

WRE Strategic Advisory Group

Overview of the Draft Regional Water Resources Plan

WRE Team

29 July 2022



@WaterREast



@Water Resources East

Outline of today's session

- Welcome
- Summary of feedback on the Emerging Plan
- Draft Regional Water Resources Plan
 - Headline findings
 - Environmental destination
 - Best-value plan
 - Adaptive approach
 - Timetable to publication
- Feedback from June 2022 WRE survey of members and stakeholders
- Q & A

Summary of feedback on the Emerging Plan

Rachel Dyson

Summary on Emerging Plan responses – influencing Draft 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.

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 emerging 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.

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. 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.

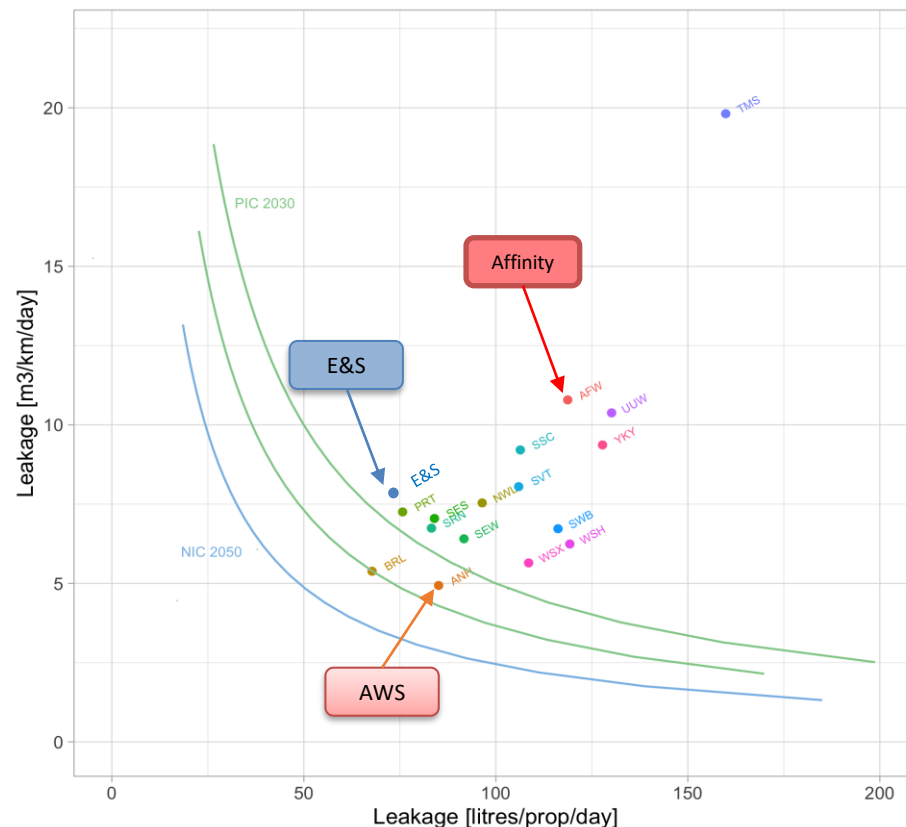
Draft Regional Water Resources Plan

Daniel Johns, Ben Fitzsimons

Headline message: urgent action needed by all sectors to tackle future water shortages

- The whole of WRE region is already classified as ‘seriously water stressed’
- 15% of water used for agri-food, industry and energy
 - Equivalent figure for WRSE is 2%
- Sensitive water-dependent habitats including Broads and chalk streams – a globally significant proportion
- Water companies won’t start with a supply-demand surplus in 2025
- Not much headroom on demand management
 - WRE water companies are already at or toward frontier position on leakage (see chart right)
- Uncertainty over forthcoming restrictions to licences for agriculture water abstractors

This means there needs to be urgent action by all sectors to tackle water resource pressures in Eastern England



‘Environmental Destination’ is by far the largest driver of future water resource requirements

Name	Scenario for 2050
Legal minimum ('BAU')	- Achieving flows to support 'Good' under Water Framework Directive - Excluding uneconomic waterbodies (RBMPs)
Extra protection ('BAU+')	- Achieving flows to support 'Good' under Water Framework Directive - Ensuring more protections for European Protected Sites (new framework for protected sites) - Excluding uneconomic waterbodies (RBMPs)
Enhanced protection ('Enhance')	- Achieving flows to support 'Good' under Water Framework Directive - Ensuring more protections for European Protected Sites (new framework for protected sites) - Including uneconomic waterbodies (RBMPs) - Enhanced protection for chalk streams, sensitive headwaters and SSSIs.

