

# **WRE Technical Programme**

## **How to help water stakeholders?**

**Steve Moncaster**  
**Technical Director**

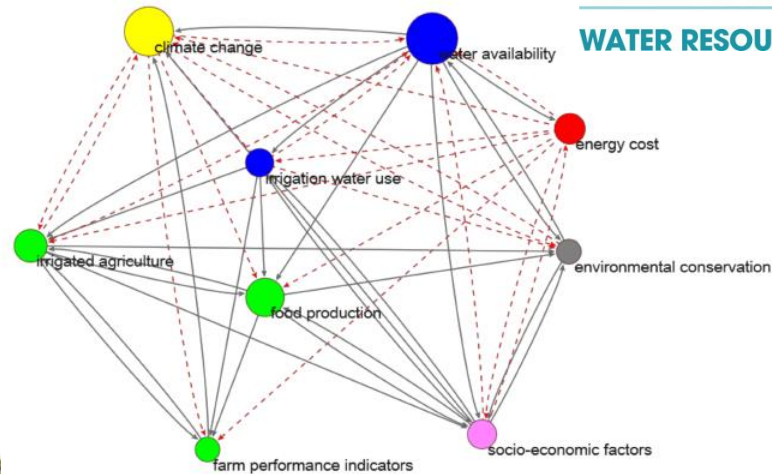
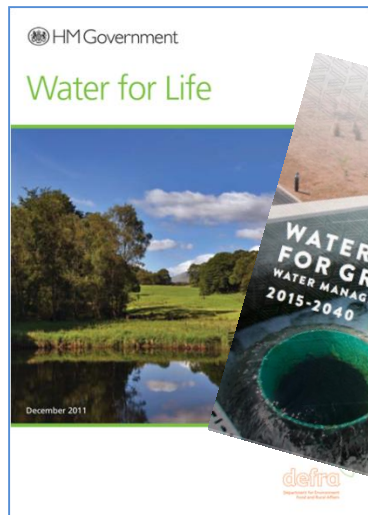
**FRESH4C Meeting**  
September 2019

# Overall WRE planning objectives

Water-energy-food-environment nexus

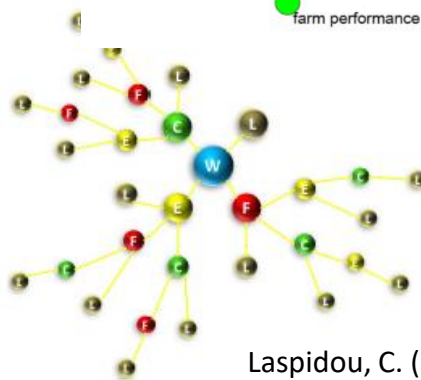
We're planning for:

- **Public water supply**
- **Irrigated agriculture & food processing**
- **Manufacturing industries**
- **Energy & power generation**
- **Environment**



Martinez, P. (2018)

**Our vision is for a  
strong economy in the  
WRE region and a  
flourishing  
environment**



Lapidou, C. (2018)

# Baseline vulnerability assessment

A multi-sector regional problem



WATER RESOURCES EAST

## A MULTI-SECTOR, REGIONAL SCALE PLANNING PROBLEM

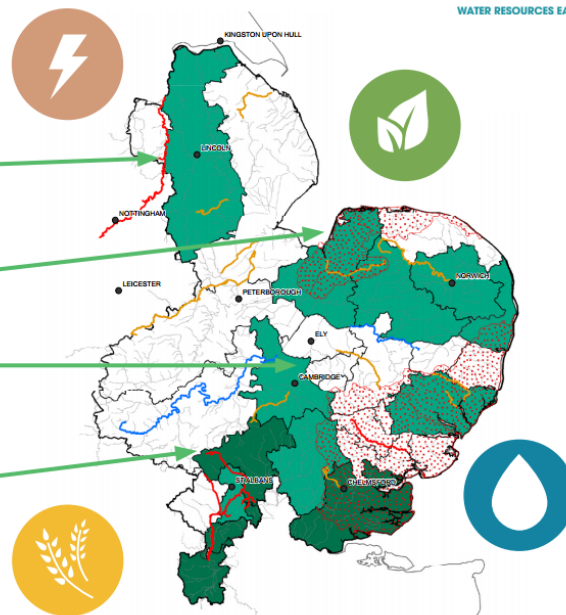
By the 2060's, the gap between the supply and demand for water will be at least 750MI/d. In the more severe scenarios that have been modelled, it is bigger. These estimates assume that levels of household demand are sustainable.

