

WRE Emerging regional plan update

East Anglian Planning and Biodiversity Webinar

27 April 2022



@WaterREast

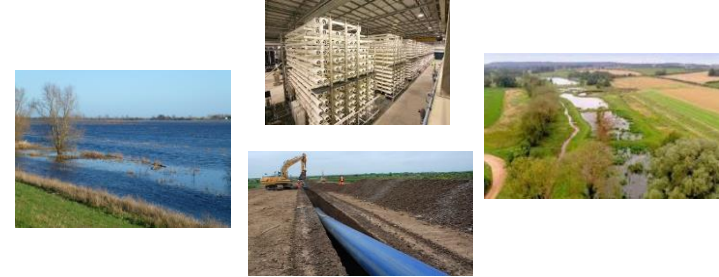


@Water Resources East

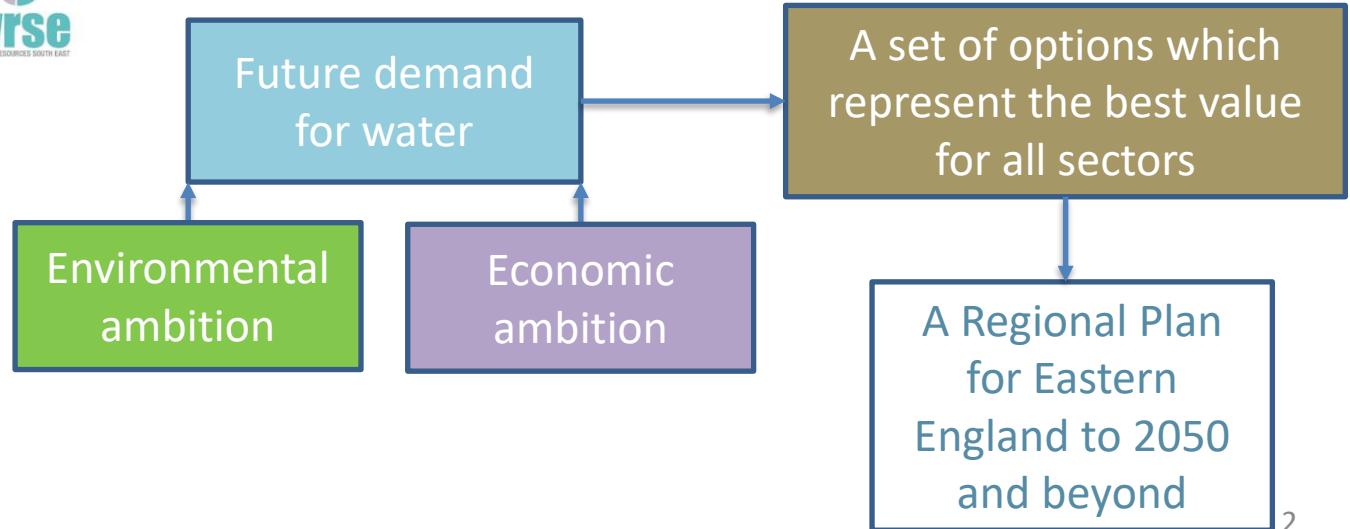
Regional water resources planning



WATER RESOURCES EAST



Meeting our Future Water Needs:
a National Framework for
Water Resources



Current Board Members




love every drop.
anglia water

ESSEX & SUFFOLK
WATER living water



Board of Directors:
Water Companies, agriculture, energy, the environment and regional development/Local Authorities




Greater Lincolnshire Local Enterprise Partnership

Lincolnshire COUNTY COUNCIL

Norfolk County Council

Suffolk Growth Programme Board

Suffolk County Council

Essex County Council



Emerging plan created with our members

17 Engagement Events

Regional:

81 people
65 organisations

Catchment level:

241 people
137 organisations

Six Board focus group sessions:

Agri-food
Environmental
Energy
Customer Insight
Internal Drainage Boards
Economic Development

Coming soon:

Public Water Supply

- 2x Board/Technical Delivery Group Planning Conferences
- 2x Strategic Advisory Group member training sessions
- 3x Regional Planning Conferences
- 4x Local Focus Catchment Workshops
- 6x Board Focus Group sessions
- New agriculture and energy technical focus groups being formed

Key points from the emerging plan

- There is a water crisis today, Eastern England is short of water now and if nothing changes that shortage will get worse
- Water efficiency and demand management across all sectors will be critical but not enough on their own
- Significant new infrastructure will be required, water companies are progressing with low regret actions first e.g. South Lincs and Fens reservoirs
- Further work is needed through to the final plan in autumn 2023 to understand water needs/desires at a local/catchment level

Eastern England is...