- Key set of scenarios to inform regional planning
- EA / Ofwat have been prescriptive in terms of key scenarios
- BAU+ used as 'core scenario' for regional reconciliation process

Main changes from the Emerging Plan position

- **Public water supply (PWS) demand forecast for 2025 updated**, reducing PWS average daily consumption forecast by 148 million litres. Other sector projections remain as per Emerging Plan.
- **Definition of the Environmental Destination scenarios clarified** with EA and Ofwat and projections updated
- **Technical Delivery Group (TDG*) members preferences sought on:**
 - **Choice of Environmental Destination scenarios to aim for:**
 - No clear consensus, therefore our plan will keep the most ambitious environmental scenario (Enhanced) in play by taking forward low regret options
 - Will investigate local requirements in more detail to inform next round of regional planning
 - Regional reconciliation process and ‘core pathway’ in our plan based on Extra Protection (BAU+)
 - **Out of WRE region transfers:**
 - TDG supported recommendation of no additional transfer to WRSE at this time.
 - Interim options between Anglian Water to Essex and Suffolk Water, and to Cambridge Water in advance of Fens reservoir, factored into WRE’s plan subject to final confirmation
- **Regional Reconciliation process subsequently supported WRE’s position** of no additional transfers out of region

*The TDG consists of cross-sector stakeholder representatives

How water is used today and how might that change



WATER RESOURCES EAST

2025

2050

Agricultural use could increase by 59 to 220MI/d

Unchecked PWS demand could increase by 67 MI/d or upwards of 100MI/d

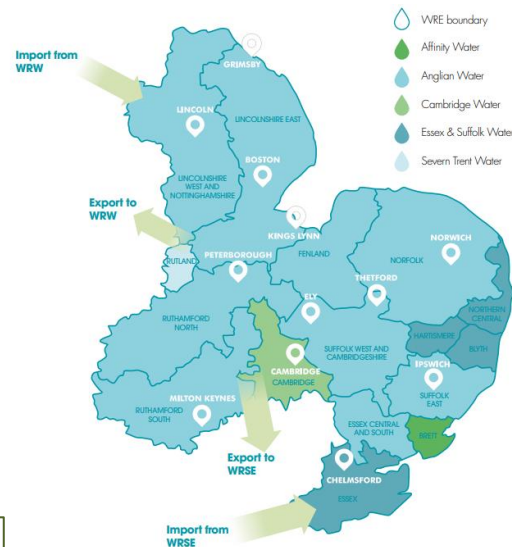
Future water needs for energy production are highly uncertain but could increase significantly to accommodate growth and decarbonisation (potentially up to 180MI/d increase)

As yet unquantified demands are anticipated – e.g. peat restoration, wetland creation

Current demand and future changes in demand are likely to be non-uniform across the water companies' water resource zones and regional catchments.

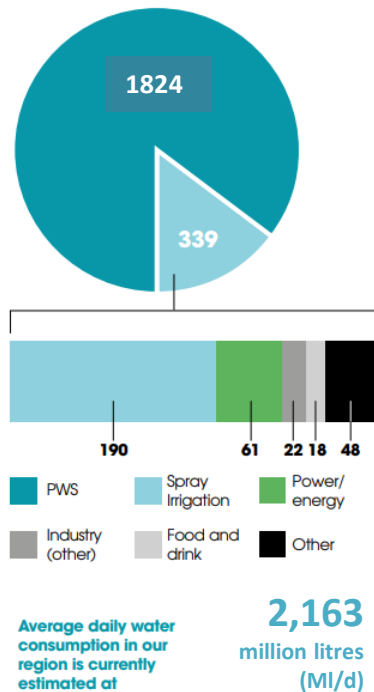
Three large catchments (Broadland Rivers, Cam and Ely Ouse and Combined Essex) contain nearly half the total licensed volume for spray irrigation in the WRE region.

37% of agricultural licensed abstraction is from groundwater resources. But this varies across catchments. In North Norfolk the figure is 74%.



PWS resources are already shared between water companies' Water Resource Zones and those of other regions.

We plan for no additional transfers out of WRE's region, but more within-region transfers



Note: PWS figure for demand has been updated and reflects 2025 forecast. But non PWS figures remain as in emerging plan.

Pressures & challenges: environment

Reducing abstraction to enhance the environment

(a longer term ambition)

- Capping licences to existing levels won't be enough to support good status within the aquatic environment.
- We will need to further reduce abstraction pressure on important freshwater environments in the region.
- This means changing the way abstractions are controlled to improve river flows, and finding alternative sources of water to protect headwaters, chalk streams and valuable wetlands and peatland restoration
- Changes to abstraction licences will need to take place alongside actions to tackle water quality and land management, to achieve the environmental improvements we want for the region.
- Both PWS and other abstracting sectors will need to explore the potential changes to their licences.

