OxCam Integrated Water Management Framework (IWMF) Test and trial in a place to shape change



Oxford to Cambridge Arc Leaders Group
11 March 2022

Our approach

Defra Group



Facilitate to accelerate the journey towards Net Zero

Build Climate and Community Resilience Deliver environmental protection and enhancement as an integral part of growth'

Maximise the unique opportunity to support Investment in the Environment

∃A OxCam



Taking a natural capital approach – evidence led, integrated, connected, trailblazing



Nature Recovery

- Enhanced & Protected
- Connected
- Accessible



Rethinking Natural Resources

- Sustainable
- Integrated
 Resilient



Green Growth

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

ocal leaders



Protect, restore, enhance, and create new nature areas and natural capital assets.

Ensure that existing and new communities see real benefit.

Be an exemplar for environmentally sustainable development.

Use natural resources wisely.

Work towards a net zero carbon target by 2040.







- 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."

Regional Evnrionment Principles

Delivering in partnership

- 25 Year Environment Plan
- Arc Environment Principles
- Arc Infrastructure Principles
- Arc Economic Prospectus

Shared ambitions, delivering more, adding values collectively

> **Ambition** and strategies

Environmen tal data and

mapping



"Partnership working and creation of best practice"

> **Growth at** scale

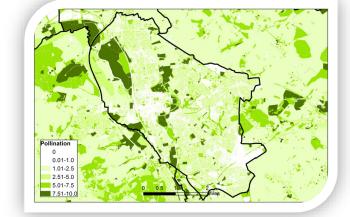
- Integrated environmental evidence
- Natural capital mapping and valuation
- Benefit analysis

Governance

and

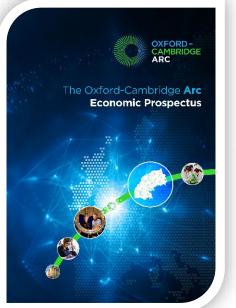
framework

Consistent, considered decision making



Arc Local Leadership Group

- Arc Environment, Infrastructure, and Strategic Place Working Groups
- Building knowledge and capacity
- Connecting stakeholders







IWMF project objectives

Project origins

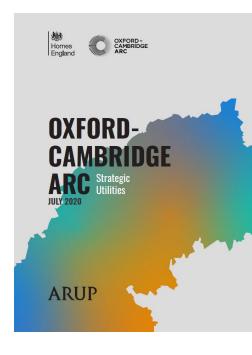
- Significant existing water pressures that growth and a changing climate will exacerbate
- A commitment to cross boundary spatial planning to deliver a Green Arc
- Strategic Utilities review pointed to emerging issues around water planning and capacity
- Environment Act and Arc principles set out ambitions to define and take a more integrated approach to water test and trial at scale to help shape approaches

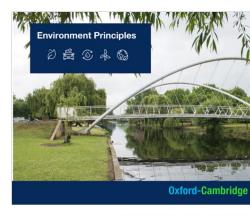
Our objectives

- Define and design an integrated framework for management of water across systems in the Arc - and beyond
- Shape ways of working, wider planning policy, land use allocation, future interventions

Ultimate outcomes

- A model approach or lessons learned in testing for integrated water management
- Streamlining environmental requirements/ opportunities through the planning system
- Increased delivery of environmental net gain in the Arc
- Contributing towards climate resilience and adaption







Delivering OxCam ambitions



Nature Recovery

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- Connected
- Accessible

The project's core objective is to improve the water environment. This means helping nature to recover where needed and to thrive across the OxCam Arc.



Rethinking Natural Resources

"Clean Air and Integrated management of Water"

- Sustainable
- Integrated
- Resilient

The project will deliver its objectives through rethinking how we manage water across the Arc. It will challenge current approaches and test and trial new methods of appraising and selecting options, capturing benefits and funding mechanisms.



Green Growth

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

The project investigates, evidences, tests, and proposes ways we can harness growth to improve the water environment. This will include consideration of building standards, spatial plans, and blue/green infrastructure.

