OxCam Arc - climate adaptation & resilience

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ADEPT Environment Board 27th October 2021

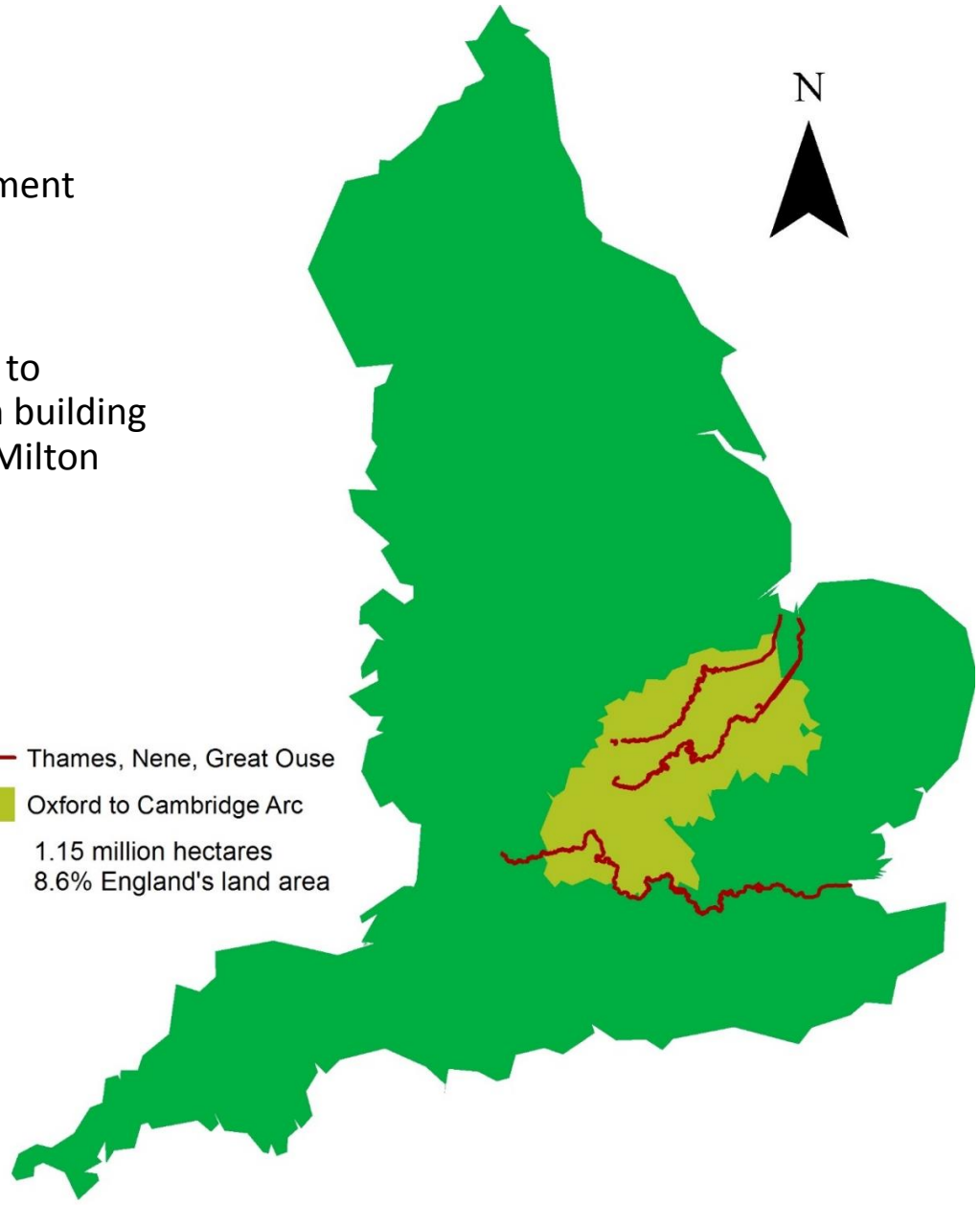
Background

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

The National Infrastructure Commission (NIC) published recommendations to government about how to maximise the area's economic potential through building up to 1 million new homes and supporting infrastructure between Oxford-Milton Keynes-Cambridge by 2050.