Driest region
in the UK



Seriously
water stressed



Highest forecast
growth outside London

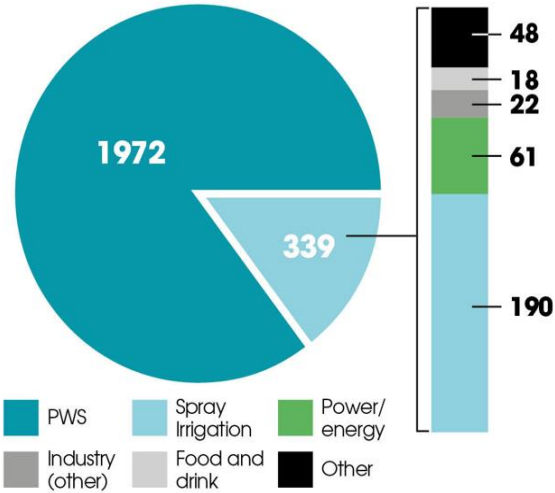


Leading agricultural
producer



Internationally important
environments

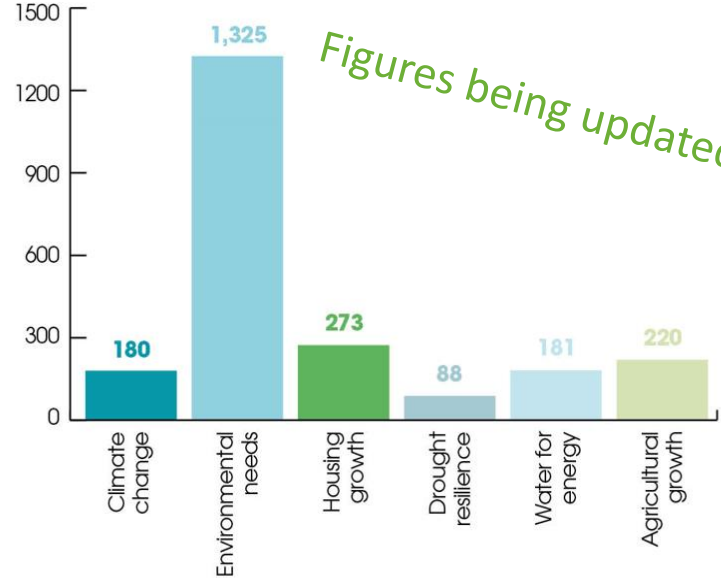
How water is used in Eastern England today



Average daily water
consumption in our
region is currently
estimated at

2,311
million litres

Potential additional water needs in 2050



Demand management options:

296 MI/D by 2050:

- Assumes 50% reduction in leakage
- Per Capita Consumption (PCC) of 120 litres /p /d
- More multi-sector and non-household work needed!



296 MI/d
Demand-side options

- Water efficiency measures
- Smart metering
- Leakage reduction

Legend

Development Features

- Yellow circle: Brackish Desalination
- Green triangle: Effluent Re-use
- Blue triangle: Increase WTW Capacity
- Green circle: Sea Water Desalination
- Black square: Tankering
- Orange circle: Proposed ASR Location
- Red circle: Potential locations for desalination barges
- Blue rectangle: New Reservoir

Existing Assets

- Black dot: Existing WTWPS/SR
- Orange circle: Power Station
- White rectangle: WRE Resource Zones



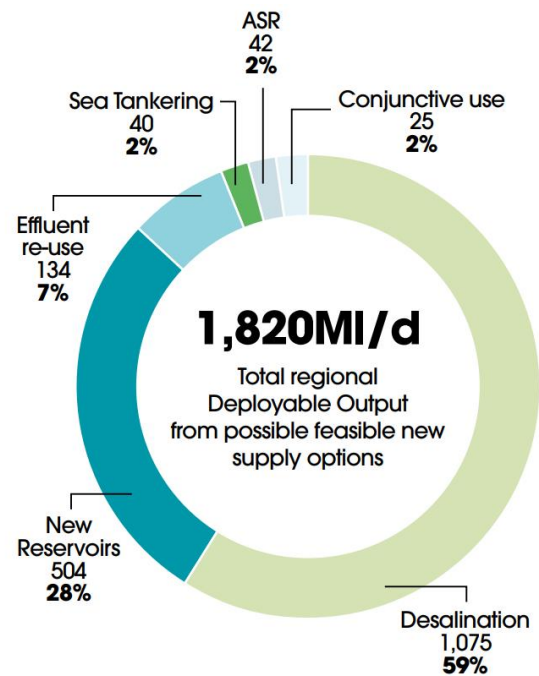
Supply options:



368 MI/d
Supply-side options

- Sherwood Sandstone ASR
- Essex desalination
- Essex re-use
- South Lincolnshire Reservoir
- Fens Reservoir

