



OxCam

The Green Arc



Environment Agency Ox-Cam Arc Team

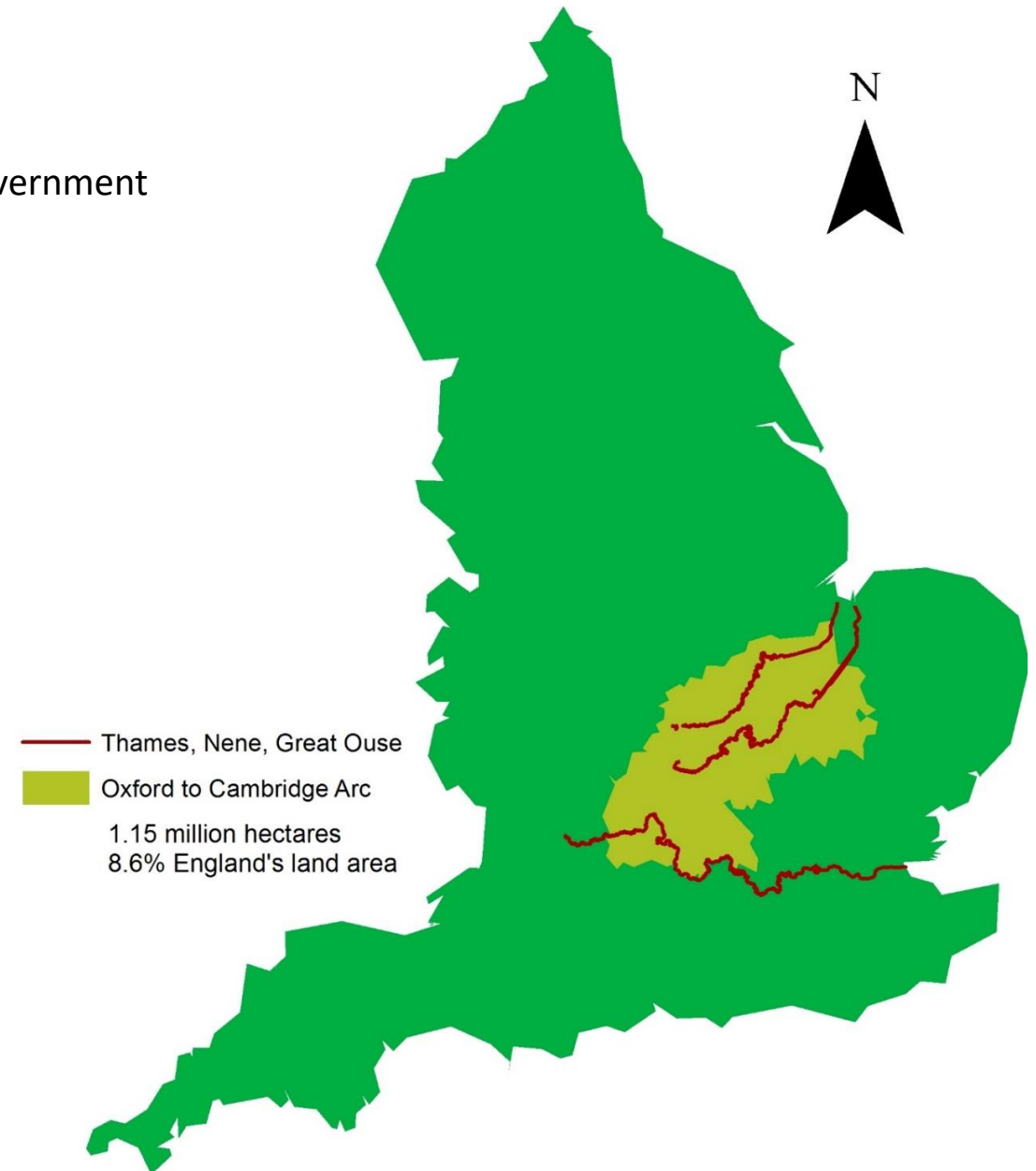
Ceri Lewis & Sarah Trouw,
Bedfordshire LNP Partnership event
08 December 2021

Background

The Oxford to Cambridge (OxCam) Arc is the name given to a cross-government initiative covering five ceremonial counties.