338MI/d
needed by
2050 for
PWS

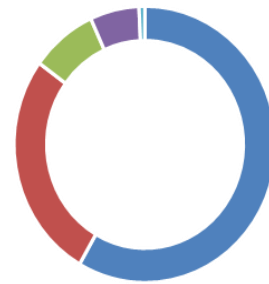
Up to 72MI/d
reduction
against
recent
average use
for other
sectors by
2050

Returns to environment - BAU+



■ PUBLIC WATER SUPPLY ■ AGRICULTURE
■ AMENITY / ENVIRONMENTAL ■ INDUSTRY
■ OTHER ■ POWER GENERATION

Licence reduction - BAU+



■ PUBLICWATERSUPPLY ■ AGRICULTURE
■ AMENITY / ENVIRONMENTAL ■ INDUSTRY
■ OTHER ■ POWER GENERATION

Extra Protection (BAU+): Achieve flows to support 'Good' WFD status where economic, plus support for European protected sites

Pressures & challenges: agri-food

- Current average water demand in the agri-food sector is approximately 10% of the total water demand
- Urgency of pressures are **all immediate** for the agri-food sector

Capping and reducing licences to protect the environment

(a regulatory requirement, uncertainty of timing for agri)

- Licences will be limited to historic rates of abstraction (peak use, average, or in some cases full withdrawal) where there's a risk to deterioration in the aquatic environment.
- Large parts of the sector are facing sustainability and 'no deterioration' cuts to abstraction licences in the next round of reviews due in 2024 – one crop cycle away.
- Awaiting certainty from the regulators regarding the timing and magnitude of action for the agri sector – URGENCY as need time to adapt.

Drought resilience

(definition of drought different for agri vs PWS)

- Drought impacts more immediate for the agri sector (1-year horizon. versus public water supply that are able to plan based on 3 dry winters).

Climate change & UK food security

(an uncertain, developing reduction in supply)

- Climate change will increase volatility in water scarcity (and seasonal surplus). More work needed to quantify this.
- Recent UK wildfires highlighted vulnerability of crops to climate change impacts.
- Increased water and storage needed for irrigation.
- Protection needed from rising sea levels.
- Food production underpins large parts of the regional economy
- UK food security heightened post-Brexit and current global conflicts

Abstraction licensing strategy area	Current common end date	Next common end date
Old Bedford including Middle Level	31 March 2025	31 March 2037
East Suffolk	31 March 2026	31 March 2038
Welland	31 March 2026	31 March 2038
Nene	31 March 2026	31 March 2041
Cam and Ely Ouse	31 March 2027	31 March 2039
Essex	31 March 2028	31 March 2040
Upper Ouse and Bedford Ouse	31 March 2028	31 March 2040
Steeping, Great Eau and Long Eau	31 March 2028	31 March 2040
Witham	31 March 2028	31 March 2040
North Norfolk	31 March 2029	31 March 2041
Broadland Rivers	31 March 2030	31 March 2042
North West Norfolk	31 March 2030	31 March 2042
Grimsby, Ancholme and Louth	31 March 2030	31 March 2042

- Catchment-specific challenges:
 - 72% (490) agri licences in the CAMEO catchment are time-limited licences (TLL)
 - 43% of licences in the East Suffolk area are TLL
 - The East Suffolk time limited licence review in 2026 and the various EA initiatives prior to this, will not recover sufficient resource to meet the WFD targets in all catchments. This is why WRE/the EA need to explore which water bodies will be more exposed to further licence clawback

Pressures & challenges: energy production

- Current fresh water demand in the energy/power sector is small compared to public water supply & agri-food
- Climate change will reduce the amount of water available for use by the energy sector
- Currently not affected by EA's capping and reducing abstractions....potential for this in future
- Projections highly uncertain at this stage – dependent on uptake of capture usage and storage (CCUS) and volumes/location of freshwater needed for hydrogen production

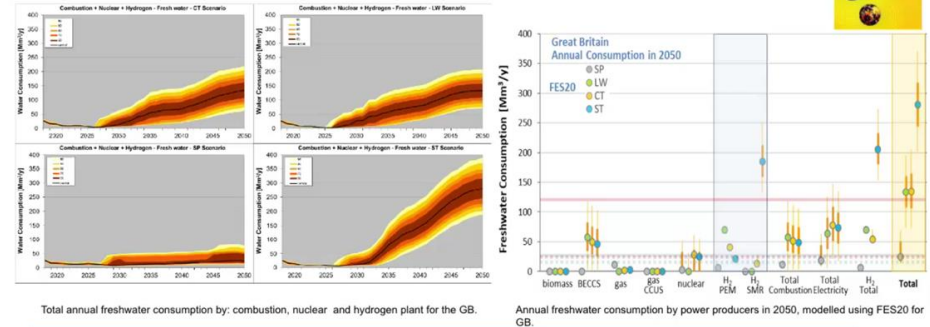
CCUS and Hydrogen clusters

UK government confirmed HyNet (Merseyside) and East Coast Clusters as Track-1 clusters for the mid-2020s, sharing £1bn investment.