In scenarios with uncontrolled household demand there is widespread, catastrophic, failure of the WRE water resource and water supply systems.

**Power and public water supply vulnerabilities combine on the Trent**

**Public water supply, agriculture and environmental vulnerabilities combine in North Norfolk, Suffolk and Essex**

**Public water supply and environmental vulnerabilities combine in Cambridgeshire, the Vale of St Albans and the southern Chilterns**



WATER RESOURCES EAST

**Climate change, drought and growth in demand combine to produce water shortages**

**For uncontrolled increases in demand the effects are catastrophic**

# Our emerging long-term strategy

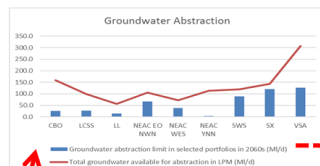
Reliable, resilient, sustainable and affordable



WATER RESOURCES EAST

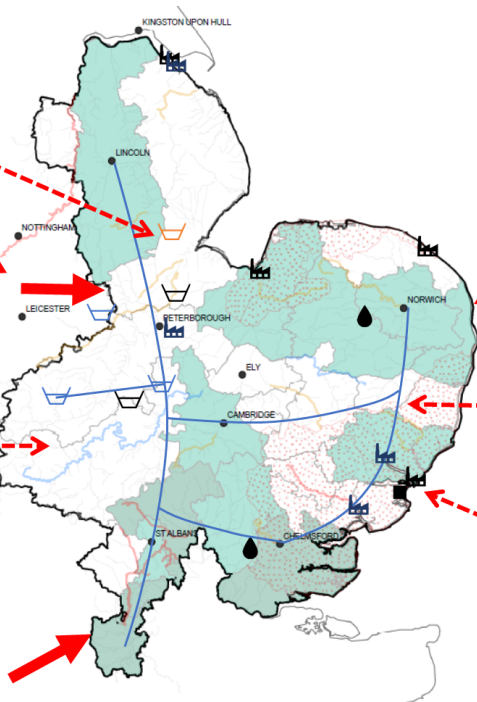
New reservoir  
storage capacity,  
capturing high  
winter flows

Treated water  
imports

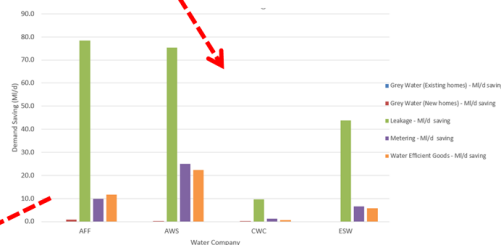


Groundwater Abstraction  
Limits

Reduced groundwater  
abstraction across the  
region



Demand management  
across the region



A network of strategic  
transfers, to share resources  
between companies and  
across sectors

