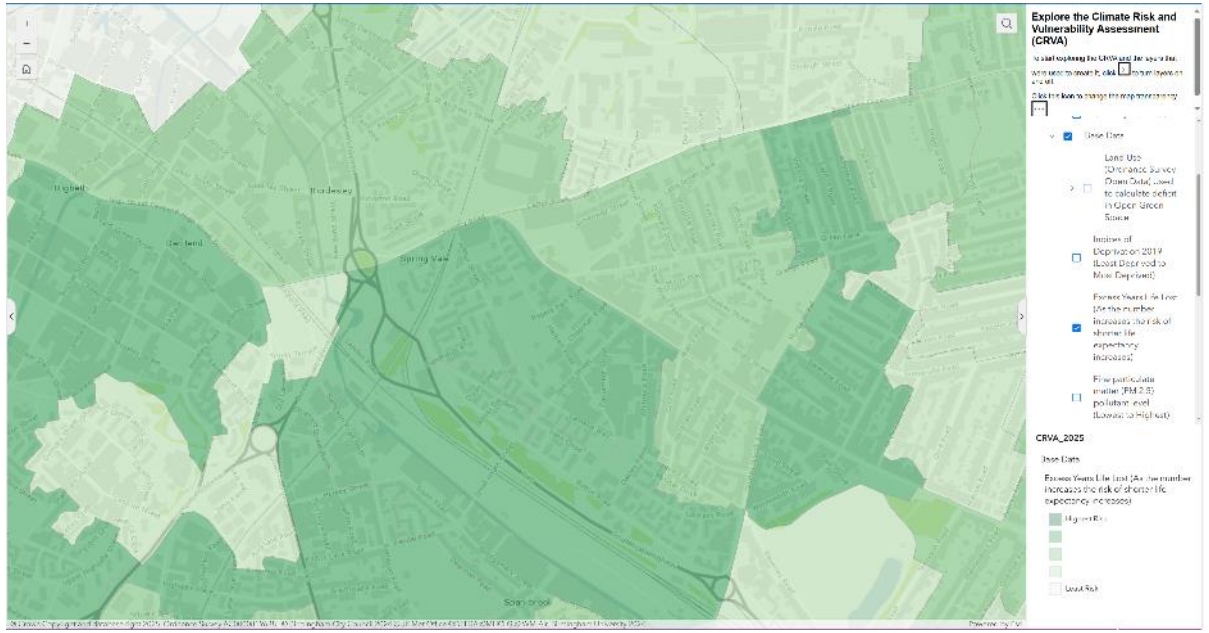
Most of these datasets are open source and can be viewed using geographic information system (GIS) mapping software, such as ArcMap or QGIS.
To create the CRVA map, the map of Birmingham was divided into a 100m^2 grid and a score from 0 to 1 was generated per grid square for each factor. The higher the score in a layer, the more at risk or vulnerable that area is to the factor. The scores for all the layers were then summed to create the final CRVA score for the grid across Birmingham, where the higher the score, the more at risk and vulnerable that area is to the compound effects of climate change, now and in future.

For the list of data sources and a more in-depth description of the methodology see here

How is the risk defined?
This map defines climate risk from low to high in five descriptive categories, where the higher the combined CRVA score, the higher its risk category. It is important to note that the risk categories are only relative to the score within Birmingham. This means that an area with a high risk score is only what is understood to be high within the city – there could be other parts of the UK with a higher risk, as the values of some of the factors could be greater than the maximum



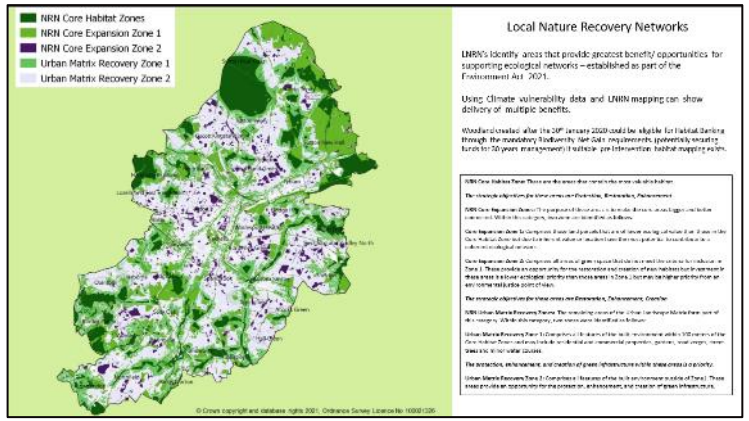

Explore the Climate Risk and Vulnerability Assessment (CRVA)
CRVA_2025
Base Data

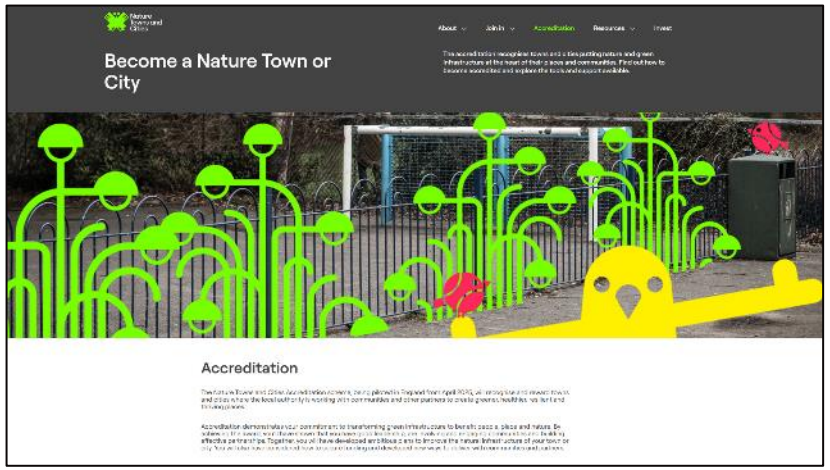

Explore the Climate Risk and Vulnerability Assessment (CRVA)
CRVA_2025
Base Data


Explore the Climate Risk and Vulnerability Assessment (CRVA)
CRVA_2025
Base Data


Explore the Climate Risk and Vulnerability Assessment (CRVA)
CRVA_2025
Base Data

Policy influence and evidence base





DESIGN PRINCIPLE 8

Tree planting in new development

BDP Policies: PG3, TP1, TP7, TP8.
DM DPD Policies: DM4.

Landscape designs shall include the planting of new trees where there is appropriate space; soil availability; and climate to enable them to grow and mature. Where existing trees have been removed from the site, new provision must appropriately compensate for this loss and seek to deliver wider gains where there is scope to do so.

Uses that currently contribute a low level of canopy coverage to the city (as detailed at City Note GI-15) should seek to introduce new tree planting above the baseline % coverage.

Designers must have a clear understanding of the existing and proposed constraints of a site; and design tree planting layouts and species specifications that respond to these.

This process should consider:

- Soil characteristics.
- Root available soil volume.
- Above and below ground constraints.
- Tree pit dimensions and appropriate surfacing.
- Ultimate height and spread.
- Wildlife value.
- Ornamental qualities.
- Tolerance to exposure and climatic extremes.
- Resistance to pests and diseases.
- Nursery availability.
- Reference to the local tree stock composition.
- Planting/supports and guards.
- Aftercare and maintenance.

Further guidance on these elements is presented in City Notes GI-16 to GI-19 within the Landscape and GI Manual.

CITY NOTE GI-17 - Effectively responding to on-site constraints

- **Highways | Climate | Long term benefits - long-living trees | Groupings**

CITY NOTE GI-18 - Root Available Soil Volume (RASV)

Target, minimum RASV should be provided as follows:

- **30m³ for individually planted large-medium trees.**
- **20m³ per large-medium tree when planted as a group of two or more with shared RASV.**
- **10m³ for individually planted small trees of approximately 6m height and 3m diameter branch spread after 25 years.**
- **5m³ per small tree when planted as a group of two or more with shared RASV.**

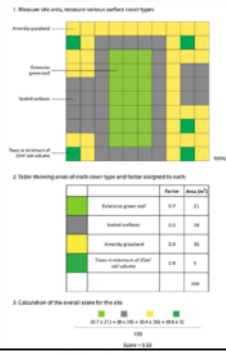
CITY NOTE GI-19 - Tree pit openings

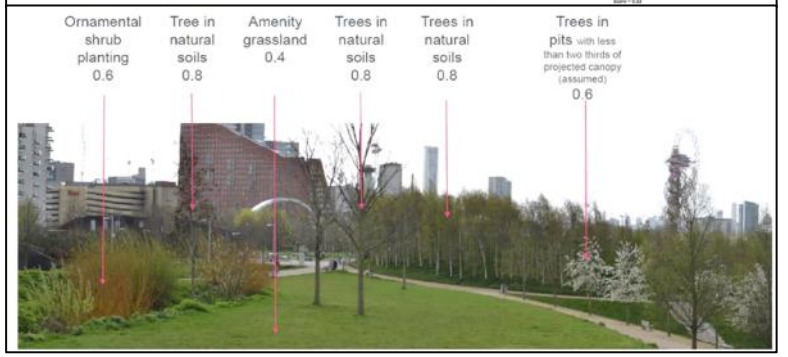
What is the Urban Greening Factor and how does it work?

The "Green Space Factor" (GSF) is a planning policy tool that originated in Berlin and has been adopted and adapted in a number of other cities in Europe and North America to encourage urban greening. GSF schemes work by assigning a factor of between 0 and 1 for various surface cover types, with sealed surfaces given 0 and the most natural cover, 1.

To calculate a UGF for a site, the factor for a particular surface cover is multiplied by its area.
This is repeated for each surface cover type.
The multiplied sums are added together and then divided by the overall site area to give an overall GSF score for a site of between 0 and 1.