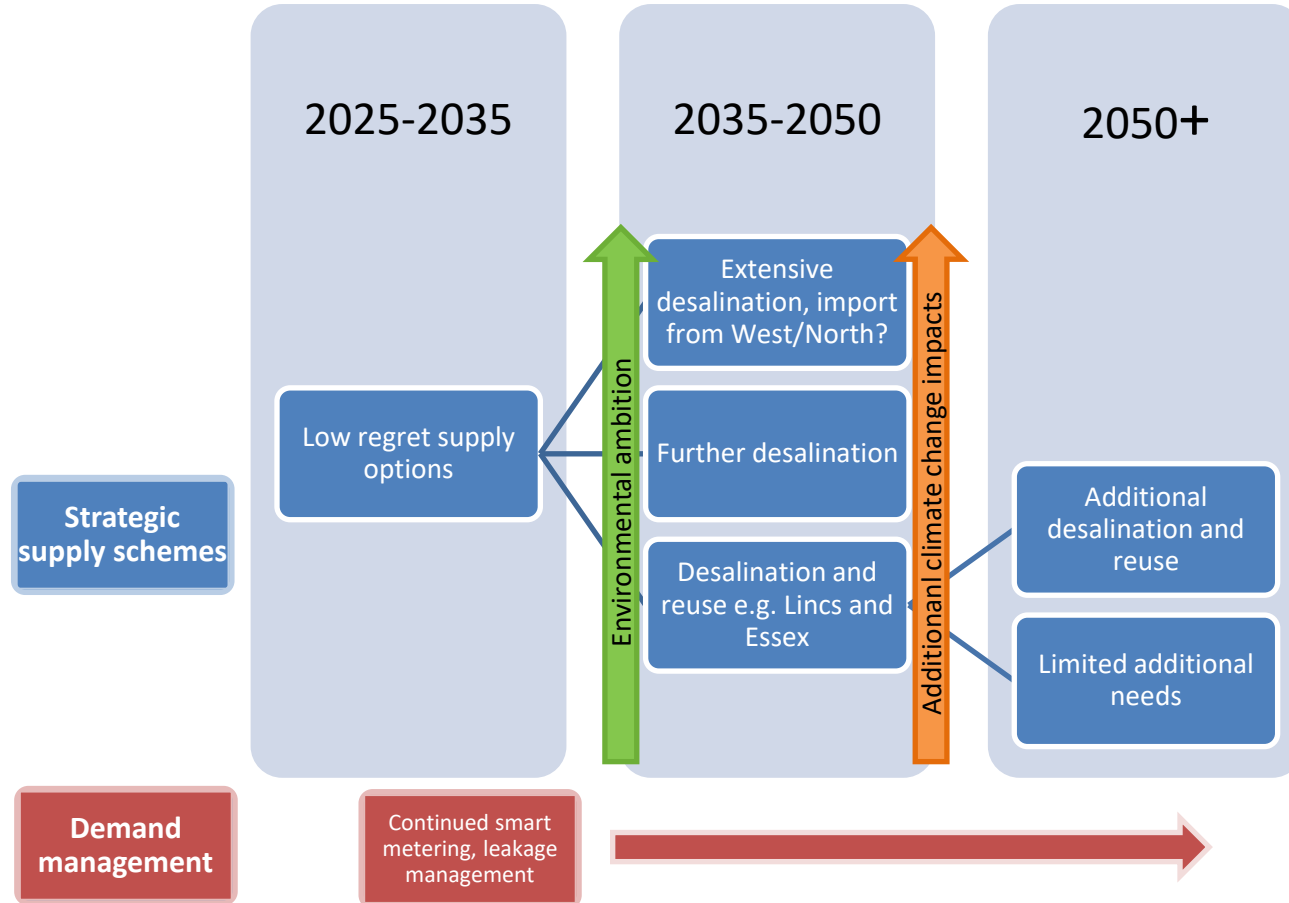
'Low regret' options



Transfers

- Orange line: Option Related Transfers
- Dashed line: Independent Transfers
- Blue dashed line: Anglian to Affinity Transfer
- Green arrow: Severn Trent Import
- Blue dashed line: Hanningfield to Aberton (existing)

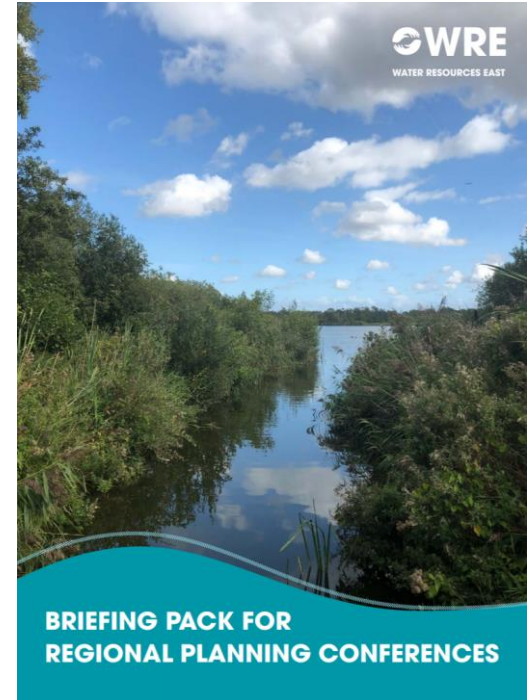
Taking an adaptive approach



We need to understand the risks + opportunities our plan poses to the environment

Our plan-making sets the framework for future WR related development, which could risk / enhance:

- Targets for improving water bodies
- Designated Habitats & Sites
- Limiting the spread of invasive species
- Natural capital and the benefits we take from this
- Enhancing biodiversity
- Wider environmental protections and ambitions, incl: Climate, Heritage, Soils, etc



Our approach to managing these wider environmental risks + opportunities

WRE is undertaking an **Integrated Environmental Assessment** This combines six approaches that take different approaches to identifying and managing risks to the environment:

- Water Framework Directive assessment
 - Habitats Regulation Assessment
 - Invasive Non-Native Species assessment
 - Natural Capital Approach via **Ecosystem Services**
 - **Biodiversity Net Gain assessment**
 - **Strategic Environmental Assessment**
- } Also consider
Benefit
/ Opportunity



How has this influenced our plan-making?

Integrated Environmental Assessment (IEA)

- **Screening** unconstrained options for significant environment risk
- **Informing** early design / routing of feasible options
- **Informing** 2021 Planning Conferences (Aug + Oct) about environmental risks associated with portfolios and specific supply options

Our IEA will continue to assess and inform the plan-making process through 2022 and will provide a set of reports on this alongside the consultation on our Draft Regional Plan.

WRE Regional Planning and Environment

- Environmental Destination
- Environmental Ambition

- Land management
- Natural capital restoration and enhancement

- *Environmental Destination: ‘The reductions needed to ensure abstraction is sustainable, now and in the future (2050).’*
- *Environmental Ambition: ‘The rate at which the reductions in abstraction (defined by the environmental destination) will be delivered.’*
- *Over-arching environmental ambition: ‘A broad, long-term vision for the environment in the WRE region that considers water and land-management holistically.’*

Scenarios for regional planning

Environmental Flow Indicator (EFI)

The proportion of natural flows that are required to support a healthy ecology. What we need to leave in the environment.