Scottish cluster to be backup option.



Gasparino & Edwards (2021) stochastic modelling extracts – Great Britain freshwater consumption consequence of FES20 scenarios



Total annual freshwater consumption by: combustion, nuclear and hydrogen plant for the GB.

Annual freshwater consumption by power producers in 2050, modelled using FES20 for GB.

JEP modelling key messages:

- continuing fall in annual actual freshwater consumption through the early 2020s
- followed by increase in consumption and increasing uncertainty

Pressures & challenges: public water supply (PWS)

Capping licences to protecting the environment

(a regulatory requirement with some choice around timing for PWS)

- Licences will be limited to historic rates of abstraction (peak use, average, or in some cases full withdrawal) where there's a risk to deterioration in the aquatic environment.
- WRE's member water companies assume that licence caps will be accommodated between 2029 and 2035. **This will reduce PWS deployable output by 136MI/d by 2035.**

136MI/d
needed by
2035 for
PWS



Drought resilience

(a regulatory requirement with a choice on timing)

- Water companies currently plan to be resilient to a 1 in 200 year drought.
- By 2040 at the latest, water companies need to develop new sources that provide resilience to a 1 in 500 year drought.
- **Around 85 MI/d of new resource will be needed.**

85MI/d
needed by
2039 for
PWS



Climate change

(an uncertain, developing reduction in supply)

- Climate change will reduce the amount of water available to PWS at their existing sources.
- We can't be exactly sure how much so we need to be prepared.
- **PWS we estimate that available supply could reduce by 66MI/d by 2050.**

66MI/d
needed by
2050 for
PWS



Shorter-term
challenge

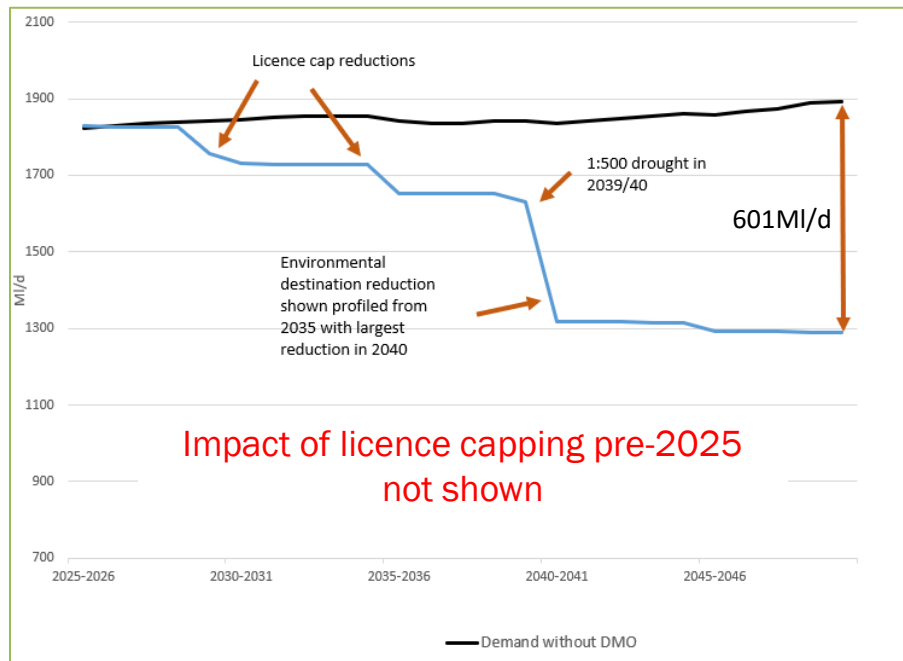
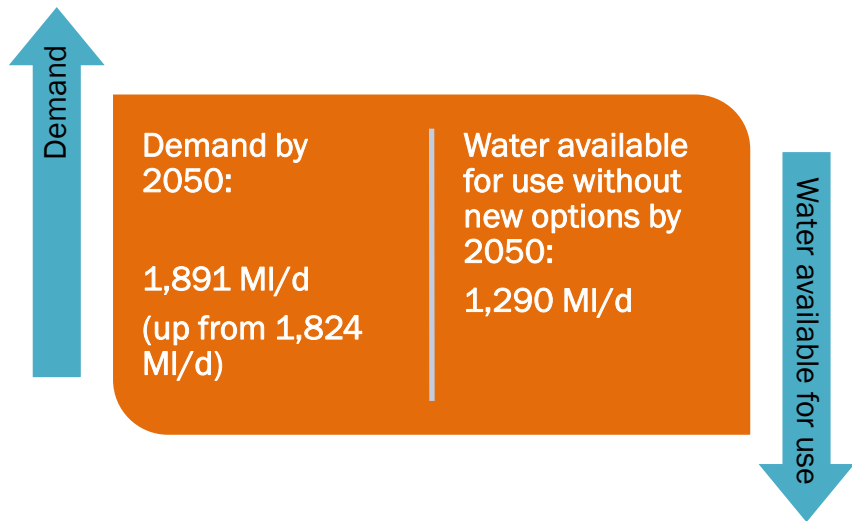
Plus population and economic growth