OxCam presents the opportunity to:

- Adopt a cross-boundary partnership approach to strategically plan for the pressures of a changing climate
- Consider the mechanisms required to bring resilience and adaption measures together through place-making
- Strategically plan, harness, and deliver integrated investment in the right infrastructure, in the right place, at the right time





“Arc Spatial Framework”

– A Natural Capital approach to cross-boundary, integrated, evidenced planning

Green Growth

- Green and grey integrated
- Strategic planning
- Design and build standards

“We will place environment at the heart of planning, integrating understanding of future needs, including climate resilience to create great places for people and nature.

The Oxford Cambridge Arc will be an exemplar for environmentally sustainable development, accelerating the Arcs journey to net zero and delivery of biodiversity net gain. We will encourage green investment to support sustainable waste management and the development of circular economy.”

Nature Recovery

- Enhanced & Protected
- Connected
- Accessible

“We will protect, restore, enhance and create habitats across the Arc. We will map nature from local to landscape scale. We will identify and capitalise on opportunities for improved connectivity for nature and people”

Rethinking Natural Resources

“Clean Air and Integrated management of Water”

- Sustainable
- Integrated
- Resilient

“We will understand, facilitate and apply best practice approaches to improve air quality across the arc. We will work to understand water resources, water quality, and flood management issues to create an integrated, resilient cross-Arc approach to sustainable, integrated water management.”



Possible locations for new and extended settlements

- 1 Cambridge
- 2 St Neots/Sandy
- 3 Cambourne
- 4 Bedford



Environment Agency Ox-Cam Arc Team

Projects



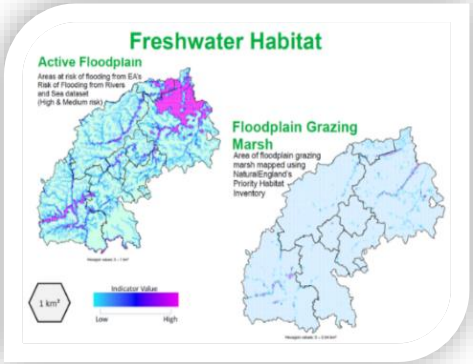
Ox-Cam Local Natural Capital Plan

Local Natural Capital Plan

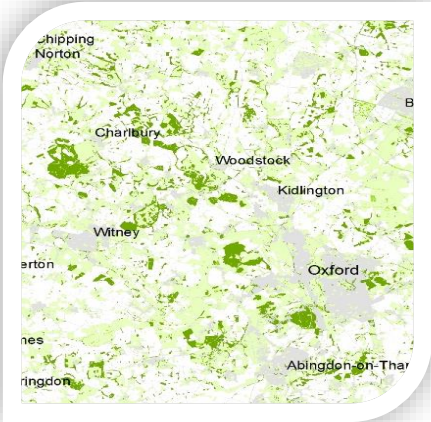
Co-design with partners and specialist review to create a natural capital planning tool



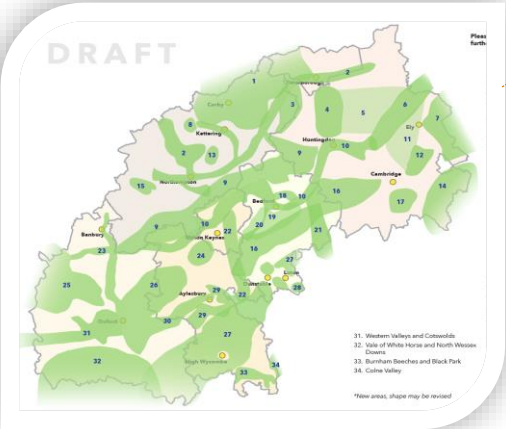
Creating a **Natural Capital Baseline** of asset type, quantity and location.