The arc currently generates ~£110 billion GVA PA

This has the potential to rise to ~£250 billion by 2050



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
- Use our extensive experience and evidence base to facilitate best practice and innovative approaches
- Strategically plan, harness, and deliver integrated investment in the right infrastructure, in the right place, at the right time
- Raise the profile of the risks associated with climate change, including indirect consequences such as increased social inequality

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

OxCam
The Green Arc

"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

Green Growth

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- **Strategic planning**
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oxcamlncp.org

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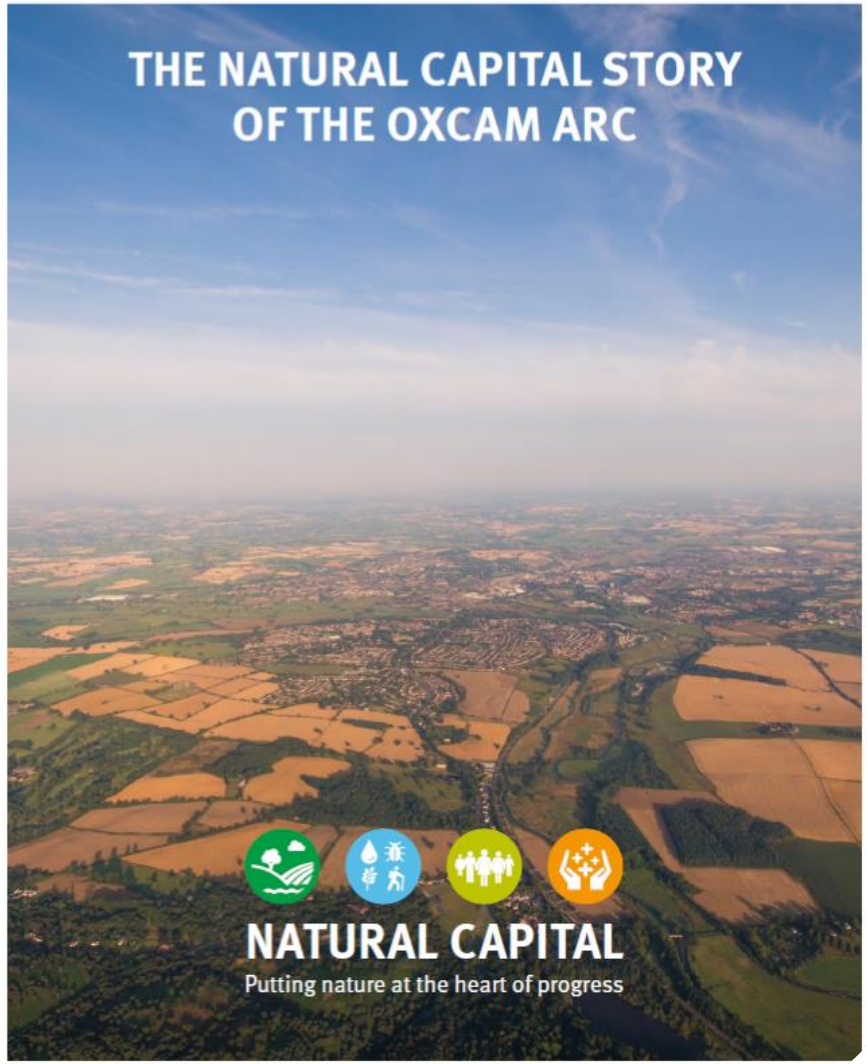
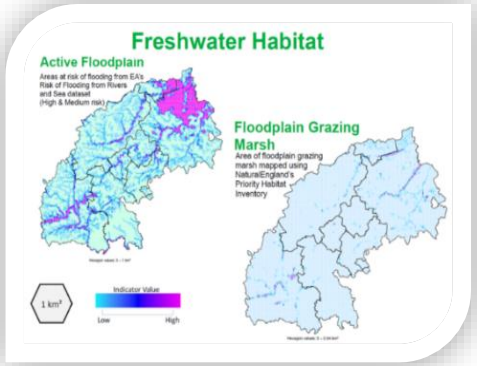
Local Natural Capital Plan