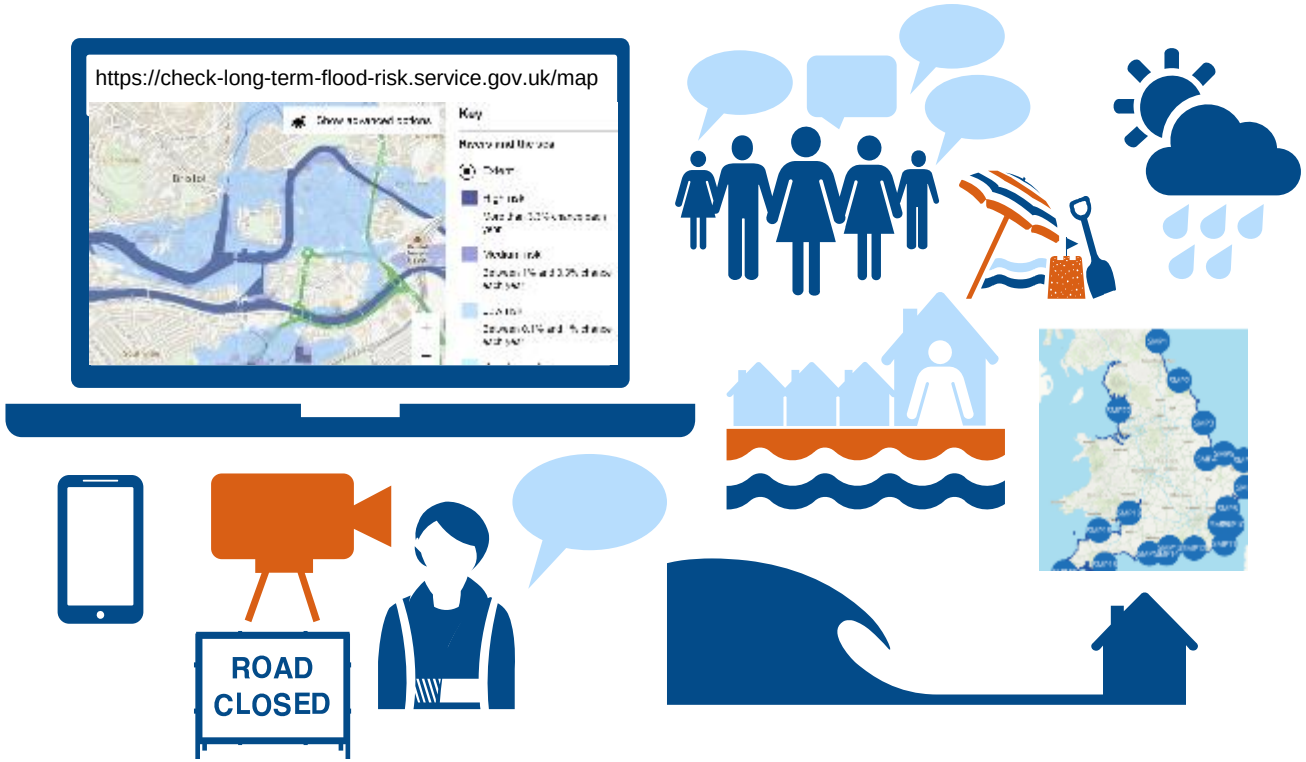
A planning authority can set a minimum target (typically 0.3, although this varies according to the type of development and class of land use). This can provide certainty to developers as to what is expected from new developments in terms of urban greening.
It can also identify planning proposals with insufficient quantity and functionality of greening in order to encourage improvements to a proposal. It can also be useful in determining the scale and benefit of subsequent improvements to plans.





Our Future City Plan – Central Birmingham 2040

Improving how we map and communicate flood and coastal erosion risk information



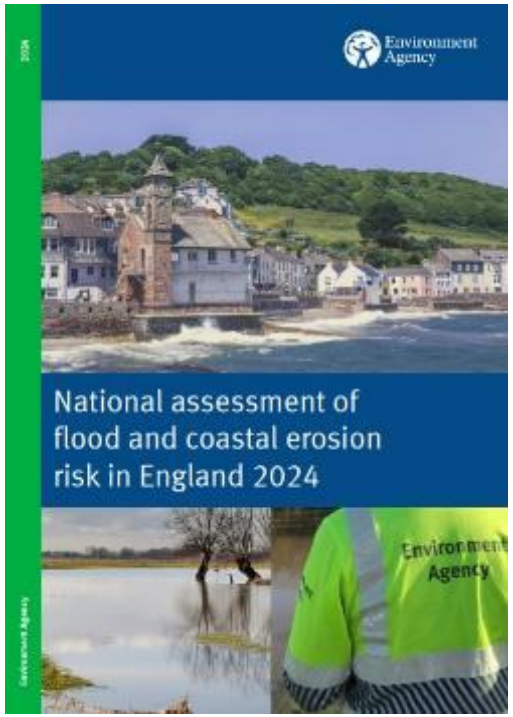
WMCA RAN

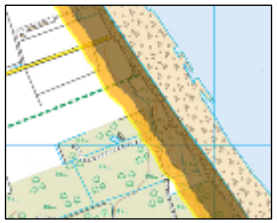
June 2025

Jon Saner – West Midlands Partnerships & Strategic Overview

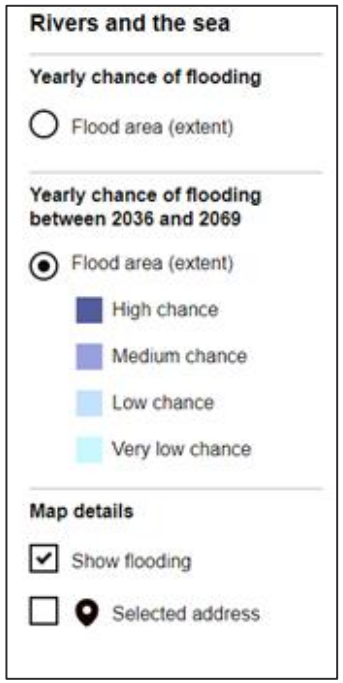
Environment Agency

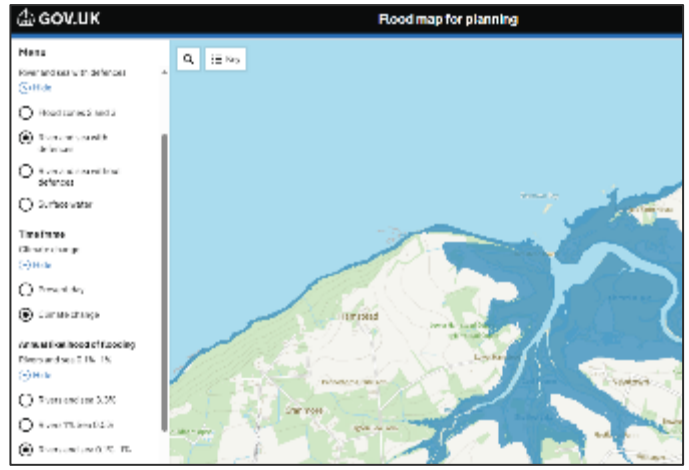
How are we making the new information available





Updated National Coastal Erosion Risk Map (NCERM)





We published a report explaining how flood and coastal erosion risk is changing across England and why.

17 December 2024

We published the data on GOV.UK and update our digital services - 'Check Your Long-Term Flood Risk' and 'Check coastal erosion risk for an area in England'.

28 January 2025

We published updated Flood Zones and add new data to 'Flood Map for Planning'.

25 March 2025

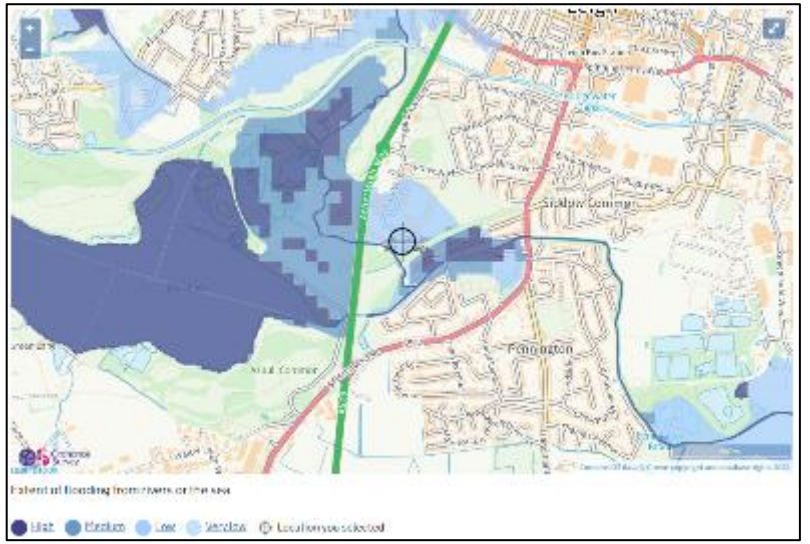
New national flood risk assessment (NaFRA2)

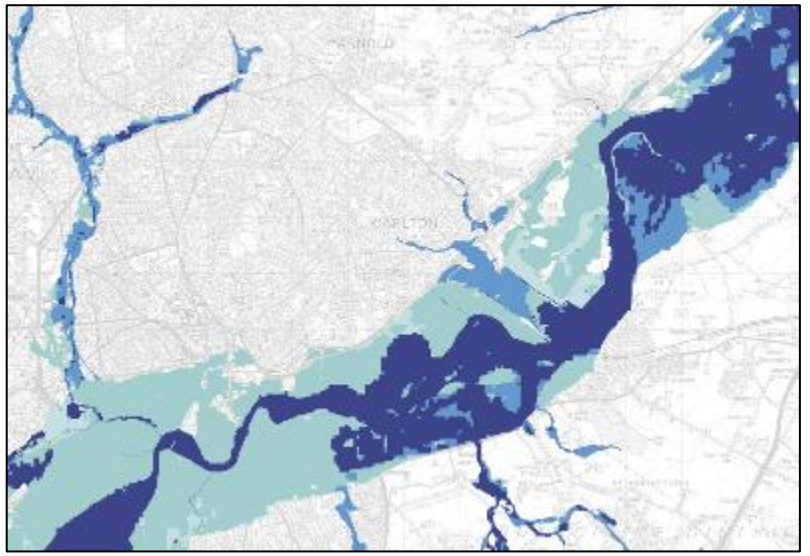
Previous NaFRA:

- No estimates of future flood risk taking into account climate change
- Difficult to update – backlog of local updates
- Limited precision and detail
- Inconsistency in national vs local modelling

New NaFRA2:

- Updates all our national flood risk information
- Better and clearer information to help people understand flood risk and take action to build resilience
- Greater consistency
- Greater accuracy and precision
- Greater range of information
- Greater flexibility and efficiency - enabling regular updates
- An indication of current and future flood risk to guide investment and development planning





Better methods and input data allow us to produce our data at a much higher resolution

How the data is different

Environment Agency

Headlines: All sources of flooding and coastal erosion (England)

Present day risk

6.3 million properties

are in areas at risk of flooding from at least one of the principal sources: rivers, the sea and surface water (5.5m previously).