Desalination and water re-use  
at key locations on the east  
coast

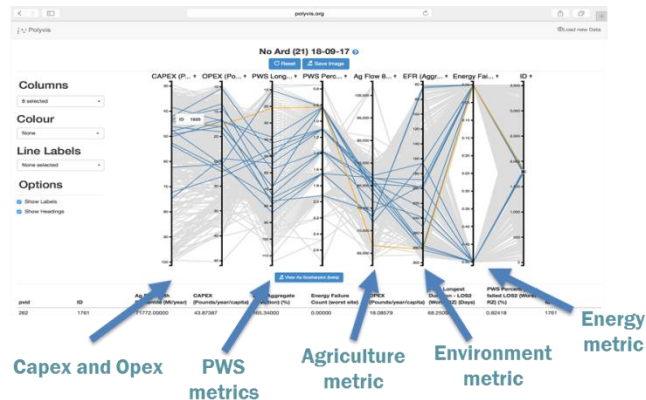
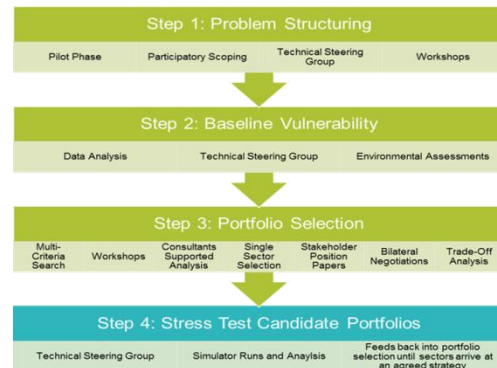
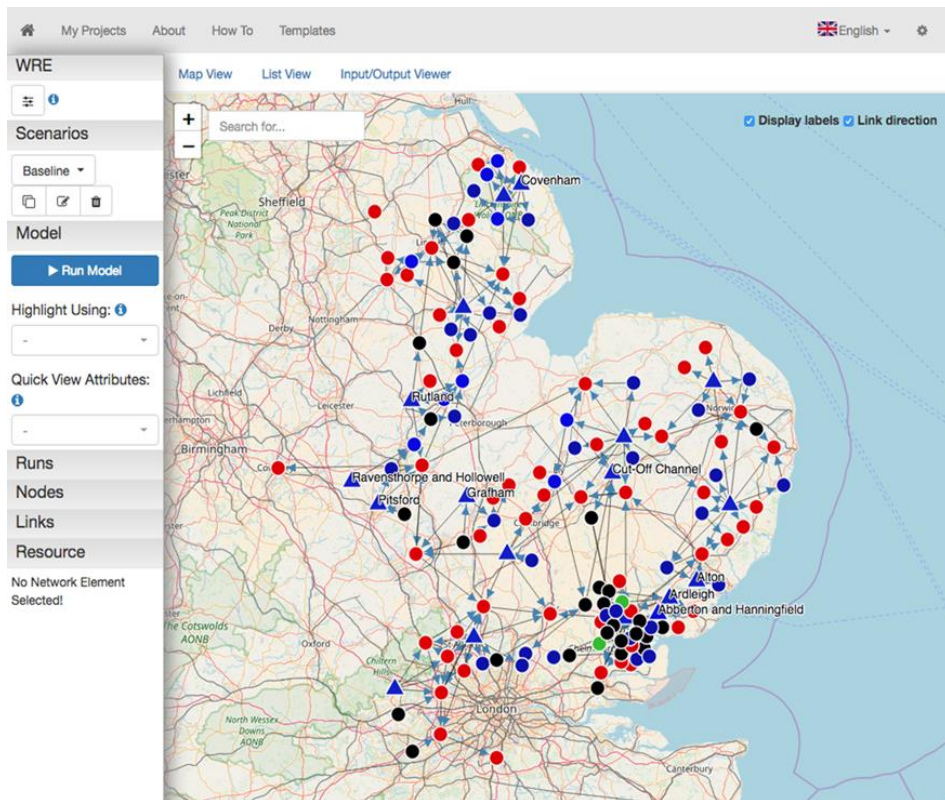
We have a process  
and the tools for  
successful multi-  
sector water  
resource planning  
but  
public water  
supply solutions  
dominate - work is  
in progress on  
more multi-sector  
options and  
trading

# Technical approach

## Multi-objective Robust Decision Making (MO-RDM)



WATER RESOURCES EAST

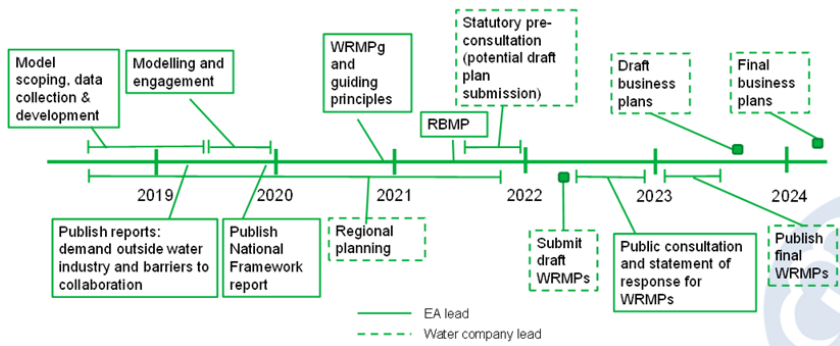


Find out more at [waterresourceeast.com](http://waterresourceeast.com)