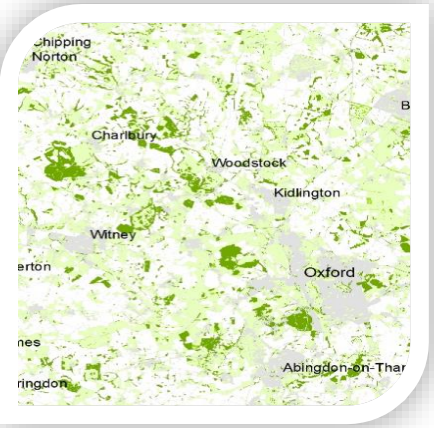
OxCam LNCP
Nature at the heart of progress

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

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- Integrated Water Management Plan
- Flood Risk Investment Study

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

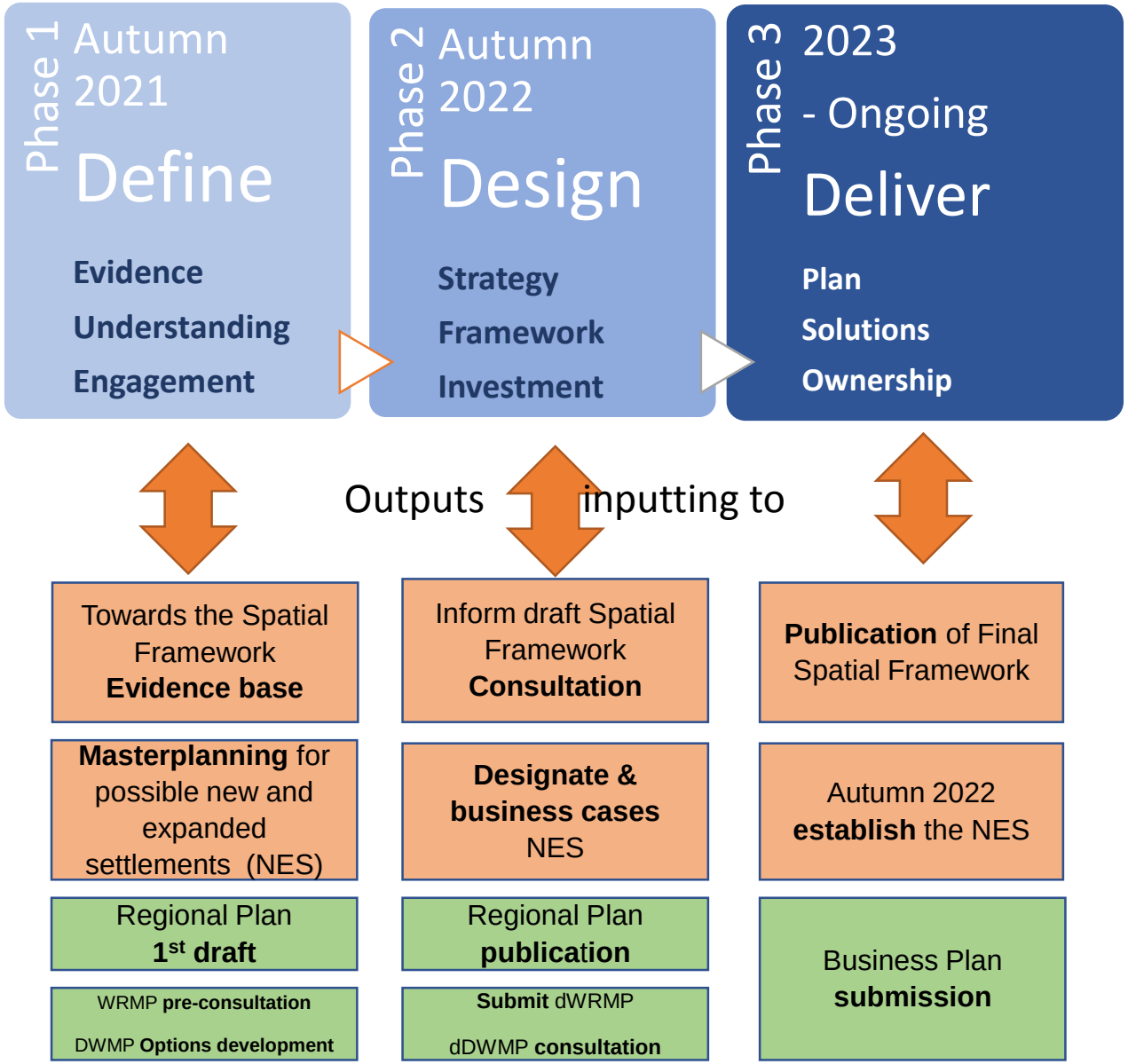
Clean plentiful water in the **right place** at the **right time** across the Arc