3,500 properties

are in areas at risk of coastal erosion over the period to 2055 (2,000 previously).

With climate change

8 million properties

could be in areas at risk of flooding from at least one of the principal sources: rivers, the sea and surface water by mid century.

19,700 properties

could be in areas at risk of coastal erosion by the end of the century.

Environment Agency

Flood risk from rivers and sea

Present day risk

2.4 million

properties in areas at risk of flooding from rivers and the sea – 2.6m previously.

367,900

properties in areas at **high** risk of flooding from rivers and the sea - 88% increase.

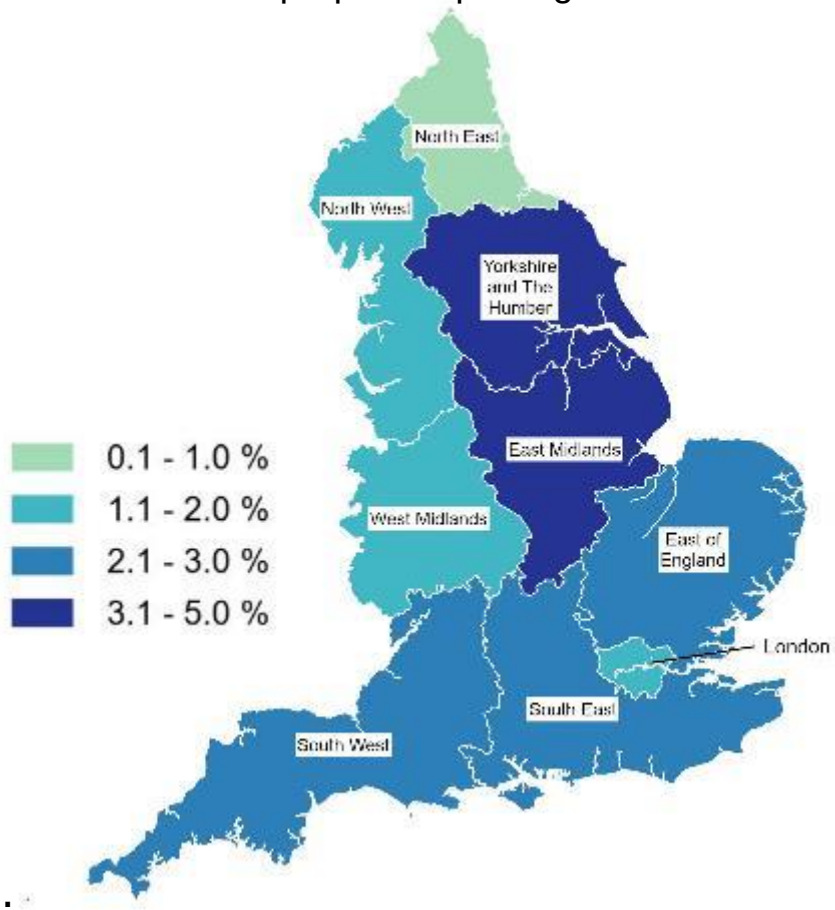
52%

of the total number of properties in areas at **high** or **medium** flood risk are in the East Midlands, Yorkshire and the Humber, and South East.

1 in 10

of properties in areas at **high** and **medium** flood risk are in London.

Properties in areas at high/medium risk of flooding from rivers and sea, as a % of total number of properties per region



Environment Agency

Flood risk from surface water

Present day risk

4.6 million

properties in areas at risk of flooding from surface water – 43% increase.

1.1 million

properties in areas at **high** risk of flooding from surface water - three fold increase.

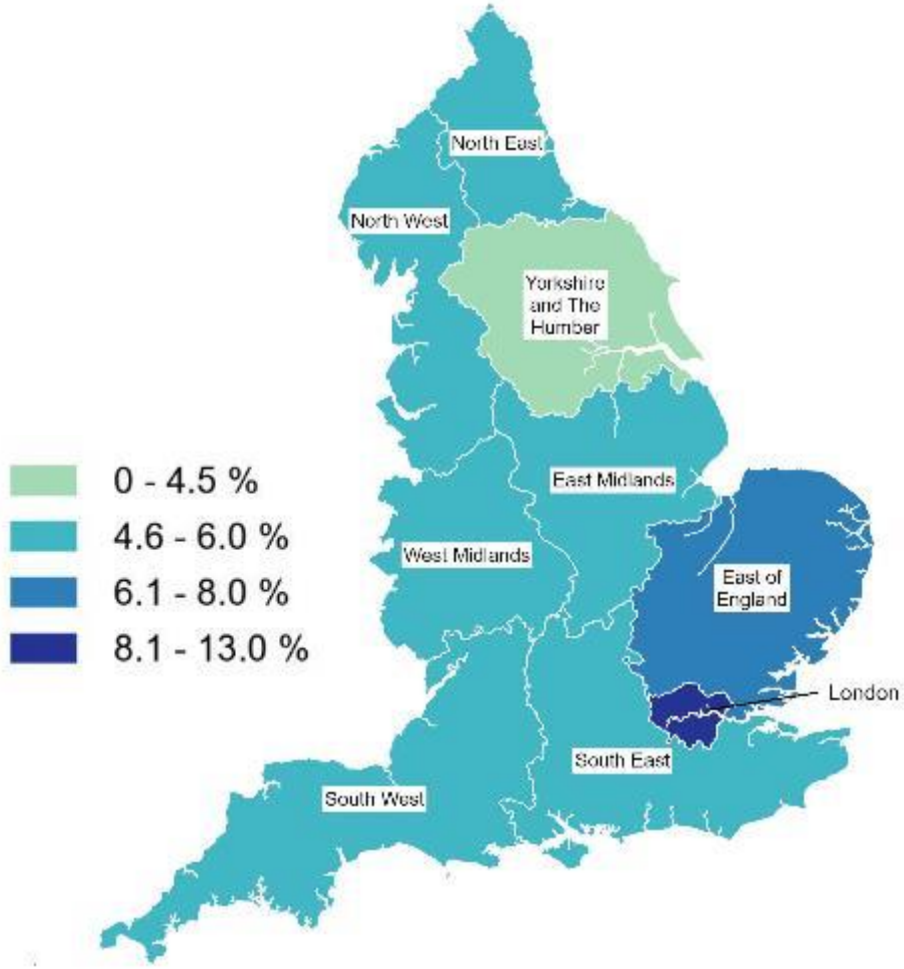
319,800

properties in areas at **high** flood risk from surface water flooding are in London.

38%

of the total number of properties in areas at **high** or **medium** flood risk are in the East of England, the North West and the South East.

Properties in areas at high/ medium risk of flooding from surface water, as a % of total number of properties per region



Environment Agency

Climate change projections

Rivers and the sea

- With climate change, we estimate that the total number of properties in areas at risk of flooding from rivers and the sea will increase from 2.4m to around **3.1m**, a **27%** increase between 2036 and 2069.

Surface water

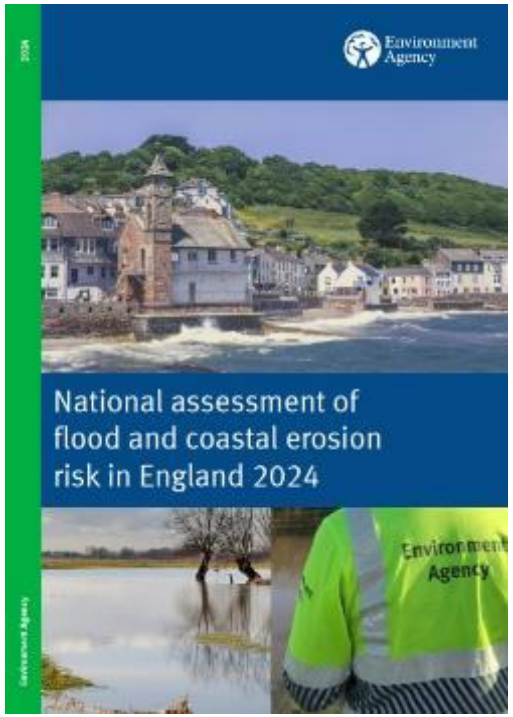
- With climate change, we estimate that the total number of properties in areas at risk of flooding from surface water could increase from 4.6m to **6.1m**, a **30%** increase between 2040 and 2060.