- **BAU**
- **Adapt**
- **BAU+**
- **Enhanced**

Each scenario analysed to what abstraction reduction needed to meet the EFI at Q95

Enhanced

- Aims to achieve the EFI everywhere
- Includes waterbodies that were classed as uneconomic in RBMPs
- Gives additional protection for chalks streams, protected sites and sensitive headwaters (above the EFI – CSMG targets)

BAU+

- Aims to achieve the EFI everywhere
- Includes waterbodies that were classed as uneconomic in RBMPs

Adapt

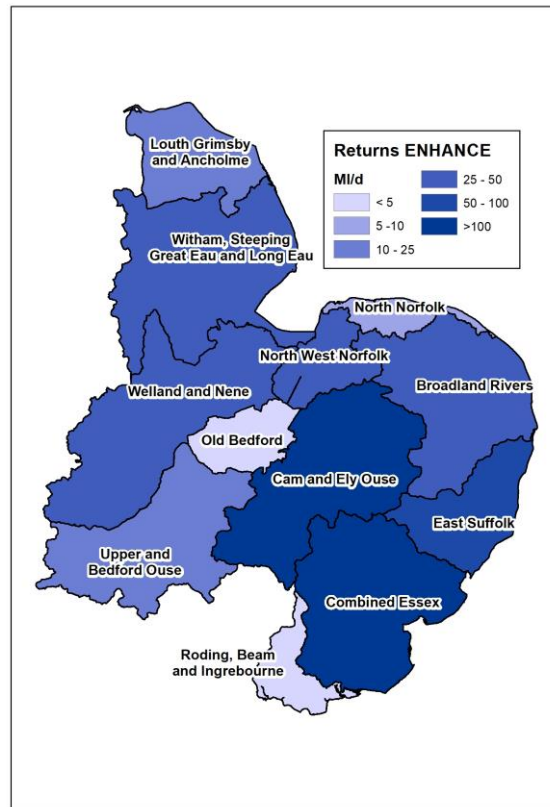
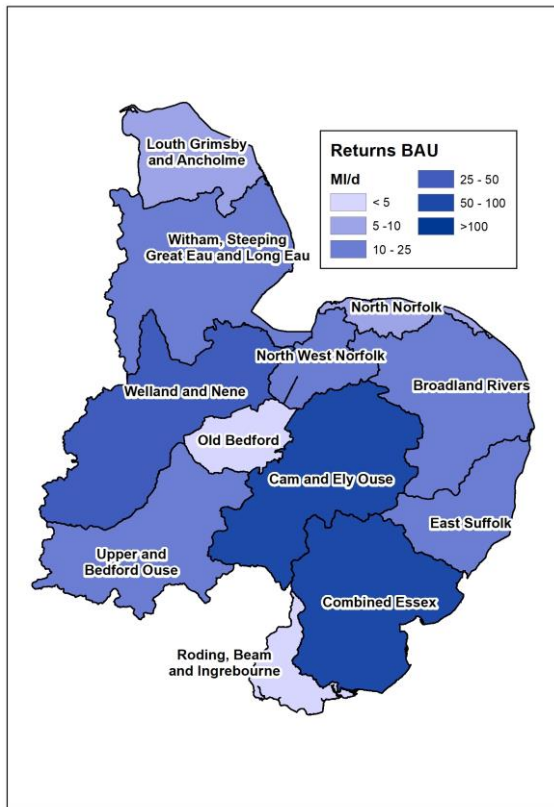
- Includes waterbodies that were classed as uneconomic in RBMPs
- Reduces recovery to EFI (by 25%) for waterbodies that are deemed Highly Modified Waterbodies (HMWBs) by RBMPs
- Also conveys uncertainty in flows requirements for SW abstractions near Estuaries - notably in Essex.
- Aims to achieve the EFI elsewhere

BAU

- Business as Usual
- Deemed to be the regulatory minimum under WFD.
- Screens **out** waterbodies that were classed as uneconomic in RBMPs.
- Aims to achieve the EFI elsewhere

More reductions / leaving more water in the environment

Returns to the environment for GW and SW



Public Water Supply (approx.)

	BAU	Enhanced
Groundwater	180 MI/d	290 MI/d
Surface Water	30 MI/d	190 MI/d
Total	210 MI/d	480 MI/d

Agriculture (approx.)

	BAU	Enhanced
Total	45 MI/d	70 MI/d

Prioritising and phasing to 2050

Once no-deterioration caps are implemented, how should further returns to the environment be prioritised?
How do we address local environment destination nuances ?

Suggestions...

- Chalk streams & sensitive headwaters
- Ensuring environmental resilience for designated / protected sites
- Priority catchments with high water stress

How...

Your help needed as planners and ecologists at a local level post draft plan stage in autumn– eg where are more wetlands needed? Where are the chalk streams and sensitive headwater priorities? Planned schemes/developments?

Tools and programmes also informing local environmental destination nuances:

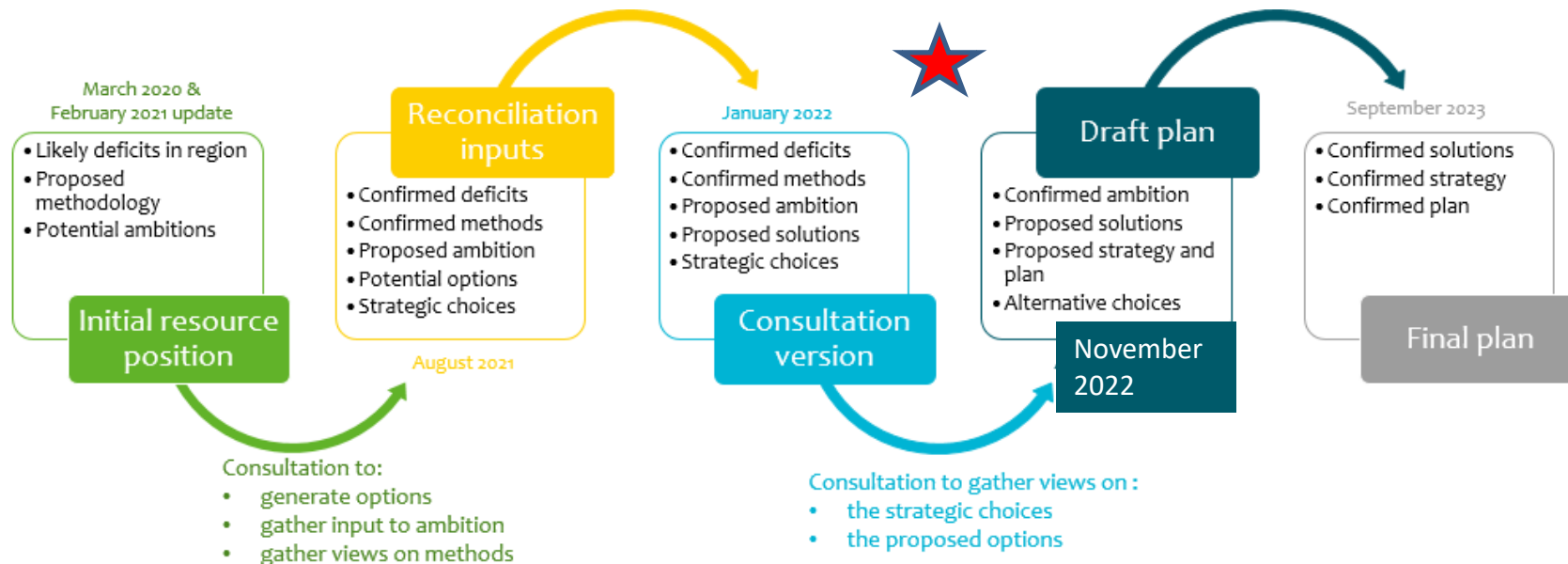
- Use of WRE's (SCP) natural capital plan
- WINEP investigations
- WRE projects – Water for Tomorrow, Norfolk Water Management Programme, Essex Water strategy, Chalk Streams protection project

Opportunities to inform further multi-funded partnerships and programmes

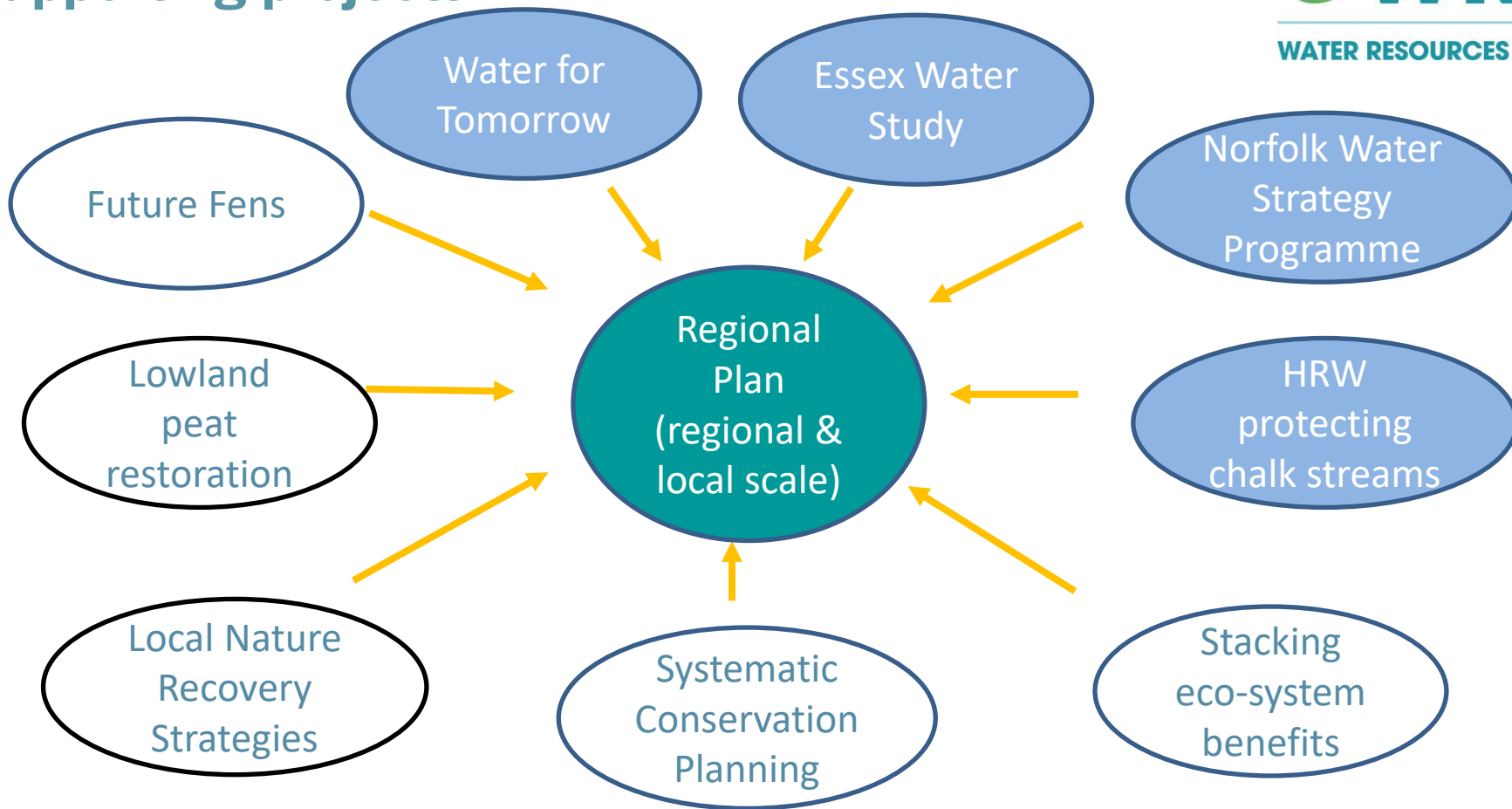
WRE's consultation summary responses – to the Emerging WR Plan