Longer-term
challenge

Pressures & challenges: growth

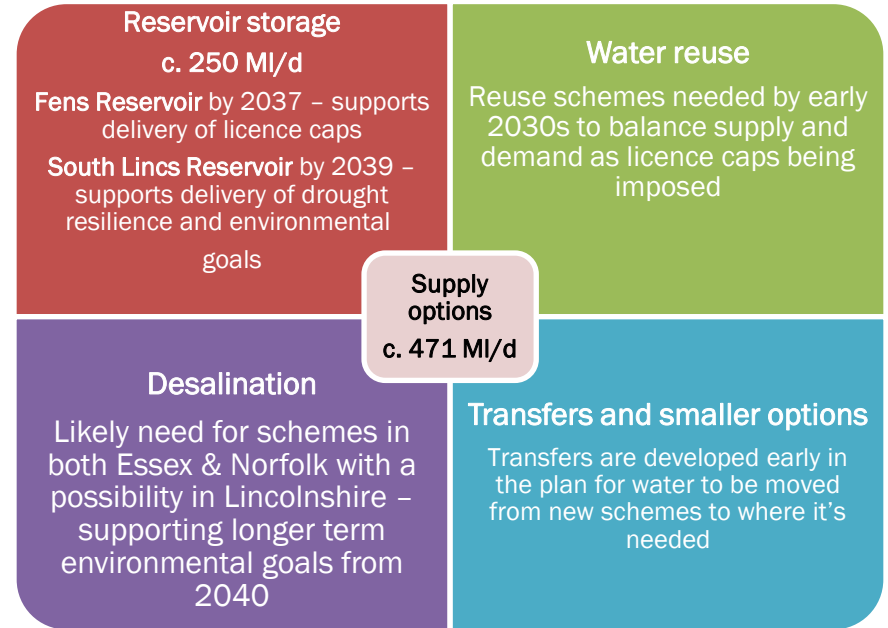
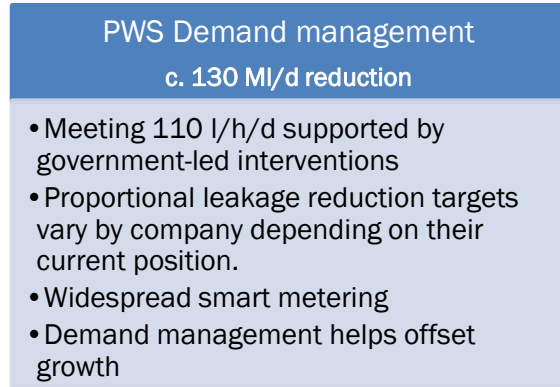
- Water is increasingly a constraint on economic growth in the east of England
- Nutrient neutrality has frozen development in large parts of Norfolk and this could be extended to other areas
- Water neutrality requirements could also spread from Sussex to fast-growing parts of the east
- Government policy to reduce impact of growth on water resources is progressing very slowly:
 - Letter to Local Planning Authorities to promote water efficiency not yet sent
 - Consultation overdue on design of mandatory water labels for white goods and bathroom products
 - Work on a 'Roadmap' to update Part G Building Regulations for water efficiency and water reuse also delayed
- Water companies have largely been able in the past to offset growth through demand management strategies
 - Both Anglian Water and Cambridge Water put less into supply now than they did 30 years ago despite housing and economic growth since then
 - But Essex & Suffolk having to decline requests for non-HH supplies

Impact of combined pressures: PWS (BAU+)