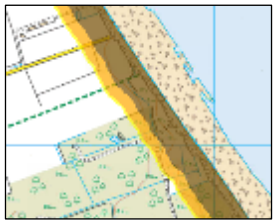
Environment Agency

What to do next

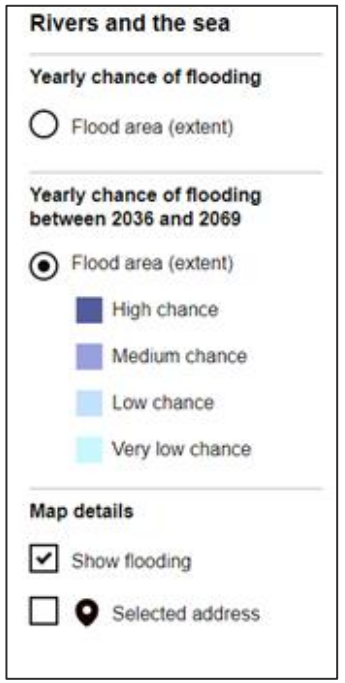
Environment Agency

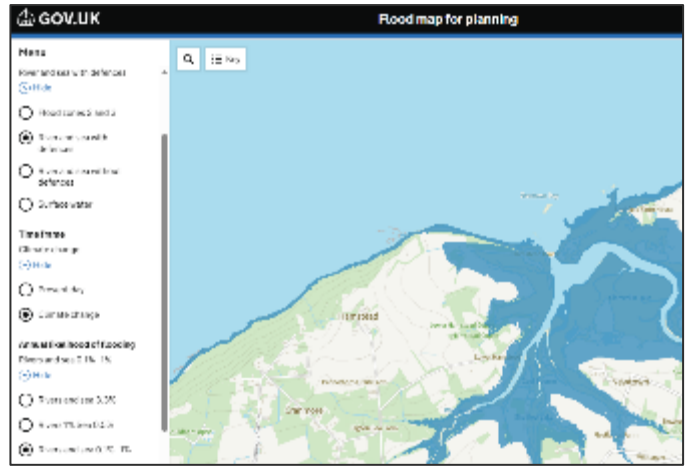
Look at the new data online





Updated National Coastal Erosion Risk Map (NCERM)





We published a report explaining how flood and coastal erosion risk is changing across England and why.

17 December 2024

We published the data on GOV.UK and update our digital services - 'Check Your Long-Term Flood Risk' and 'Check coastal erosion risk for an area in England'

28 January 2025

We published updated Flood Zones and add new data to 'Flood Map for Planning'.

25 March 2025

Which service for which audience?

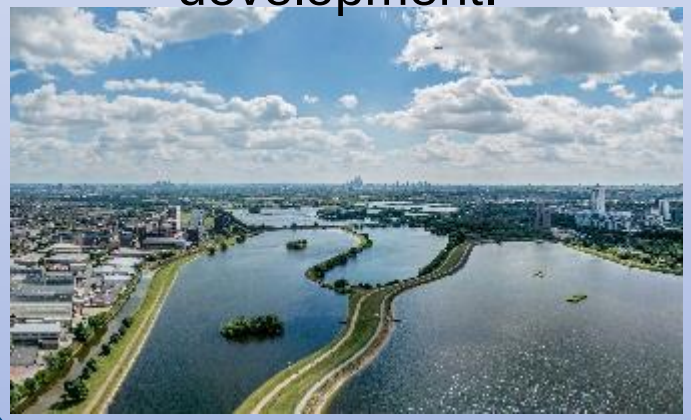
Flood risk information

Check Your Long-Term Flood Risk

For residents and businesses to enable them to understand their risk, make decisions and take actions to prepare.

Flood Map for Planning

For planners, developers and those carrying out flood risk assessments. Help inform decisions about the location and design of development.



Erosion risk information

Check coastal erosion risk for an area in England, and Shoreline Management Plan Explorer

For planners, developers, practitioners and the public to make short- and long-term planning and investment decisions.

Data services platform: Provides open data access for professional users.

What data is available in each product?

Flood risk information

Erosion risk information

Check Your Long-Term Flood Risk

Rivers and Sea

- Updated maps of flood risk
- Future risk accounting for climate change
- Depth information

Surface water

- Updated maps of flood risk
- Future risk accounting for climate change
- Depth information

Flood Map for Planning

- Updated Flood Zones
- Extents of future flood risk from rivers & sea
- 1 in 30 defended scenario to inform LPA mapping of functional floodplain
- Surface water flood risk extents

Check coastal erosion risk for an area in England, and Shoreline Management Plan Explorer

- Erosion risk areas (polygons) to 2055 and 2105
- Future risk accounting for different coastal management and climate scenarios
- Properties at risk data

Data services platform: Provides open data access for professional users.

Flood Map for Planning: Future improvements

Starting Summer 25

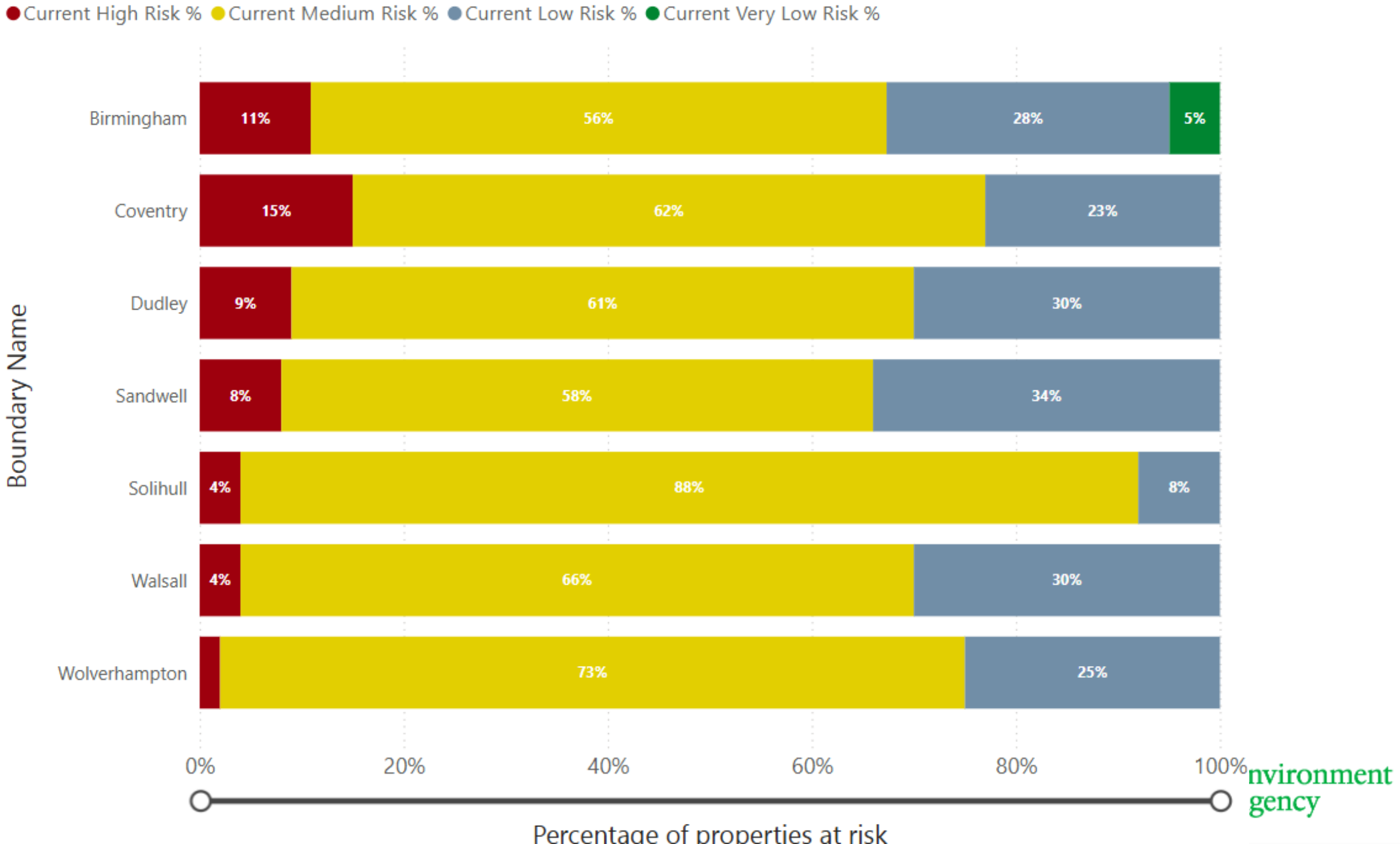
- Improving in priority locations
- Focus on areas where older data is retained or 'holding comments' in place