# Water resources national planning framework

- **Draft WRE regional water resource management plan needed by August 2021**
  - **Final draft by August 2022**
- **Must include water needs of PWS and other sectors**
- **Work to finalise technical programme and funding is in progress**
- **Details will be presented to the Board in October for decision**



## MUST

Take account of the national framework and set out its contribution to the national need

Be reflected in WRMPs

Forecast supply and demand over at least 25 years and set out solutions to any deficits

Be a single plan with one preferred solution and set of options

Include the water needs of other sectors

Look beyond regional boundaries and use technical approaches compatible with other regions

Consider enhanced environmental improvements and demand management

Take a catchment based approach

Consider resilience benefits to events other than drought e.g floods

Open to market mechanisms

Take into account growth ambition

## National Planning Framework Requirements for regional plans

### SHOULD

Set out how the region will respond to drought and agree common scenarios for drought actions

Join up with drainage and wastewater management plans

Look ahead 50 years or more

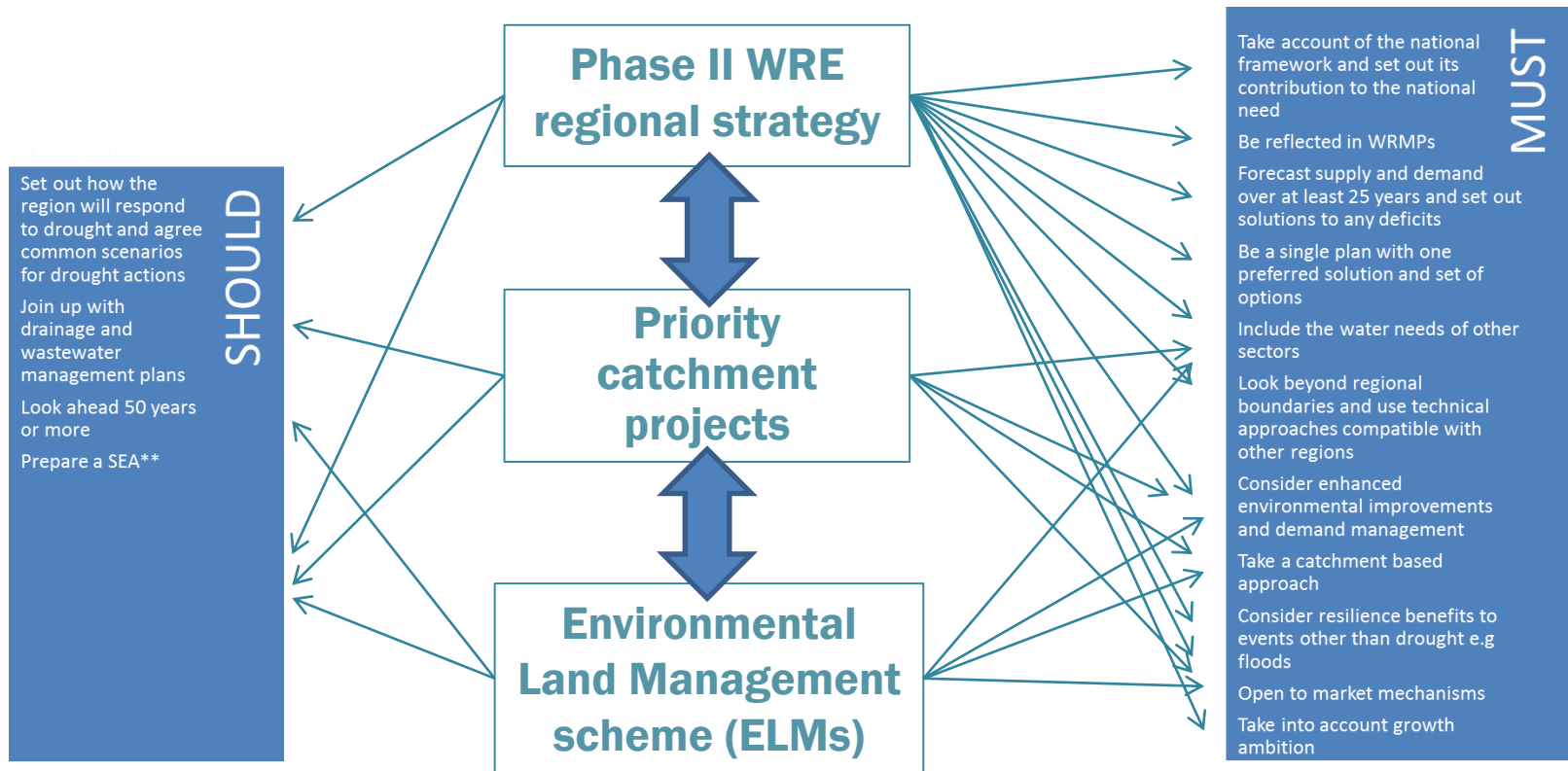
Prepare a SEA\*\*

### COULD

Be a full WRMP  
Be a full drought plan

# WRE programme elements

Meeting the needs of the national planning framework

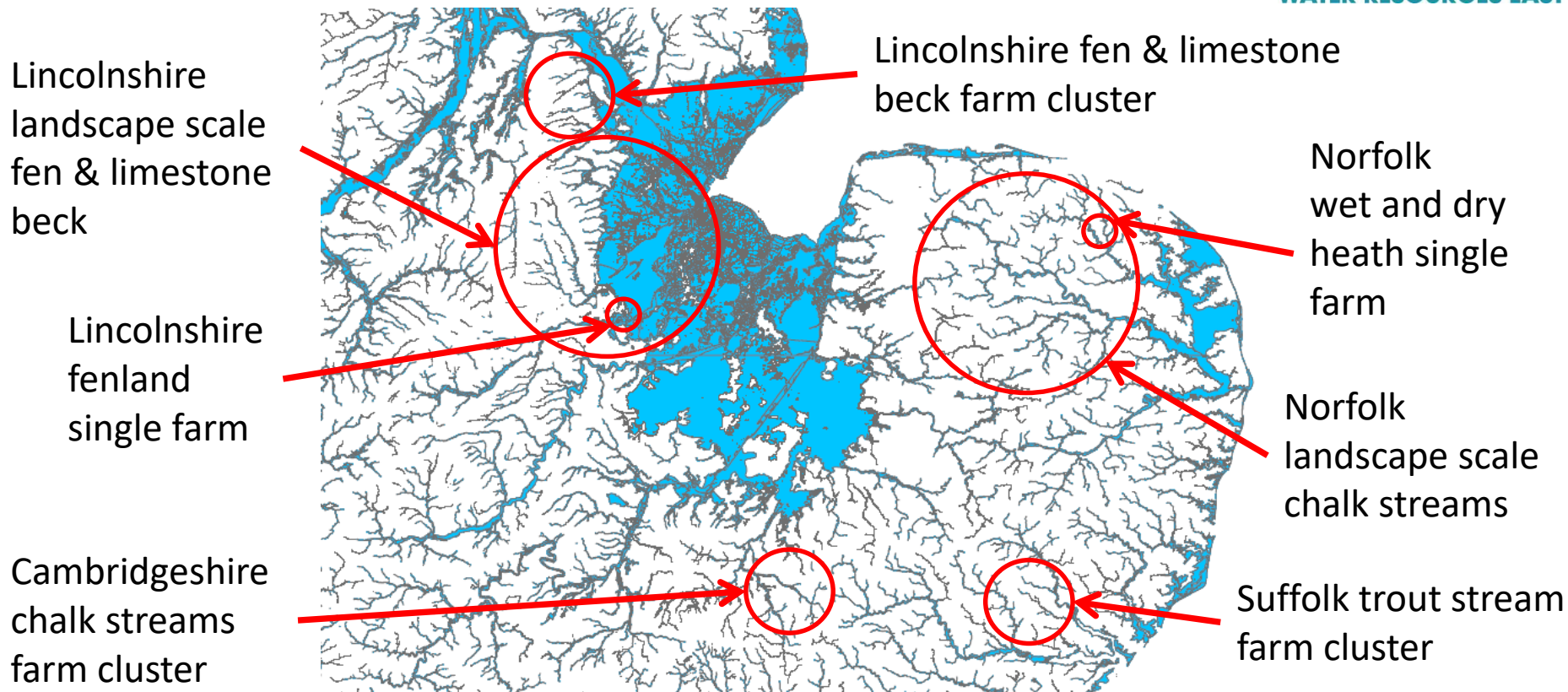


# ELM project distribution and type

Integrated land and water management



WATER RESOURCES EAST





# Proposed ELM objectives & approach

## Test different ways to deliver water related public goods

- Clean & plentiful water
- Thriving plants & wildlife
- Reduction in harm from natural hazards such as flooding & drought
- Enhanced beauty, heritage and engagement with the natural environment