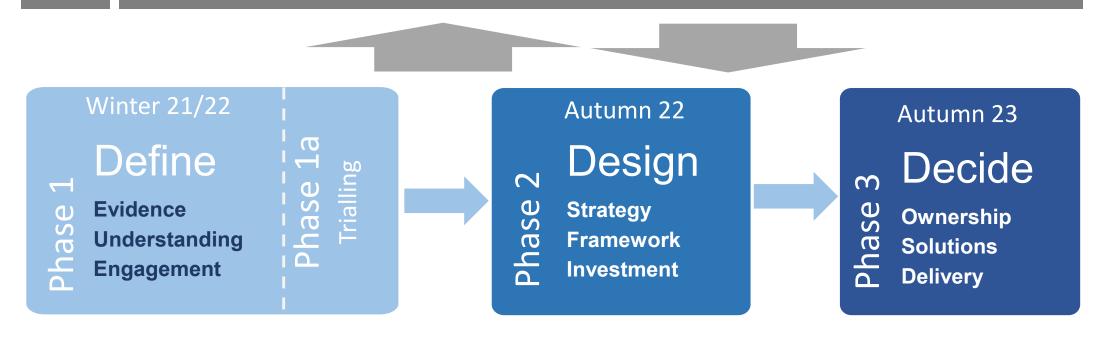


Programme Overview

Wider

25YEP Environmental Improvement Plan

EA Water Ambition / Integrated Programme development





Phase 1: Summary



1. Define the current challenges

- Baseline GIS maps
- Capacity assessment and hotspot mapping

2. Define links across the water systems

- Scope and interconnections between systems
- Informed standardised option and benefit categories

3. Define how to appraise interventions consistently

- Standardised option and benefit categories
- High level MCA
- Idealised MCA

4. Evidence to support policy/ decision making

- IWM standards definition across scales
- Water Neutrality and Nutrient Neutrality feasibility

OxCam Data Baseline

Collecting evidence: provides us with OxCam specific data and baseline information

Understanding Issues & Links **Explore approaches:** to help us further understand how all elements of Integrated Water Management link and key dependencies/ combinations to deliver optimum outcomes



Engagement

Autumn 2021 Define Evidence Understanding Engagement

Co-design with key stakeholders









Through engagement with:

- The Arc Water Leadership Group; and
- IWMF technical group which provides our main technical input: 500+ comments on work to date

Extensive engagement over 3 months including:

Technical Groups - 6 sessions

Water Neutrality IWM Evidence Baseline Systems Mapping
Nutrient Neutrality Hotspot Mapping Multi Criteria Analysis

Systems Mapping - 8 sessions



2. Define links across the water systems

Autumn 2021

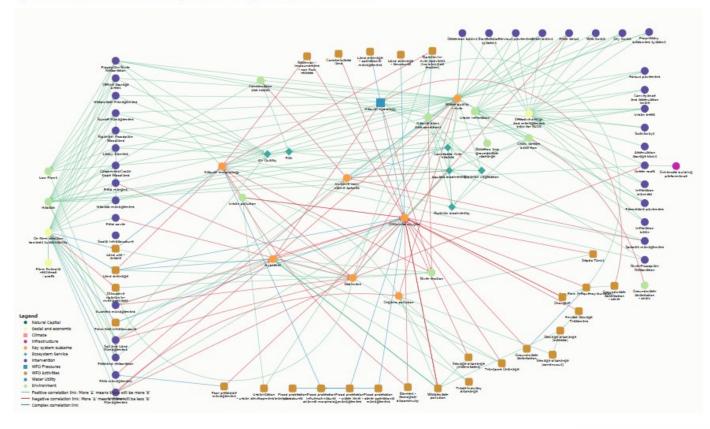
Define

Evidence
Understanding
Engagement

Define interdependencies across the water systems through Systems Mapping to:

- Understand how system components best work together to achieve our objectives
- Allow us to adopt a more coherent view of the existing systems and therefore better understand/direct benefits of interventions
- The maps identified the potential for integration at the planning level so that synergies are achieved
- The system maps provided the basis for categorising standardised option types and benefits from planning processes across environmental systems to allow interventions to be appraised consistently
- The maps also act as repository of knowledge categorising options and benefits (link to multi-criteria analysis).