To follow…

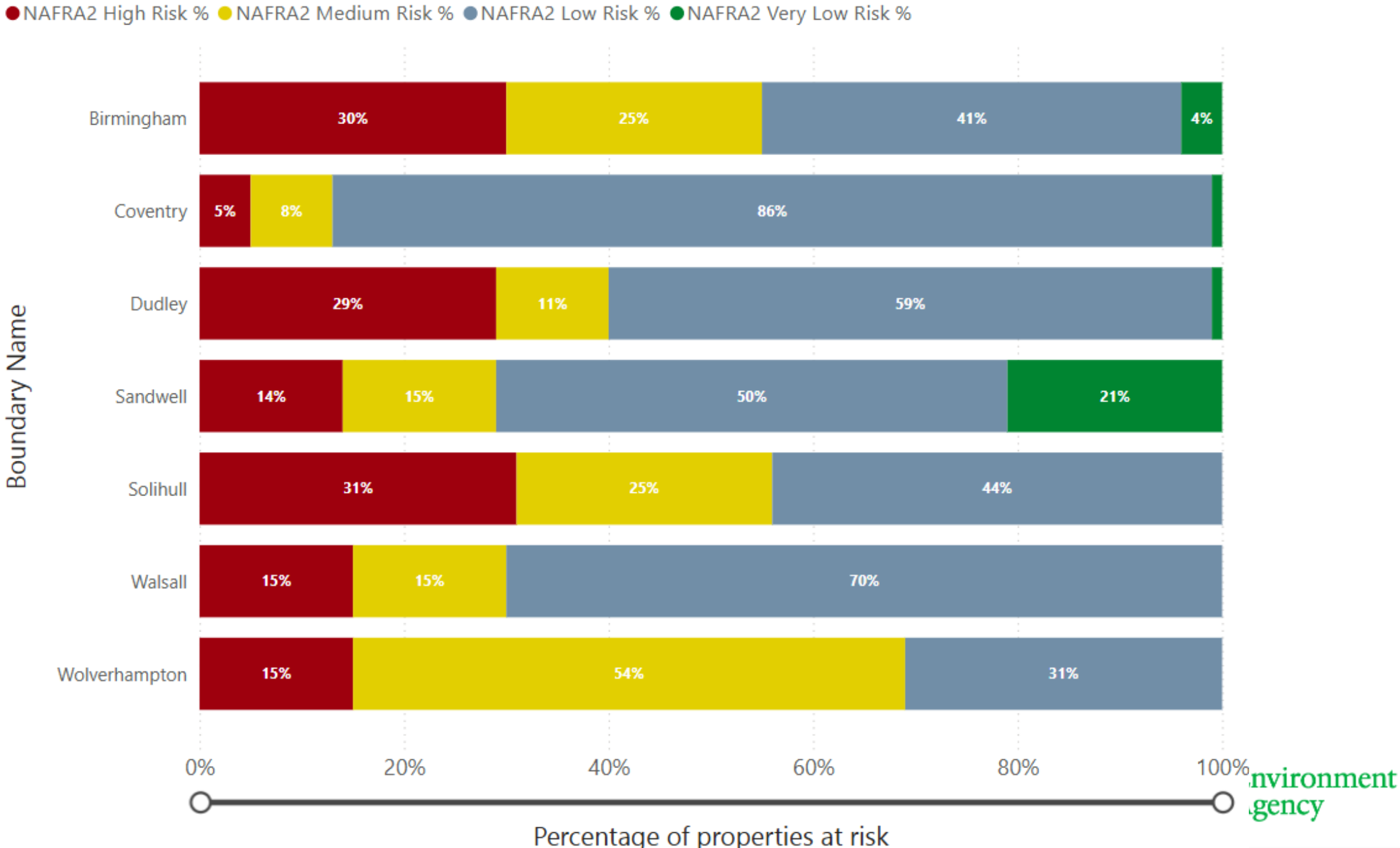
- Surface water depths
- Surface water climate change extents
- River/sea depths
- Establish cycle of quarterly updates
- Replacements for retained areas

Environment Agency

Proportional risk in Current RoFRS



Proportional risk in NAFRA2 RoFRS



Present Day

Environment Agency

Surface water map

Yearly chance of flooding

- ○ Flood area (extent)

Yearly chance of flooding between 2040 and 2060

- ◉ Flood area (extent)
  - High chance
  - Medium chance
  - Low chance

Map details

- ☑ Show flooding
- ☐ Selected address

Climate Change

Environment Agency

Get a boundary report

Edit

Delete

Datasets

- ○ Flood zones 2 and 3
- ◉ River and sea with defences
- ○ River and sea without defences
- ○ Surface water
- ○ None

Time frame

- ◉ Present day
- ○ Climate change

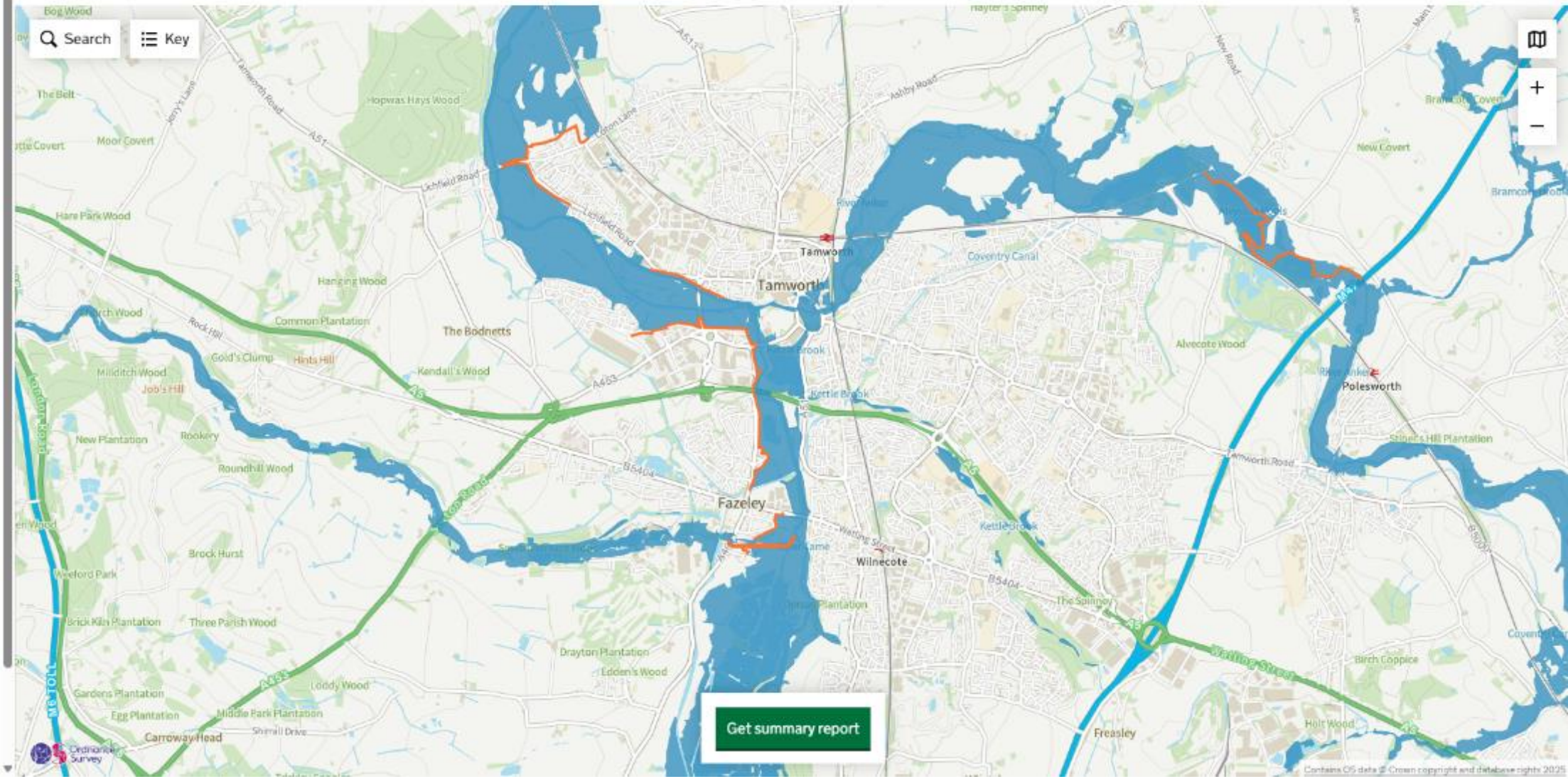
Annual likelihood of flooding

- ○ Rivers and sea 1 in 30
- ◉ Rivers 1 in 100, Sea 1 in 200
- ○ Rivers and sea 1 in 1000

Map features

- ☐ Water storage

Rivers and sea supporting data may show inconsistent results. Find out more



Present Day- Defences offering high protection

Environment Agency

GOV.UK

Flood map for planning

Get a boundary report

Edit

Delete

Datasets

- ○ Flood zones 2 and 3
- ◉ River and sea with defences
- ○ River and sea without defences
- ○ Surface water
- ○ None