WRE	# responses received: 52
Range: local authorities/political, agri/landowners, energy, eNGO, water industry, commercial, CaBA/river groups, regulators, campaigners, members of the public	Type of responses: survey responses, brief emails and detailed responses
Main themes	
Welcome the multi-sector collaboration and engagement that WRE is undertaking, though with this recognising that difficult trade-offs will need to be made – no one group/sector will get 100% of what they want.	
Majority of respondents felt we had gained a clear initial view of the scale of water deficits in the region. Most mentioned the welcome focus on reducing abstraction on chalk streams and other sensitive water bodies/peatland and the significant environmental water deficit to be addressed but still concern which water bodies will be prioritised, under which environmental scenario and by when.	
Many felt we were taking the right approach to plugging the deficit with the low-regret options, however there are concerns with the low-carbon desalination technologies that are not proven in this country and more focus should be on mainstream grey water/rain harvesting and reuse.	
There is also a greater advocacy role for WRE in promoting: • strategic planning approaches in other areas, • greater consideration of water resources alongside other factors in holistic planning for the future of the region, • higher standards of sustainability and efficiency in water use and management. At the moment this plan feels like yet another strategy amongst a host of other strategies. There has been no apparent effort made to see how a Regional Water Strategy could reduce the number of strategies and plans and improve governance around water management.	
Concern that water for food production will take less of a priority than other sectors meaning more reliance on imported crops and plants. Particular concern around agri licence changes and food security impacts . There is no sector investment plan (agri made up of thousands of small businesses).	
Risk that demand management targets are not met – requires a significant programme of public education and information – joined up public awareness by different sectors, regulators and Government. Recognition of large demand management measures for the business sector yet to be explored collaboratively with water retailers.	
No detail yet in the regional water resources plan on the scheduling of options and adaptive pathways to address the water deficit – short and medium term (1-15 years) as well as long term (2050) and a lack of smaller supply options.	

Regional planning process timeline



Supporting projects



Norfolk Water Strategy Programme



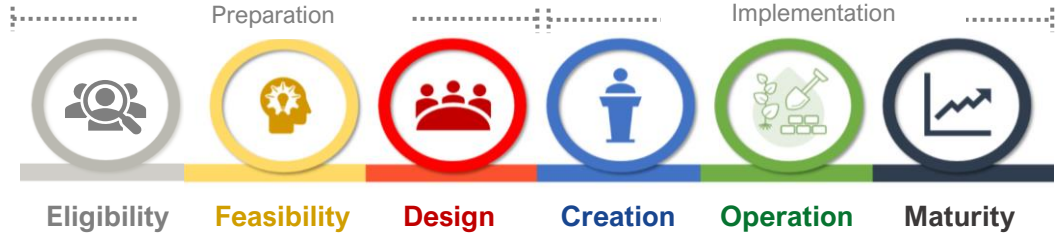
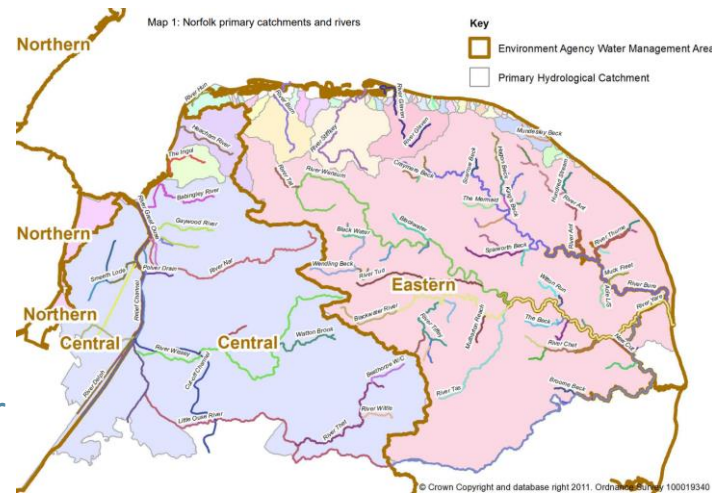
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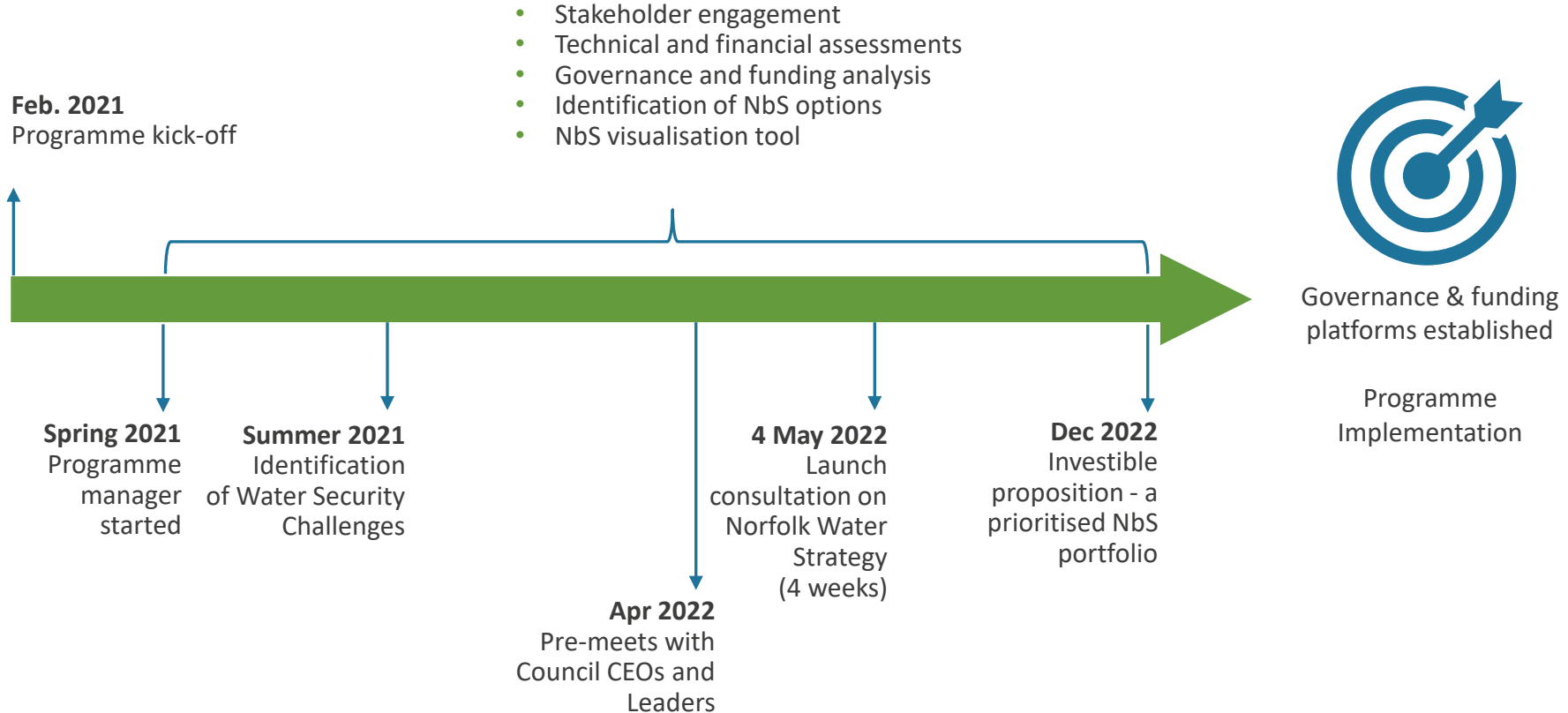
Norfolk Water Strategy Programme