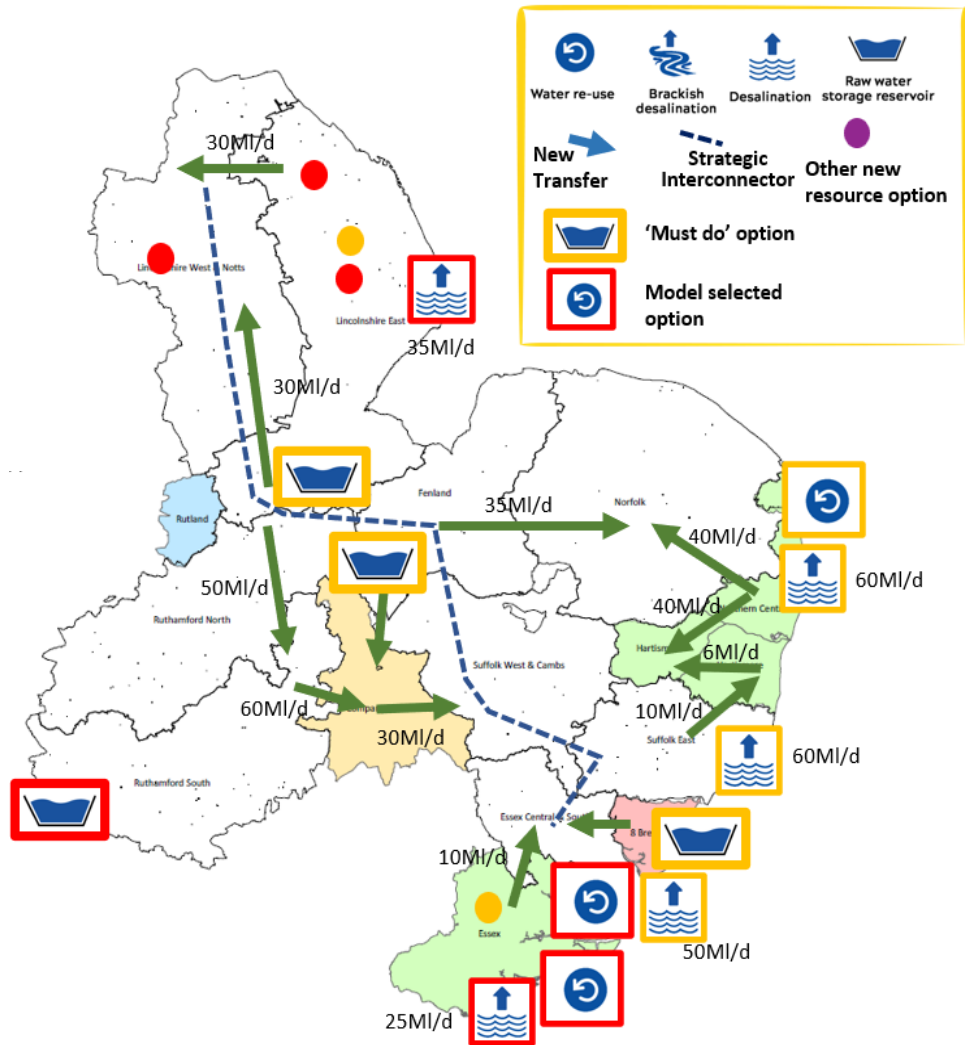
PWS deficit by 2050 grows to **601 MI/d**

WRE's Core Plan: PWS (BAU+)



Note: figures are subject to change as alignment with WRMPs takes place

WRE's Core Plan: PWS (BAU+)



Note: figures are subject to change as alignment with WRMPs takes place

WRE's Core Plan: PWS (BAU+)



WATER RESOURCES EAST

Implement **demand management options**:

- Smart metering
- Compulsory metering
- Water efficiency
- Further leakage reduction

Transfer schemes

implemented to move surplus water into areas with deficits and prepare for reservoirs.

South Lincolnshire Reservoir into supply to facilitate enhanced drought resilience and environmental destination.

Take an **adaptive approach** to further supply-side options. This will be determined by environmental destination WINEP investigations in AMP8.

2025 - 2029

2030 - 2034

2035 - 2039

2040 - 2044

2045 - 2050

Conduct **WINEP investigations** in AMP8 to determine environmental destination strategy. This will allow us to **tailor solutions** according to its needs.

Interim supply options for Suffolk, Essex and Cambridge to meet demand prior to new reservoirs coming online.

Fens Reservoir into supply to offset licence caps in the east of our region.

Scope for **desalination** to fulfil long-term environmental destination, and depending on success of demand-side measures including as a result of **government policy**

An independent national model, the **Water Resources of England and Wales water resources model**, has identified the need for and value of both the South Lincolnshire and Fens Reservoirs. It also shows that these solutions are resilient against uncertainty in supply and demand. This supports WRE's own modelling.