Natural Capital Indicator Maps supporting our baseline highlighting some quality indicators - based on the NE Atlas



Mapping **Ecosystem Services** to show what our natural assets provide

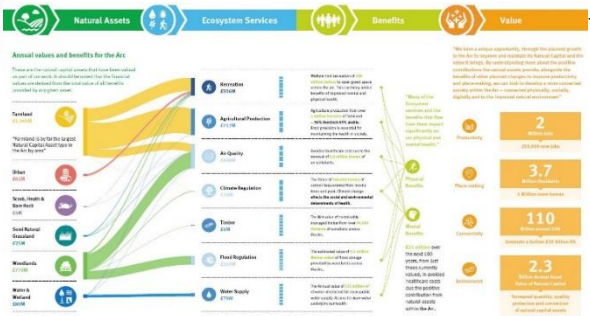


Mapping **Opportunities** and risks across the Arc



Natural Capital Account to articulate benefits and values that flow from The natural capital of the Arc

Funding and Investment Guide to highlight why and how to take a natural capital approach





Flood Risk Investment Study

Flood Risk Investment Study



*Approximately
110,000 homes
in the Arc are
currently at risk
of flooding*



*Up to 25% of
the Arc's land is
currently at risk
of flooding*

Flood Risk Investment Study

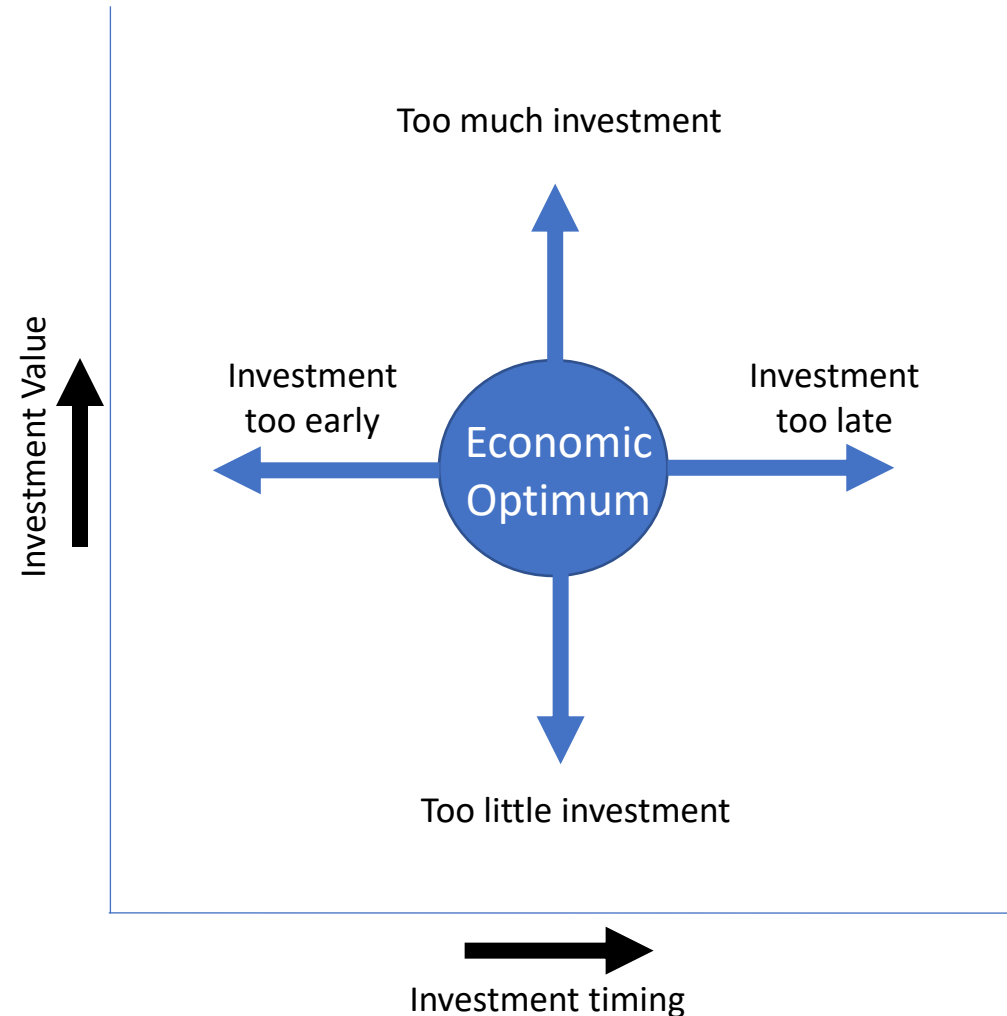
	Future Scenarios	
	Development There are three main sets of development scenarios that we are considering:	Climate Change There are three climate change scenarios that we are considering:
New Towns:	Medium (23k Dwellings/y) High (30k Dwellings/y) Very high (43k Dwellings/y)	Medium (2°C temperature rise) High (4°C temperature rise) High++
Urban Extensions:	Medium (23k Dwellings/y) High (30k Dwellings/y) Very high (43k Dwellings/y)	Medium (2°C temperature rise) High (4°C temperature rise) High++
50:50 Mix:	Medium (23k Dwellings/y) High (30k Dwellings/y) Very high (43k Dwellings/y)	Medium (2°C temperature rise) High (4°C temperature rise) High++