Creating a long-term, coordinated, investable programme to attract large scale funding and financing into the use of nature based solutions for improving water security



Objectives and timeline



Governance & funding mechanisms

Collective Action Platform



A platform to coordinate efforts and develop NbS to tackle water security challenges in Norfolk

- Facilitate experience sharing & dissemination of best practice
- Collect and provide data
- Influence government policy and funding design
- Support project developers and achieve efficiency by aggregating applications and other processes
- Act as an incubator for new initiatives, particularly new investment vehicles

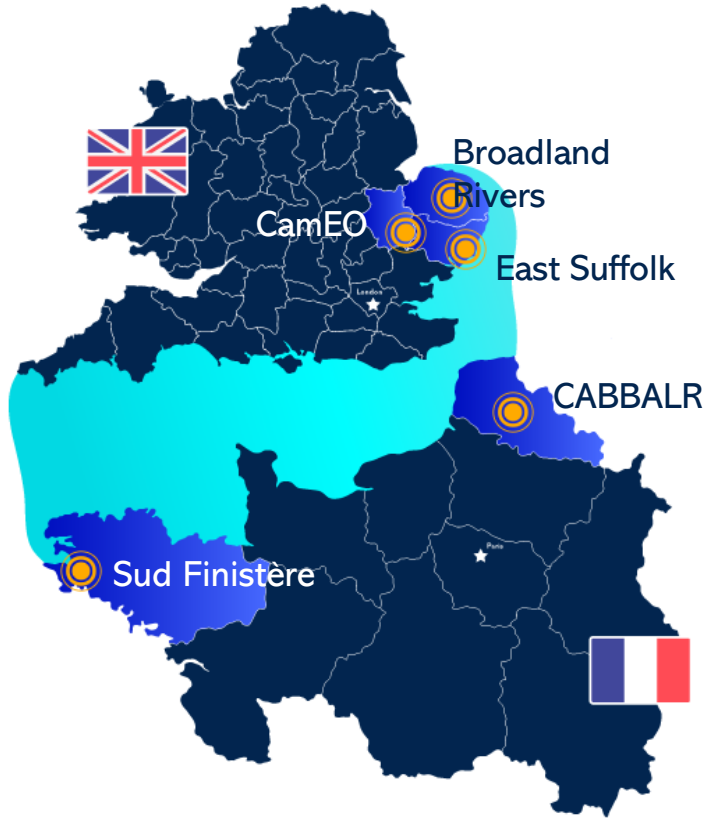
Norfolk Water Fund



A fund to leverage & coordinate funding for the delivery of specific NbS investment programmes

- Targeted fund to invest in NbS implementation with clear KPIs
- Invests in a prioritised package of NbS
- ROI analysis including co-benefits
- Enables mobilisation of pre-financing if revenue streams are clearly identified
- Contract out 'at-scale' delivery
- Reporting

Water for Tomorrow



Interreg 
EUROPEAN UNION

France (Channel
Manche) England

Water For Tomorrow

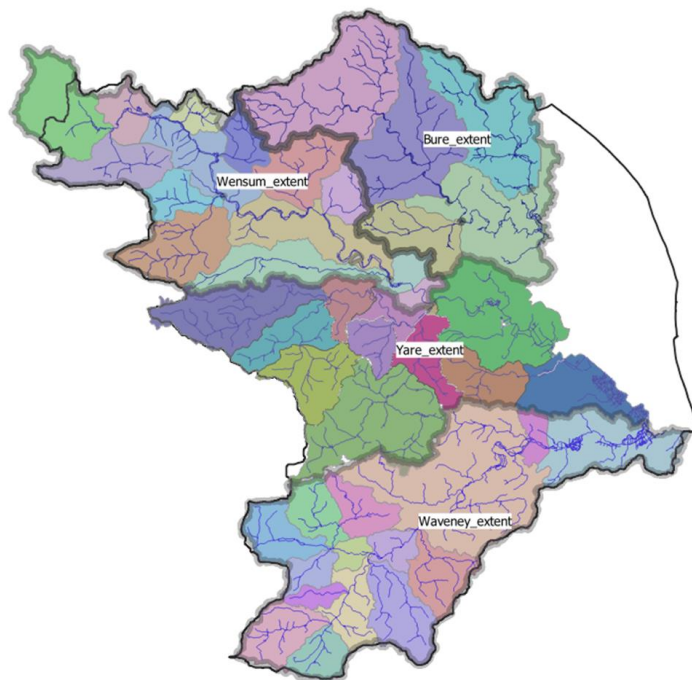
European Regional Development Fund

Delivery outcomes:

- Innovative environmental data collection and management systems to improve the management of water resources;
- Multi sector collaboration that supports the uptake and roll out of these systems enabling a transformation in the management of water resources across the Interreg France (Channel) England area.