Integrated water management

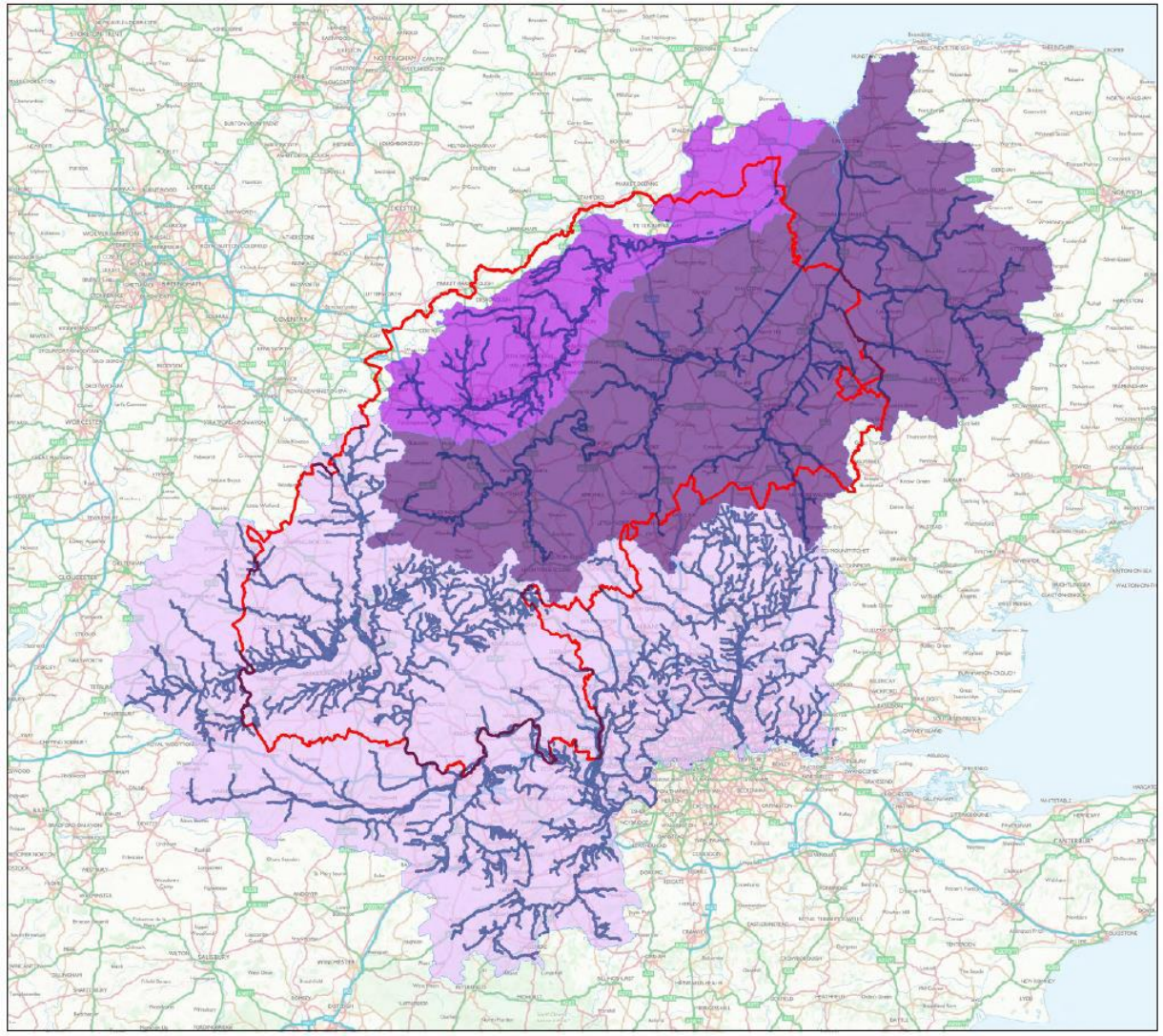
Social benefits | **Environmental benefits** | **Economic benefits**