Flood Risk Investment Study

Economic optimum level of investment

We are looking to **identify the economic optimum level of investment** in flood resilience, across a range of climate change and development scenarios.

This economic assessment will inform investment planning for OxCam about the **right level** and **correct timing** of investment required in flood resilience.





OxCam Integrated Water Management Framework



Integrated water management

• Sustainable

• Clean

• Resilient

Pressures



Climate change

- Hotter, drier summers, and warmer wetter winters – greater chance of drought and water shortages
- Greater chance of extreme rainfall leading to more frequent, severe flooding



Growth

- Population increase, leading to greater demand for water, more homes at risk of flooding, and more sewage being discharged into our rivers
- Projected 58% increase in domestic water demand by 2050

In the Arc now

Arc Aspirations



Water supply and demand

- 3.8 million people in the Arc with an estimated 535,800 m³ domestic water use per day
- The Arc is 79% agricultural land, with agriculture creating high water demands

- Move towards water neutrality through water efficiency measures and alternative supply options
- Maximise volume of water returned to the environment – watercourse enhancement or aquifer recharge



Water quality

- Out of 343 waterbodies across the Arc, 288 have pollution listed as a reason that is contributing to them not achieving good status

- Create nutrient neutrality
- Treatment/reuse of wastewater and harvesting of surface water runoff to minimise discharges
- More effective land use/land management approaches e.g. water friendly farming, converting land use to woodlands or wetlands etc.



Water for the environment

- There are 5,710km of rivers and streams across the Arc
- 80% (160) of the world's chalkstreams are in England 11% (18) of those are in the Arc

- Target specific outcomes for animals and plants by providing the right amount of water at the right time for them to feed, breed and grow.
- Protect the Arc's unique water environments – such as the chalk streams



Flood resilience places

- 14.7% of the Arc's land area is at a high risk of flooding

- Safer, more resilient communities, with opportunities for nature and recreation, and many wider benefits