3. Define how to appraise interventions consistently



Why?

To inform the development of investment plans in the water environment.

4 aspects of water planning: All appraised at different spatial scales and with different approaches

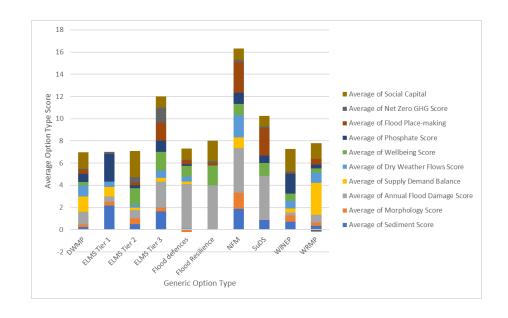
Interventions have implications beyond their core purpose

Evaluate option / intervention types

Phase 1 we assessed generic options – To prove the concept that assessing all options using standardised criteria provides benefits

What do we optimise for?

Our ambition, in consultation with stakeholders, is to optimise the portfolio of options to achieve the best environment.





Phase 1 - Key learning



Two areas we **need to influence** to deliver our **environmental ambition/outcomes**

Deliver / Funding mechanisms

More integrated approach to identification of solutions and delivery across the four core water subsystems

Policy

Improved IWM standards at all scales within the Arc development, local planning authority, catchment and regional



IWMF: Next steps (moving to Phase 2)

Evidence
Understanding
Engagement

- Delivery of the draft Phase 1 report is due w/c 28 February
- 3-week **consultation period** to inform Phase 1 final report
- Communicating phase 1 outputs and scope engagement to aid scoping Phase 2 March / April

Spring 2022
Pilot
Model
Test

- In March & April we will trial using Imperial College's quantitative systems model alongside phase 1 outputs to understand if a modelling approach to Phase 2 will add value / be achievable
- Detailed gap analysis of existing delivering mechanisms

Autumn 2022

Design

Strategy Framework Investment

- Scope for Phase 2 developed in draft review with stakeholders
- Project procurement for Phase 2 commences in May
- Phase 2 commences Summer 22



How IWMF supports Environment and Infrastructure principles

'Work towards a net zero carbon target by 2040'

Carbon key factor in options

'Sustainability at the forefront of infrastructure consideration

> Understand environmental capacity issues and pressures

'Use natural resources wisely'

appraisal

An integrated approach to water - focused on environmental outcomes

'Plan infrastructure in a community-facing and inclusive manner'

Maximising the health and wellbeing benefits of nature by optimising for environmental enhancement/

Shared regional principles for protecting, restoring and enhancing the environment in the **Oxford-Cambridge Arc**



'Ensure that existing and new communities see real benefit'

making to deliver multibeneficial solutions

Environmental enhancement as overarching principle for options appraisal

Support local planning

policy to exceed minimum

standards and inform land

use, planning policy and

regulatory reform

Support statutory plan

'Use of a natural capital approach within infrastructure planning'

'Protect, restore, enhance,

and create new nature areas

and Natural Capital assets'

'Be an exemplar for environmentally sustainable development'

'Plan infrastructure collaboratively, flexibly and efficiently'

Understand interdependencies and adopt a coherent approach across systems





Challenges and opportunities

Habitat decline and fragmentation

Inequalities and deprivation

Water resource and quality issues

Impacts of a changing climate

Adequate financing and investment

Ambitious place-making and growth

Setting high development standards

Consistent, scalable approaches and tools

Test and trialling of mechanisms

Partnerships working with stakeholders

Cross-boundary collaboration





Questions & Discussion