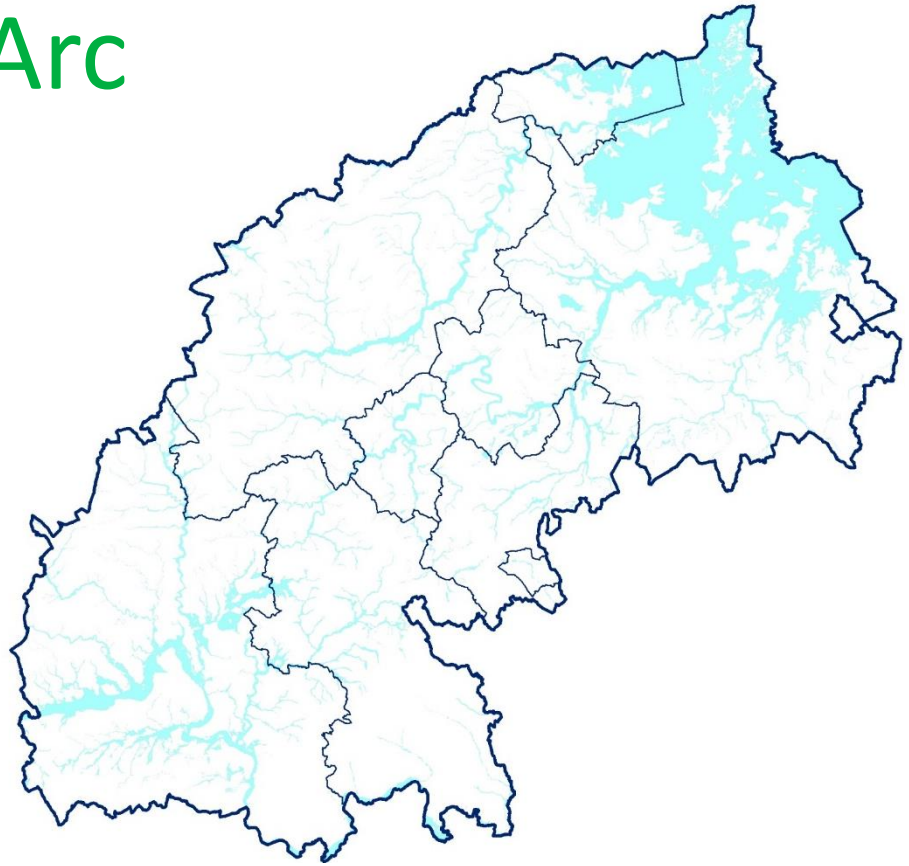
We can maximise the opportunity and deliver more by integrating water infrastructure programmes and investment. This will lead to **reduced costs, a better place to live and work, and multiple benefits for society, the environment and the economy.**