## Test the market for water related private goods

- Pollution control
- Flood control
- Water storage & trading
- Drought risk mitigation

## General approach

- Farmer led partnerships with environmental NGOs, water companies, and others
- Seek to increase the resilience of the natural systems on which all abstractors depend



# Priority Catchment projects

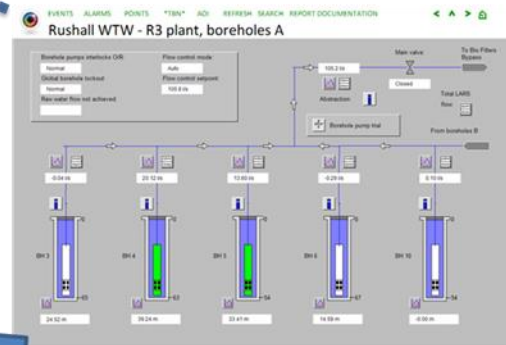
## General approach



Stage 1: Abstractors, regulators and others collaborate to develop a catchment plan. Use agreed priorities to define a series of catchment rules

Uses technical methods from WRE regional programme

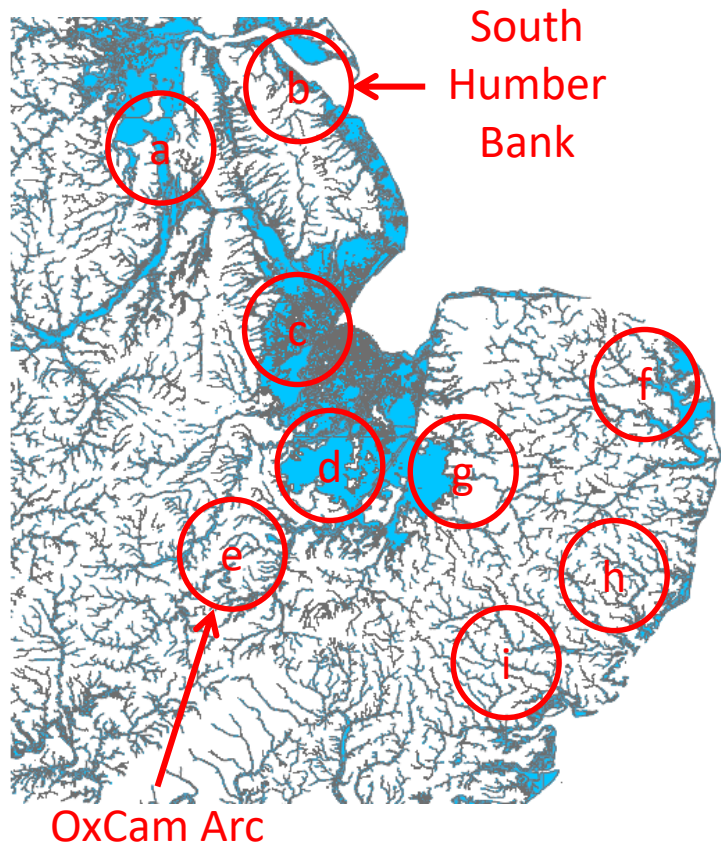
Stage 2: Build the instrumentation, monitoring and data management system



Stage 3: Using catchment rules and real-time monitoring data, allocate the available resources – includes water trading

Where shortages persist, plan the delivery of new assets

# Phase II WRE regional planning



## Approach

- **Phase II regional plan will be developed using same multi-sector trade-off approach as Phase I**
- **The non-PWS elements are being strengthened**
  - We are planning to map conservation priorities across the region and use these to coordinate input from eNGOs
  - We have set up a network of sub-regional planning groups to assess non-PWS issues in detail and develop a bigger & better portfolio of multi-sector options

## Key Planning Group Issues & Priorities

Planning Group	PWS	Energy	Agrifood	Manufacturing	Environment
a					
b					
c					
d					
e					
f					
g					
h					
i					

# Thank you.

## Any Questions?