WRE WfT technical activities



- Hydrological & Water Resources Modelling
- Options Development
- Environmental & Carbon Considerations
- Decision Support Modelling
- Will all feed into the new Catchment Management System – proposals under review

WfT Partner Activities

- Participatory model
- Monitoring
- Links with French Partners

HR Wallingford chalk stream protection project

- Looking at improving chalk stream resilience by focusing on better stewardship of land, and nature-based solutions as an addition/alternative to reducing abstraction
- Study in 3 pilot catchments : Lark, Stiffkey and Granta
- Once interventions have been chosen, the team will carry out modelling works to quantify the impact of each on the catchment's aquifers and streams
- Develop an innovative decision-making platform that can be used elsewhere to test the type and extent of a range of land-use interventions within chalk stream catchments, calculate the potential cost-benefits and help in decision-making



Essex Water Study

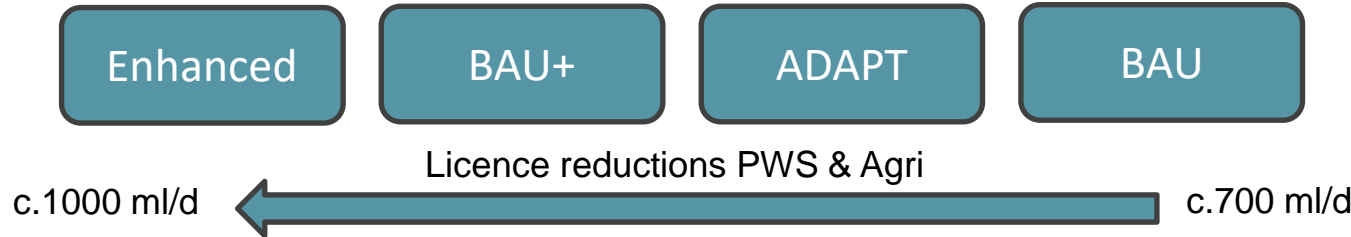
- Lucy has joined WRE on secondment from Essex County Council
- Initial scoping study of the 'water problem' in Essex, collating current/planned initiatives, projects, needs, etc
- Integrated approach with LNRs, Essex County Council and Climate Action Commission's commitments: eg Net Zero ambitions, natural green infrastructure 30% by 2030..



Thank you

Additional slides

Scenarios for Regional Planning



Groundwater abstraction needs to reduce by 50% - 60% to help restore environmental flows

Limitations & Uncertainty

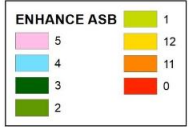
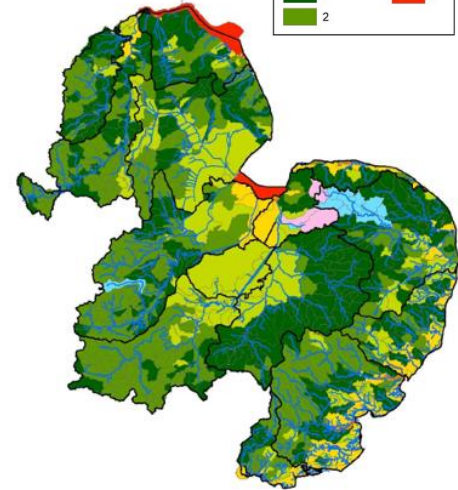
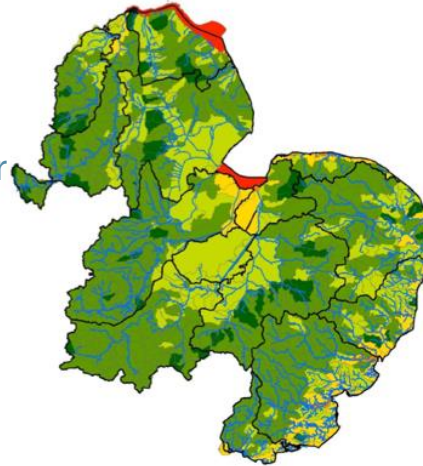
- Novel method to derive reductions – further investigations required in the future (WINEP – EA’s GW models)
- Required flows of estuaries and wetlands
- Abstraction that prevents groundwater flooding
- How climate change impacts will materialise
- Reductions for agriculture the resolution of the model and ability of agri to deliver change at scale - given PWS has a well defined regulatory framework, funding mechanisms and capabilities to move water
- **Cost-benefit?**

More work to look at the sequencing and timing of scenarios (Regional Economic Balance of Supply & Demand) - e.g. how quickly can we restore chalk streams?

Scenarios for Regional Planning

Scenarios to help understand:

- Worked with data provided by the Environment Agency
- The required environmental flows to support a healthy ecology
- Impacts of fully-licensed surface and groundwater abstraction on flows
- The necessary changes to achieve sustainable abstraction over the long-term
- All water companies in WRE, and other sectors (mostly agriculture)

**Enhanced****BAU+****ADAPT****BAU**