Higher ambition for the environment

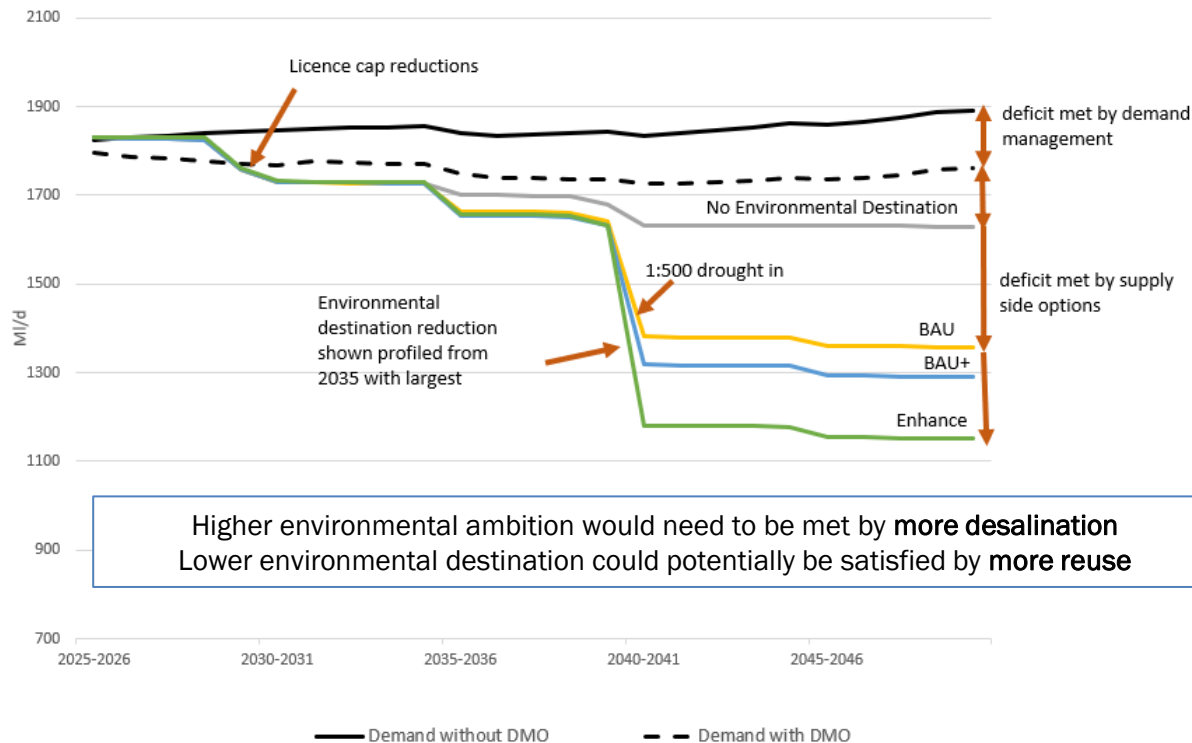
Reducing abstraction to enhance the environment

(a longer term ambition)

- We are also developing plans that could support greater ambition for the aquatic environment.
- High ambition means greater reductions to existing abstractions across sectors.
- Investigations and research between 2025 and 2030 will help us to understand how actions can be prioritised and the implications for new resources that will be needed.

477MI/d
needed by
2050 for
PWS

Up to
120MI/d
reduction
against
recent
average use
for other
sectors by
2050



To achieve enhanced environmental goals, designated wetland sites, chalk streams, sensitive headwaters and SSSIs would need to be protected by greater reductions in abstraction by all sectors. The 'Enhance' scenario also factors in achieving WFD target flows where action had previously been deemed uneconomic.

Integrated environmental assessment update

IEA = Package of Six Environmental Assessments
(SEA, HRA, WFD, INNS, NCA-ESS, BNG)

Work is on-going on assessments.

Initial IEA findings indicate draft Plan:

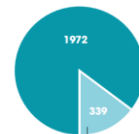
- Delivers net gain to biodiversity (BNG Tool Habitat Units) through the Reservoirs, others = losses (replaced +10%).
- Low Regret options unlikely to have sufficient detail / data to scientifically rule out likely significant effects to Natura 2000 sites + WFD waterbodies (individually / in-combination)
 - Alternative supply options also carry such risks.
 - Plan + IEA Report to set out approach to resolving such uncertainties, timing + decision points.
- Discussions ongoing re. best approach to build a valuable narrative around the carbon implications and opportunities for decarbonisation of options over the planning horizon



WRE
WATER RESOURCES EAST

-

Flagship projects of relevance



A map of East Angles showing potential absorption of the region into the East of England. The map includes labels for North West Norfolk, Old Bedford, Broadland, Cam and Ely Ouse, East Suffolk, and Combined Essex. A blue box with the text 'Potential absorption' is overlaid on the bottom right of the map.

The graph illustrates the impact of OMO on CO2 emissions. The 'without OMO' scenario shows a gradual decline, while the 'with OMO' scenario shows a more significant reduction, particularly after 2030. The 1,500 drought in 2035/40 is a key event in the OMO scenario.