Time frame

- ○ Present day
- ◉ Climate change

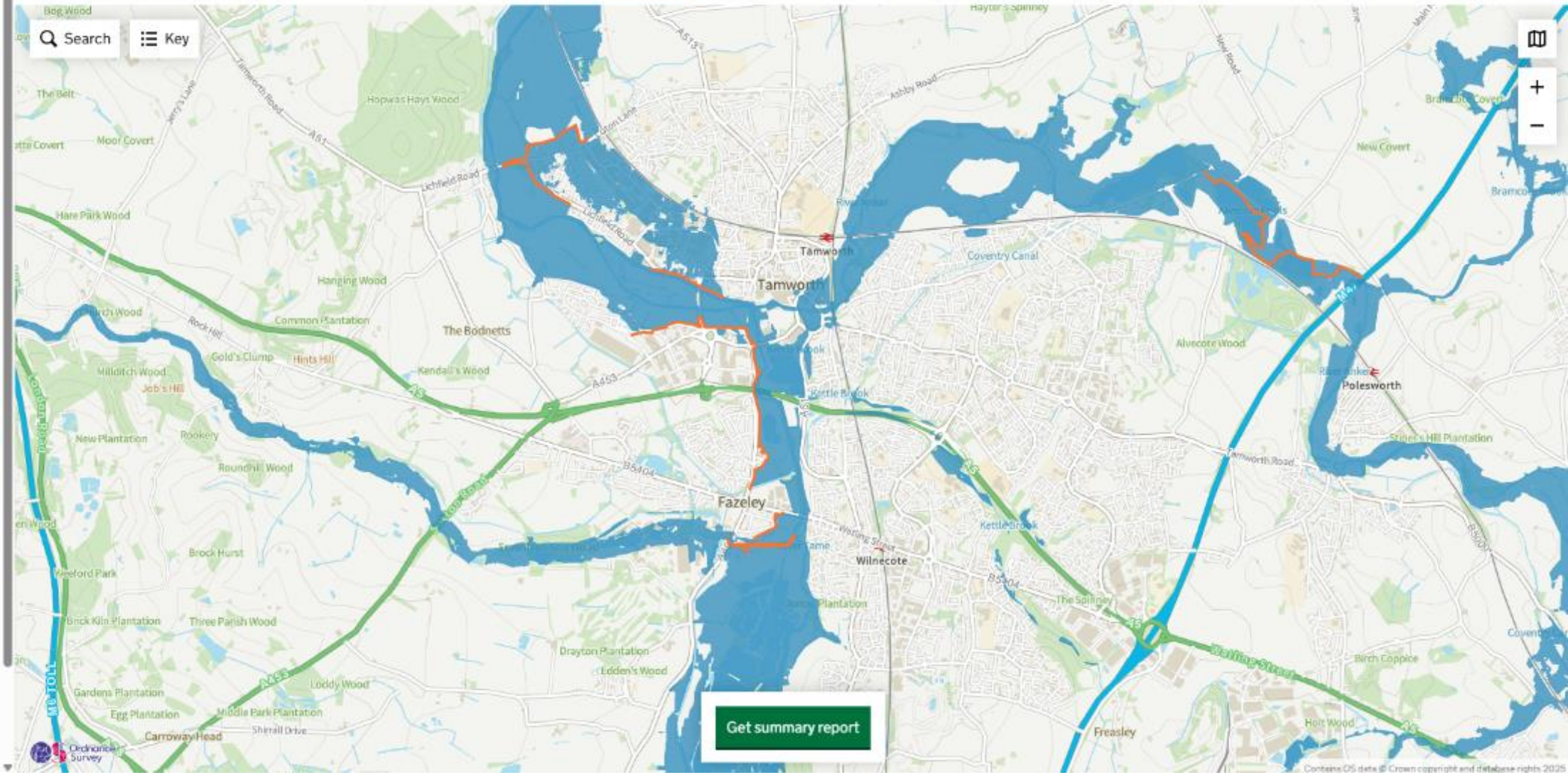
Annual likelihood of flooding

- ○ Rivers and sea 1 in 30
- ◉ Rivers 1 in 100, Sea 1 in 200
- ○ Rivers and sea 1 in 1000

Map features

- ☐ Water storage

Rivers and sea supporting data may show inconsistent results. Find out more



Climate Change - Predicticed impact on defences

Environment Agency

Any Questions?

Environment Agency

CRVA presentations

West Midlands Combined Authority

Greener Together

Mentimetre

Mentimeter QR code
Join at menti.com

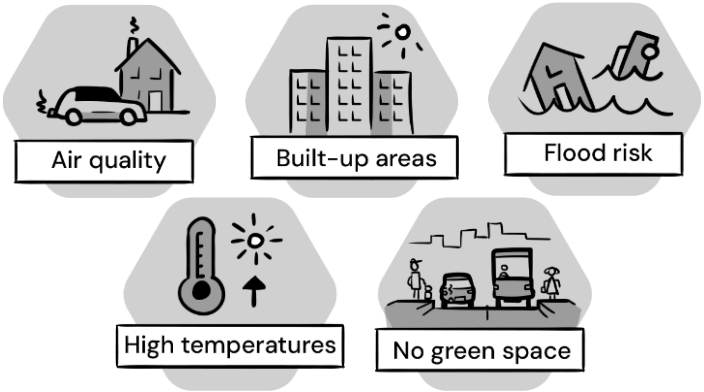
West Midlands Combined Authority

Greener Together

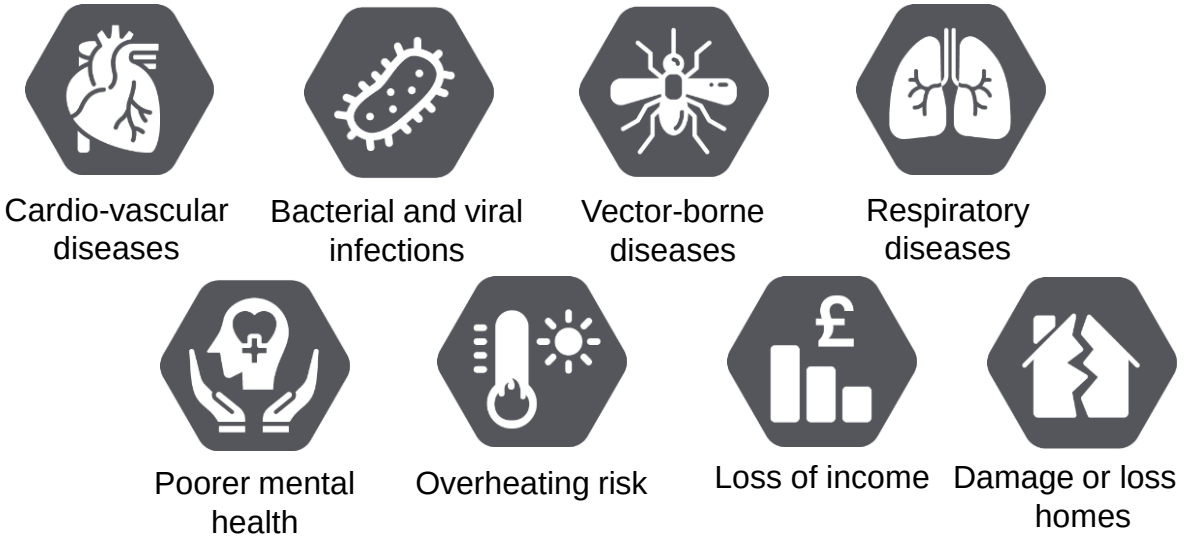
Climate Risk and Vulnerability Assessment