Integrated Water Management Plan



Water and Flood Risk in the Arc





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

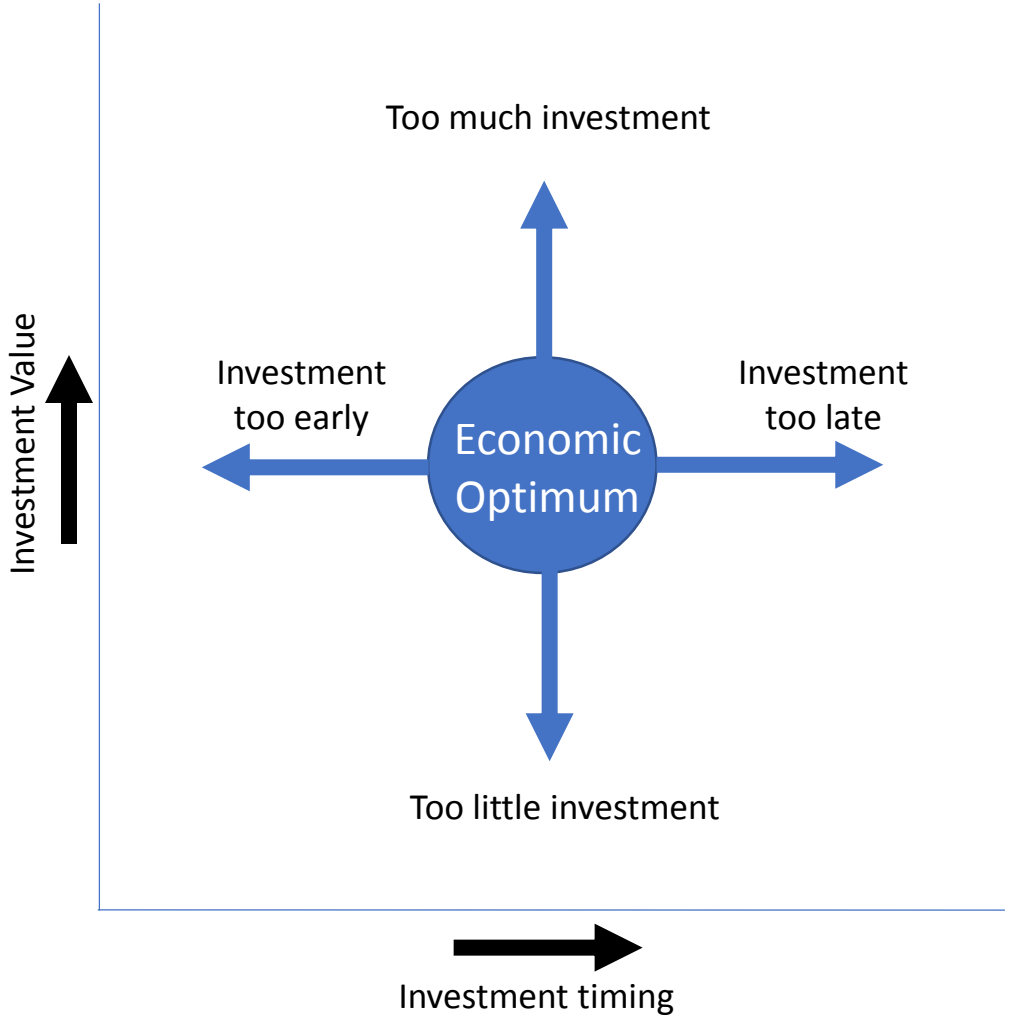
Up to 25% of the Arc's land is currently at risk of flooding

	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++

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.



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Questions?

Ox.Cam@environment-agency.gov.uk