Clean plentiful water in the right place at the right time across the Arc

Integrated water management



Social benefits



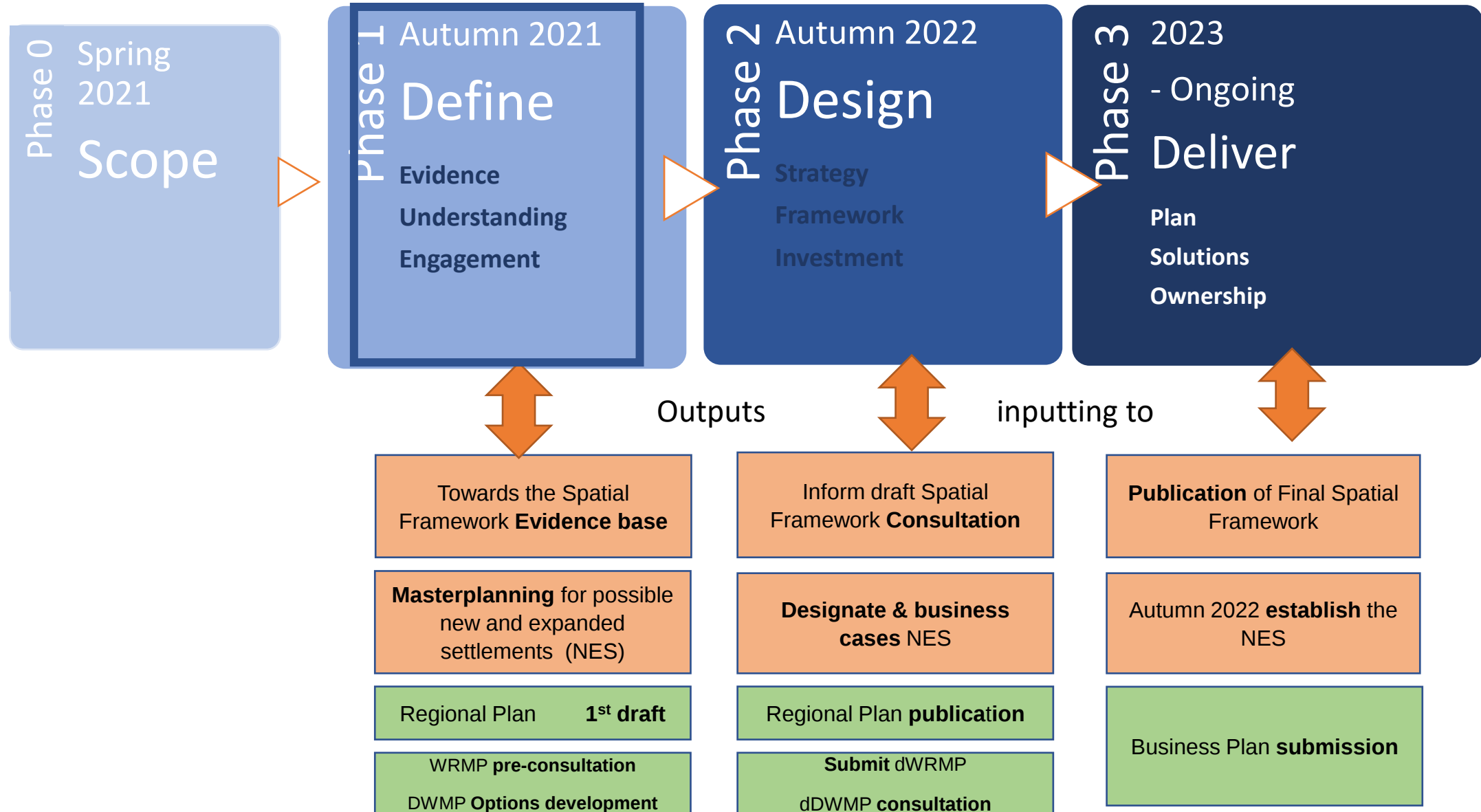
Environmental benefits



Economic benefits

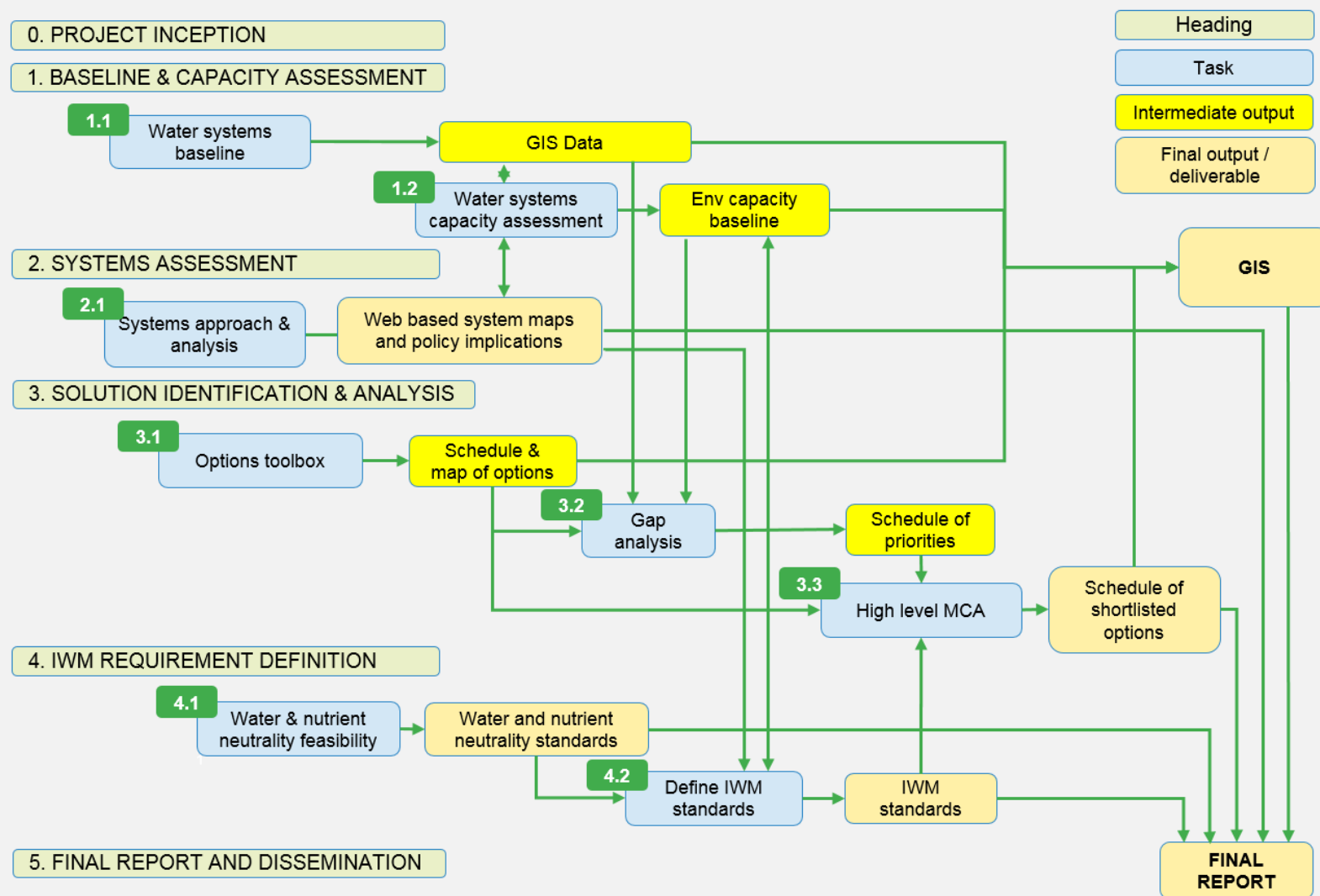
We can maximise the opportunity and deliver more by integrating water infrastructure programmes and investment. This will lead to **reduced costs, a better place to live and work, and multiple benefits for society, the environment and the economy.**