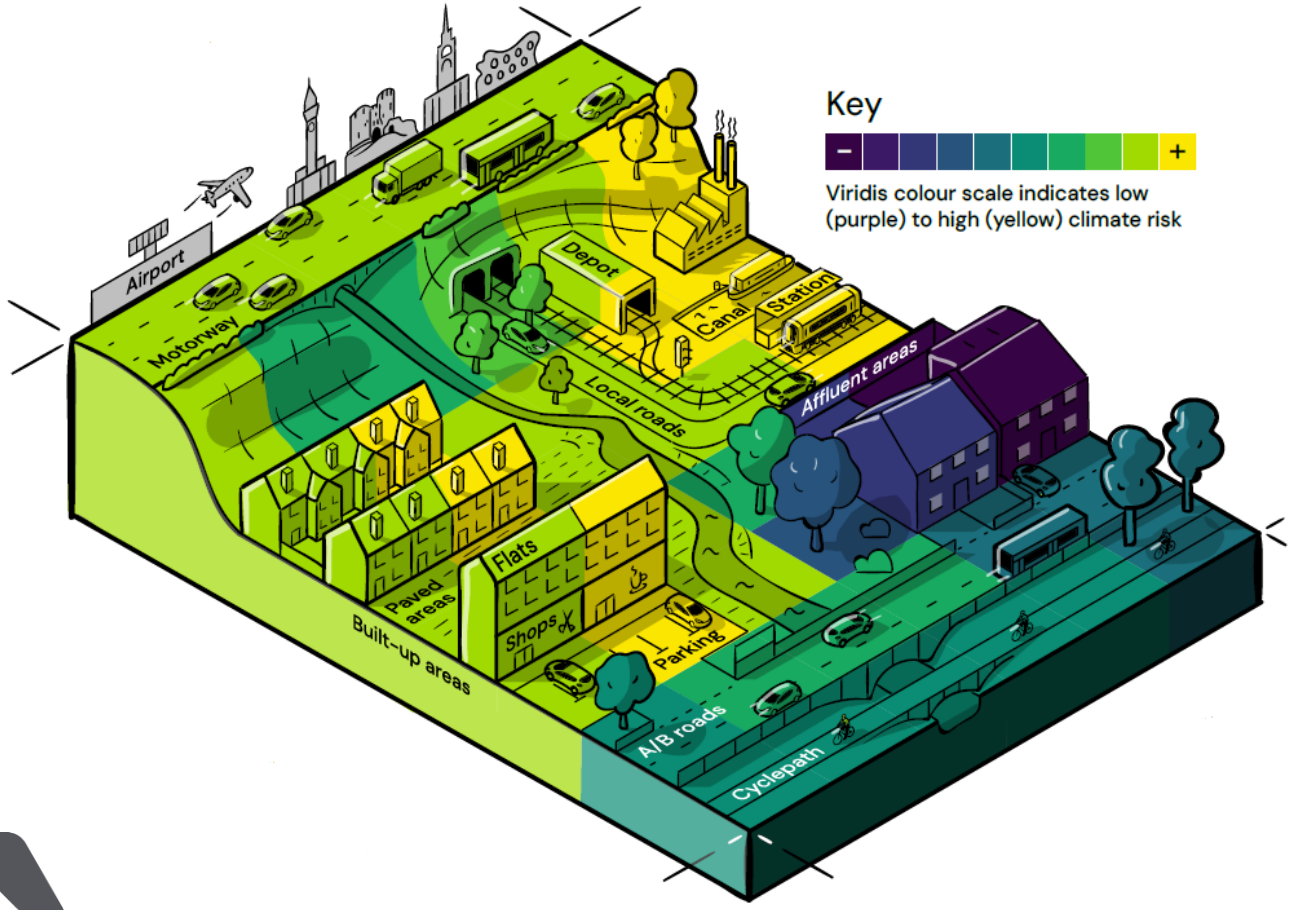
WM ADAPT

Without addressing these hazards…



… citizens are vulnerable to…



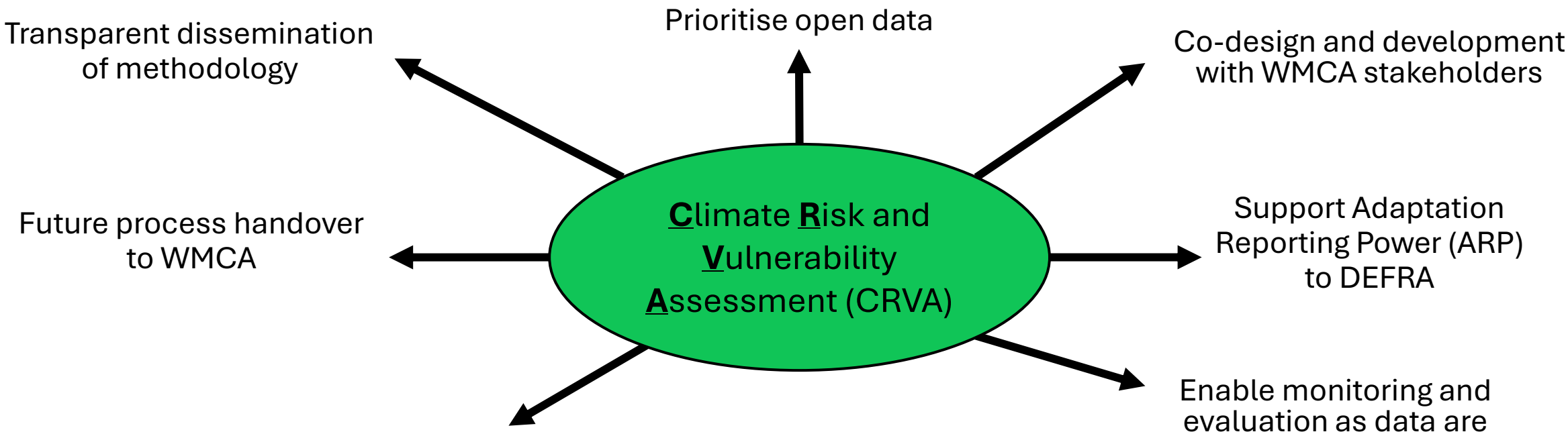


West Midlands Combined Authority

Greener Together

Climate Risk and Vulnerability Assessment

A toolkit that enables practitioners to evaluate the effects of climate change on new or existing developments and infrastructure



Decision-first instead of **science-first** approach (Ranger et al., 2013)

West Midlands Combined Authority | Greener Together

Climate Risk and Vulnerability Assessment

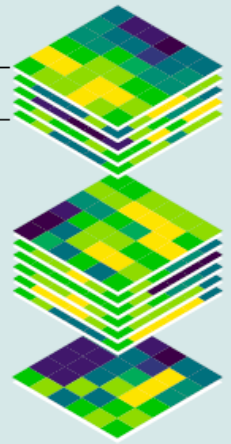
WM ADAPT

1. Data collection

Combining many different datasets representing climate risk. These include:

Datasets that represent climate HAZARDS, or could worsen a climate hazard, eg:

- Air quality
- Flood risk
- High summer temperatures
- Lack of green space and tree canopy cover
- Densely built-up areas



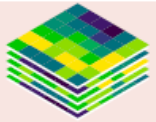
Datasets that represent VULNERABILITIES that could affect people's ability to cope with the impacts of climate change, eg:

- Income
- Housing
- Health and disability
- Employment
- Education
- Demographics

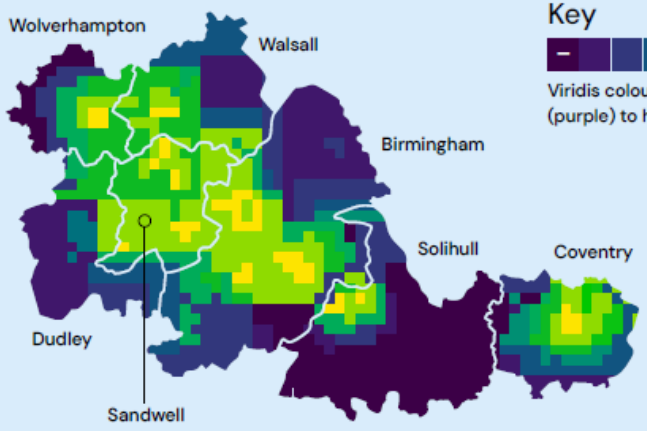
A dataset that represents an area's EXPOSURE to climate change, eg:

- Population density

2. Scoring the data

	Original data	Gridded, scored data	Combined final layer
HAZARD LAYERS			
VULNERABILITY LAYERS			
EXPOSURE LAYER			

3. Publish the map



4. Adaptation engagement

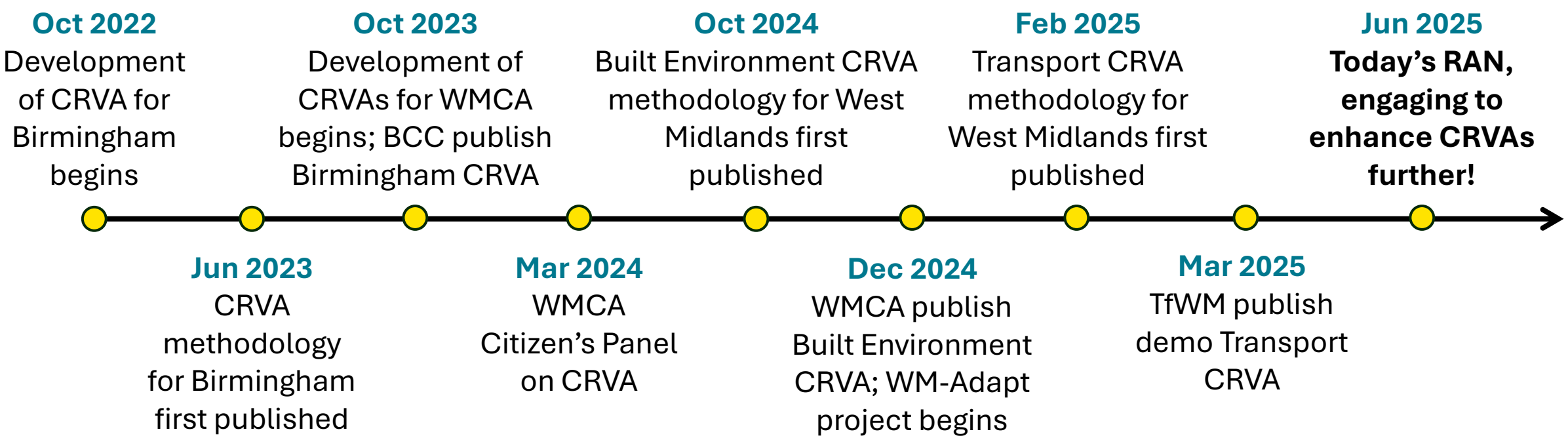
Maps are used to inform stakeholders of climate risks relating to places in the West Midlands.

They are used to prioritise adaptation actions, influence policy and allocate resources and funding.

5. Datasets are updated and published over time

Climate Risk and Vulnerability Assessment

A timeline of CRVA activity in the West Midlands…



West Midlands Combined Authority | Greener Together

Climate Risk and Vulnerability Assessment

Workstream Two of the WM-Adapt Project:

Develop exciting new capabilities for mapping climate risk and vulnerability

Model current and future regional urban temperature

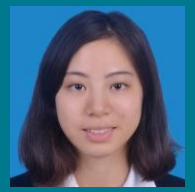
Dr Jian Zhong

Dr Jenny Stocker

Yanzhi Lu

Model current and future regional surface water flooding

Dr Xilin Xia



Dr Qian Li

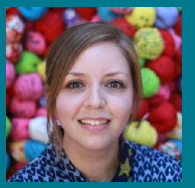
Develop regional health burden layers associated with climate risk

Dr Suzanne Bartington

Dr James Hall

Shi Chang

Develop regional economic impact layers associated with climate risk



Dr Sarah Greenham

Climate Risk and Vulnerability Assessment

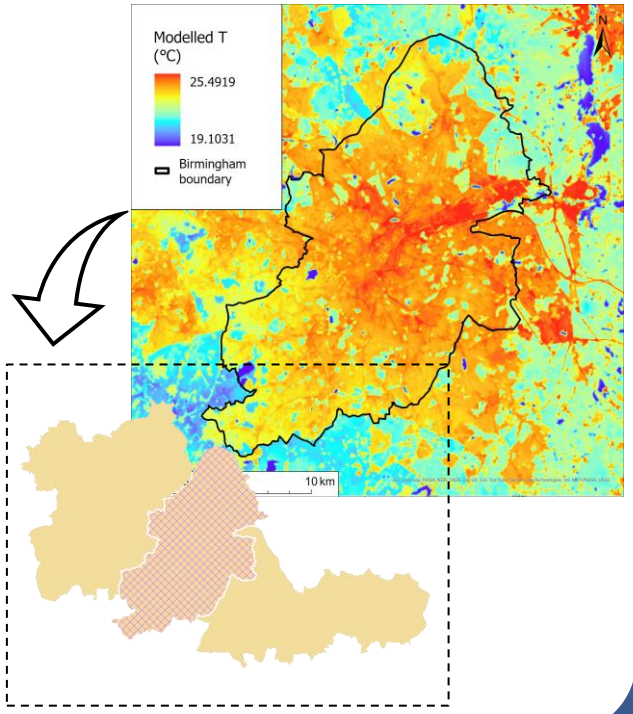
Urban temperature (urban heat island) risk

Model Validation

- Set the model up for Birmingham 2019
  - Thermal admittance
  - Surface resistance to evaporation
  - Albedo
- Model run & evaluation by measured temperature
  - Weather station network
  - Land surface temperature from Landsat
- Revise model set-up based on model performance
- Sensitivity testing to input parameter revising