Year	Scenario without OMO (Gt)	Scenario with OMO (Gt)
2005	20.5	20.5
2010	20.0	20.0
2020	19.5	19.5
2030	19.0	19.0
2035	18.8	18.5
2040	18.5	15.5

[illegible]

2026

**CAMS
common end
date**

Proposals for improving multi-sector planning

- Create **an appropriately funded approach to long-term multi-sector planning**
 - Government and regulators should work with water companies and non-PWS sectors to develop an integrated, appropriately funded water resources planning process for all water users
 - Government should make an early commitment to the next round of regional planning so the regional groups don't lose momentum
 - The five regional groups should work collectively on sector roadmaps for energy, agri, etc
 - Use regional modelling results to target public investment in agriculture water infrastructure
 - *E.g. capital grants for winter storage reservoirs as well as ELM schemes*
- **Clarity on non-PWS abstraction reductions**
 - Work with the EA to share their proposals for timing and extent of non-PWS licence capping ASAP
 - Create a national cross-sector forum to help navigate through licence reduction challenges (Defra, EA, NE, NFU, Water companies, Regional Groups)
 - Use the model of the Ant Valley Water Resources Strategy Group to foster a 'culture of confidence' amongst agriculture abstractors that the system works for the benefit of all
- **A single, integrated approach to planning for environmental improvement**
 - Create a framework for other sectors to benefit from WINEP investigations in AMP8
 - Create a single approach to determine returns to the environment for all sectors
 - Resolve whether 'Enhance' should represent the legal minimum due to CMSG requirements for SSSIs
 - Support regional groups to understand water needed to restore lowland peat

Timetable to publication

Rachel Dyson

WRE's Draft Regional Plan- timetable to publication

1

Feb, March & May 2022 Planning Conferences

Technical Delivery Group planning conference

- ❖ Agree Env Dest, transfer position & low regret options to take to the WRE Board/regional reconciliation process

2

April 2022 Inter-regional reconciliation for Draft Plan position

3

April, June, July 2022

WRE cross-sector Board meetings

- ❖ Consolidate and review all feedback to date
- ❖ Updates on regional planning

4

29 July 2022 WRE SAG meeting

- ❖ Update members and stakeholders on the emerging Draft Plan position

7

14 November 2022

WRE Draft Regional Plan & WRMP24s

- ❖ All plans published
- ❖ Formal consultation commences (14 weeks)
- ❖ Consultation webinar dates TBC (including SAG)

6

11 October 2022

WRE Board meeting

- ❖ Approval of full WRE Draft Plan and supporting reports for design & publication

5

3 October 2022

Water Resource Management Plans 2024 (WRMP24s)

- ❖ Water companies submit their individual WRMPs to the EA
- ❖ WRE's data and main draft plan available to regulators

8

November 2022 – September 2023

Further engagement activity yet to be developed following draft plan publication

9

September 2023

WRE Final Regional Plan

- ❖ Publication of Final Regional Plan

Stakeholder feedback exercise

Daniel Johns

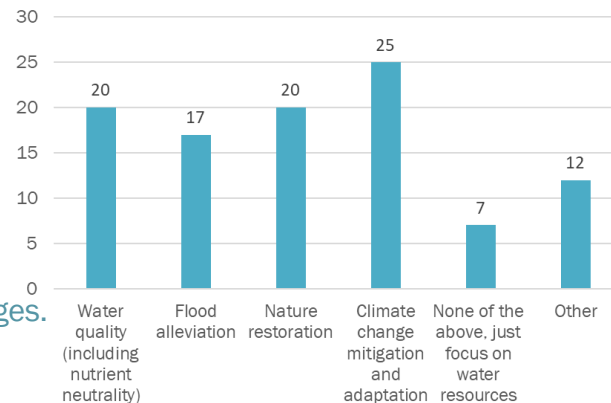
Stakeholder feedback exercise



WATER RESOURCES EAST

- We commissioned a short survey of our members and wider stakeholders in June, receiving 40 replies (20% response rate).
- The survey found strong support for WRE extending its role into water and environmental management, and climate change mitigation/adaptation. This led to almost half of respondents suggesting our 'vision' is no longer fit for purpose because it centres on water resources.
- Respondents also wanted to see:
 - **Greater independence** from water companies
 - **More emphasis on agriculture** and other water users to strengthen funding and governance for multi-sector planning.
 - **Promoting water efficiency and local water reuse** as well as strategic supply-side options.
 - **WRE having a more prominent voice in the region** to highlight water-related challenges.
 - **And to lobby government more actively** for policy and funding support.
- **Feedback also included:**
 - **A sense that constrained team resources and funding is limiting what we can do.** Our limited capacity appears to be visible to stakeholders and is affecting our reputation.
 - **WRE being successful in bringing people together but not yet achieving its aims.**
 - **A need for greater urgency**, to get on and deliver.

As well as focusing on water resources, should WRE's mission also focus on:



Thank you!