Integrated Water Management Programme





Phase 1: Proposed approach



OxCam Arc Water (Integrated Water Management) Governance Structure

Leadership /Programme Group

OxCam Arc Water Leadership Group Membership (meeting frequency – every 6 to 8 weeks)

- | | |
|----------------------------|--|
| 1) Chair | Paul Leinster |
| 2) Environment Agency | Sarah Trouw |
| 3) Environment Agency | Daniel Curtis |
| 4) WRE | Robin Price |
| 5) WRSE | Meyrick Gough |
| 6) Defra Deputy Director | Rachel Fisher (Land Use) & TBC (water) |
| 7) DLUHC | Adele Maher (SF) & Ben Whitlock (NES) |
| 8) Anglian Water | Allan Simpson |
| 9) Thames Water | Alex Nickson |
| 10) Affinity Water | Ritchie Carruthers |
| 11) Cambridge Water | Natalie Ackroyd |
| 12) Natural England | Adam Wallace |
| 13) IPA | Karl Fitzgerald |
| 14) Homes England | Sarah Greenwood |
| 15) EA National Office IWM | Richard Thompson |

Each meeting will involve core members who will be expected to attend each meeting or send a deputy with the authority to make decisions in their absence.

No direct interaction with Delivery Consultants

Group intended to table wider water topics linked to Arc Ambitions in the Arc as they emerge

OxCam IWMF Stakeholder Group

EA team to provide project updates

This group will be used to help determine requirement for Phase 2:

Technical Group

OxCam Arc Water Technical Group Membership (meeting frequency – every 4 weeks / or as needed)

- | | |
|--------------------------------------|------------------------------------|
| 1) Chair | Daniel Curtis |
| 2) OxCam Team Rep | Ceri Lewis |
| 3) Consultant Rep | Brendan Bromwich |
| 4) Consultant Rep | Nick Walters / Robbie MacDonald |
| 5) EA Research & Analysis Rep | Molly Anderson |
| 6) EA National Office SP Rep | Caroline Sutton |
| 7) EA National Office IWM Rep | Damien Crilly |
| 8) EA National Office Water Ambition | Jenny Forsyth |
| 9) EA National Office FCRM Rep | Jonathan Hunter |
| 10) EA National Office WQ Rep | Andy Rogers |
| 11) EA OCS WRE lead | Tom Nichols |
| 12) EA OCS WRSE lead | Sarah Wardell-Sarah Goode jobshare |
| 13) EA National Office ELMs Rep | DJ Gent |
| 14) Defra Policy FCRM rep | Gruffydd Waldron |
| 15) Defra Policy WQ rep | Ashley Holt |
| 16) Defra Policy WR rep | Adrian Brookes |
| 17) WRE | Geoff Darch |
| 18) WRSE | Meyrick Gough |
| 19) Thames Water | Alex Nickson |
| 20) Cambridge Water | Dan Clark |
| 21) Anglian Water | George Warren |
| 22) Affinity Water | Ritchie Carruthers |
| 23) Homes England | James Bristow |
| 24) DLUHC | Laura Morris |

Membership / attendance will be dependent on topics under discussion and specialisms required

Key Strategic Outcomes of the IWM project:

- To provide an evidence base for decision makers to understand existing pressures and the scale of solutions required if our ambitions for sustainable growth, 25 YEP and net zero are to be realised
- To identify holistic, multi beneficial water management solutions early in plan making to allow water to be seen as an asset rather than a problem - avoiding reactive water management solutions focused only on damage limitation
- Provide study outputs that support local plans, 'Green Recovery' and 'Project Speed' ambitions whilst fully identifying the requirements of the 25 YEP
- To ensure that land and water management are integrated to maximise multiple benefit realisation (overlap with future of agriculture post-EU i.e. ELMs Test and Trials)
- To act as a test-case for how early integrated water management planning can deliver ambitious and sustainable growth
- To trial integrated water approaches at scale and support capacity building to develop our water ambition and task forces across the Defra group



Questions?

Ox.Cam@environment-agency.gov.uk