Model Expansion

- Generate consistent model inputs for West Midlands
- UHI modelling for WM



Future Scenario Modelling

Urbanization/ Land use change

Greening

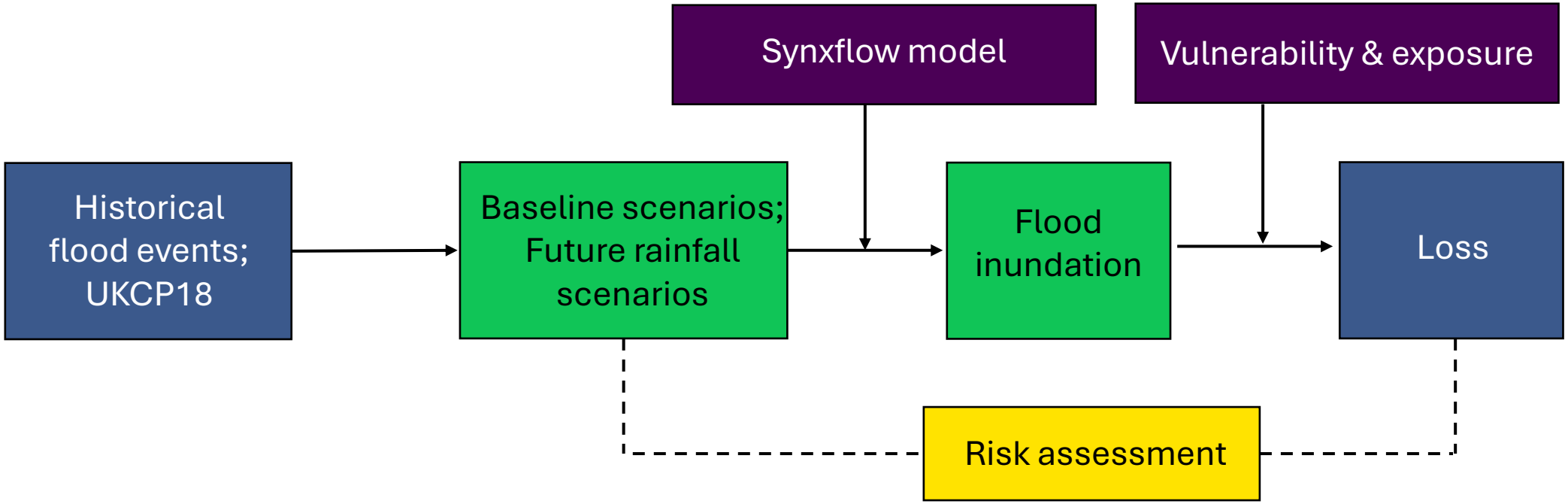
Climate change

Anthropogenic heat emissions

Climate Risk and Vulnerability Assessment

Surface water (pluvial) flood risk

- We will develop different scenarios and simulate them:
  - **A baseline scenario**: extremely severe flood events (26th Sep 2024), as well as flood events with moderate/mild rainfall intensity
  - **Future scenarios**: rainfall scenarios using future climate projections from UKCP18
- Consider **adaptation measurements** (green infrastructure)
- Look at how to integrate **vulnerability & exposure** into the CRVA



Climate Risk and Vulnerability Assessment

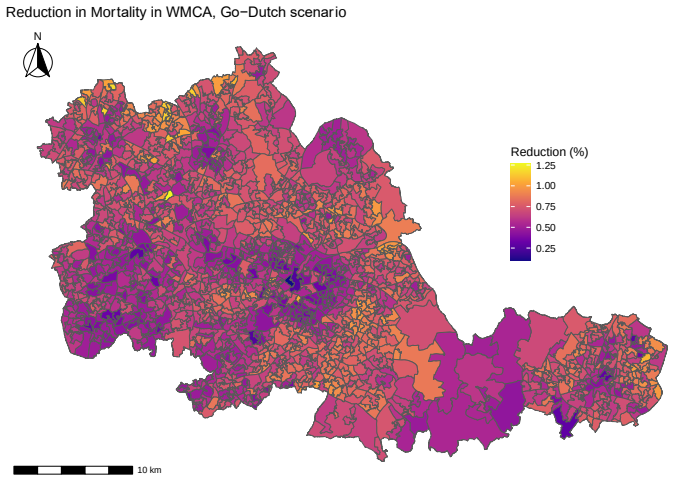
Health burden associated with climate risk: CLIMATE-LAT

Exposure pathways

- Indoor and ambient air pollution
- Green space
- Noise pollution
- Road traffic impacts
- Physical activity
- Urban Heat Island
- Flooding

Health and Economic impacts

- Chronic disease*
- Mortality
- Acute disease
- Mental health
- Health service use
- Quality of life
- Social care use
- Productivity changes



Climate Risk and Vulnerability Assessment

Economic impact associated with climate risk

- We have a proposed method that pulls information from lots of other datasets:
  - Multiplication of data on climate hazards, area covered by businesses and their density
  - Divided by Gross Value added (GVA) – the area's relative wealth and ability to recover

Hazard data already prepared for the CRVA (e.g. flooding, temperature)

Area of land per 100m grid allocated to economic-relevant land use

Estimated damages of hazard x density of points of interest (e.g. businesses, infrastructure)

$$\frac{Hazards \times Exposure \times Economic\ Sensitivity}{Adaptive\ Capacity}$$

Sum of Gross Value Added (GVA) by industry and points of interest per grid cell

Climate Risk and Vulnerability Assessment

We come with questions for the RAN!

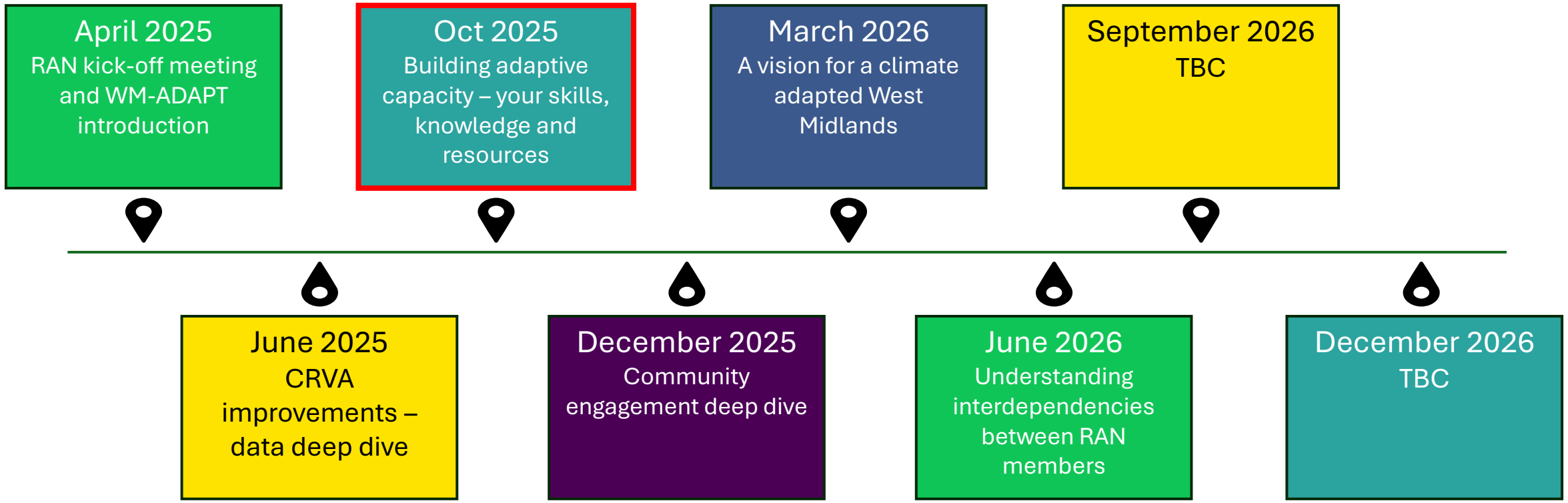
Urban temperature (urban heat island) risk	1. What **current and future temperature scenarios** would be most useful for the region? 2. What **policies, strategies, or information** on urban greenery planning are you aware of across the region that we can review to help us model future urban greening scenarios? 3. Do you have **data on human-induced heat** emissions (e.g. industry, transport) and **temperature monitoring**?
Surface water (pluvial) flood risk	1. Do you have any **photos of flooding** from 26th September 2024 (or even other similar flood events) that we could use for model validation? We would need to know the location where it was taken. 2. What **green infrastructure** might be most useful to improve urban climate resilience? 3. What **flooding information** would you like to see presented in the next development of the CRVA?
Health burden associated with climate change	1. What **statistics on health matter the most** regarding climate change? 2. What **health impacts are important**? Usually we focus on chronic diseases, what about communicable diseases? 3. Should we distinguish between **short-term (single event) and long-term (climate)** health impacts?
Economic impacts associated with climate change	1. Do you think the **proposed method captures economic impacts** well? Is there anything to change or add? 2. Do you have any **spatial data on businesses** across the region, or on GDP/GVA? 3. Given the cost of wind damage, **should be consider a layer on wind risk** in the CRVA?

Breakout discussion

You will be discussing data enhancements on:

1. Urban temperatures
2. Surface water flooding
3. Health impacts of climate change
4. Economic impacts of climate change

What's coming up?



West Midlands Combined Authority | Greener Together

Any other business

- Feedback on today's meeting
- Expect a Terms of Reference

Next meeting: **Thursday 9th October, 13:00-15:00**

- Understanding your *adaptive capabilities*, *skills and knowledge*
- Sign up to the RAN's October meeting

Climate Adaptation Literacy Course

- West Midlands specific
- 3 modules of self-led content
- Upskill on climate risks and adaptation options
- CPD accredited upon assessment
- No cost
- Available here: West Midlands Climate Adaptation Literacy Training

Mentimeter QR code
Join at menti.com

West Midlands Combined Authority | Greener Together