

Planning future water resources

Lee Dance, Head of Water Resources

14 February 2022



Pure know_how

Agenda

About us

Water resource planning

2019 Water Resources Management Plan

Developing the emerging regional plan

Consultation and next steps



About us

We supply fresh, clean drinking water to **2.2 million** customers

On average, we treat and pump **520 million litres*** to customers each day

Each of our customers use an average of **150 litres** a day

The average daily household bill is **59p***

We operate **88 treatment works**

Deliver water 24/7 through **9,000 miles** of pipe

Manage **33 sites** of Special Scientific Interest

Undertake **500,000** water quality tests each year

*2020/21 figures

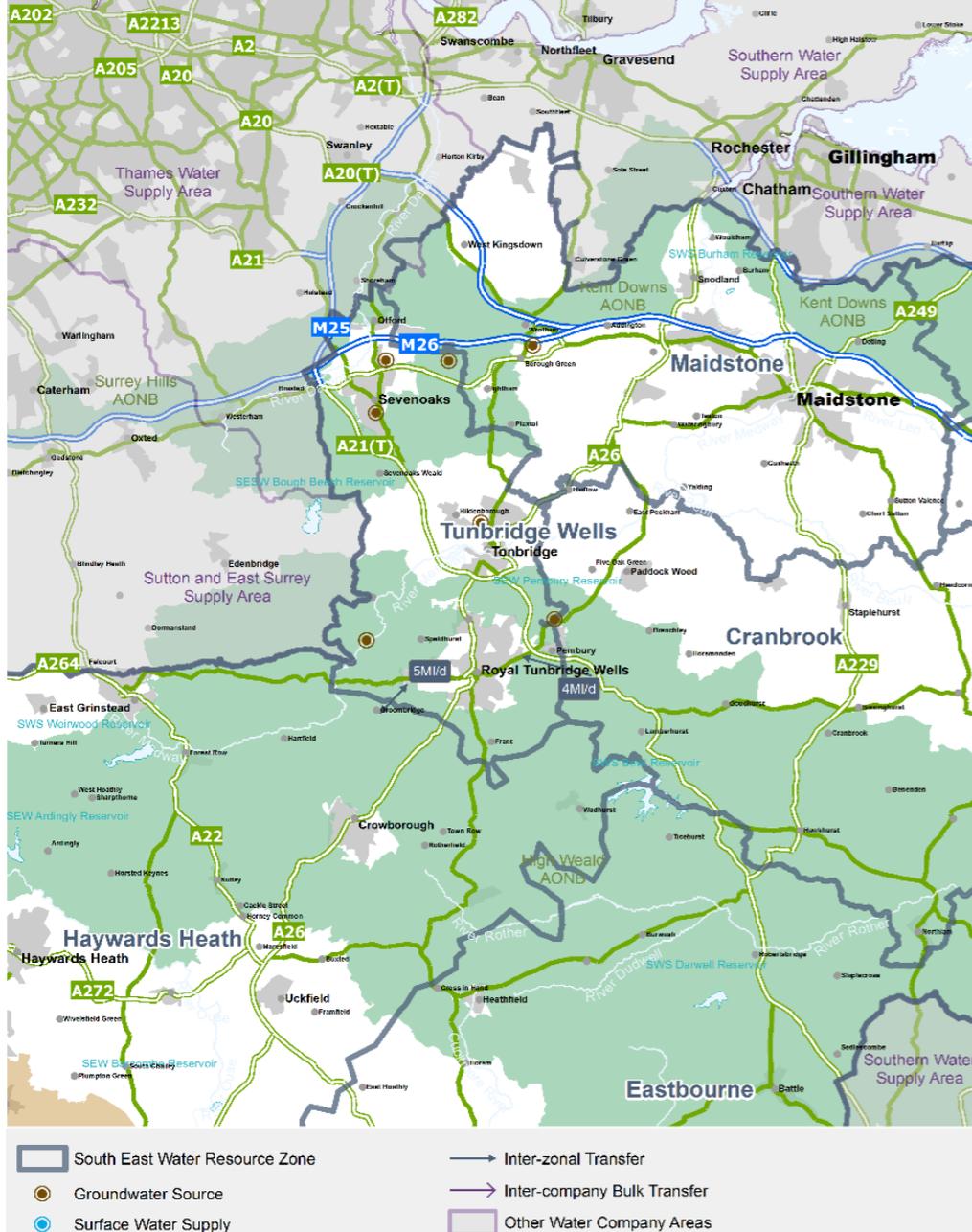
Our purpose

To provide today's public water service and create tomorrow's water supply solutions, fairly and responsibly, working with others to help society and the environment to thrive.



Water resources in Sevenoaks and Tunbridge Wells area

Figure to be checked



- Average daily demand is approximately **40.2 million litres of water a day**
- No surface water supplies
- **100 per cent** of water is supplied by seven groundwater sources
- Have the ability to pump water in from Sussex and elsewhere in Kent

About water resource planning

Every five years we create a water resources management plan.

It looks at how we will keep customers taps running into the future while protecting and enhancing the environment and also reducing impacts on customer bills.

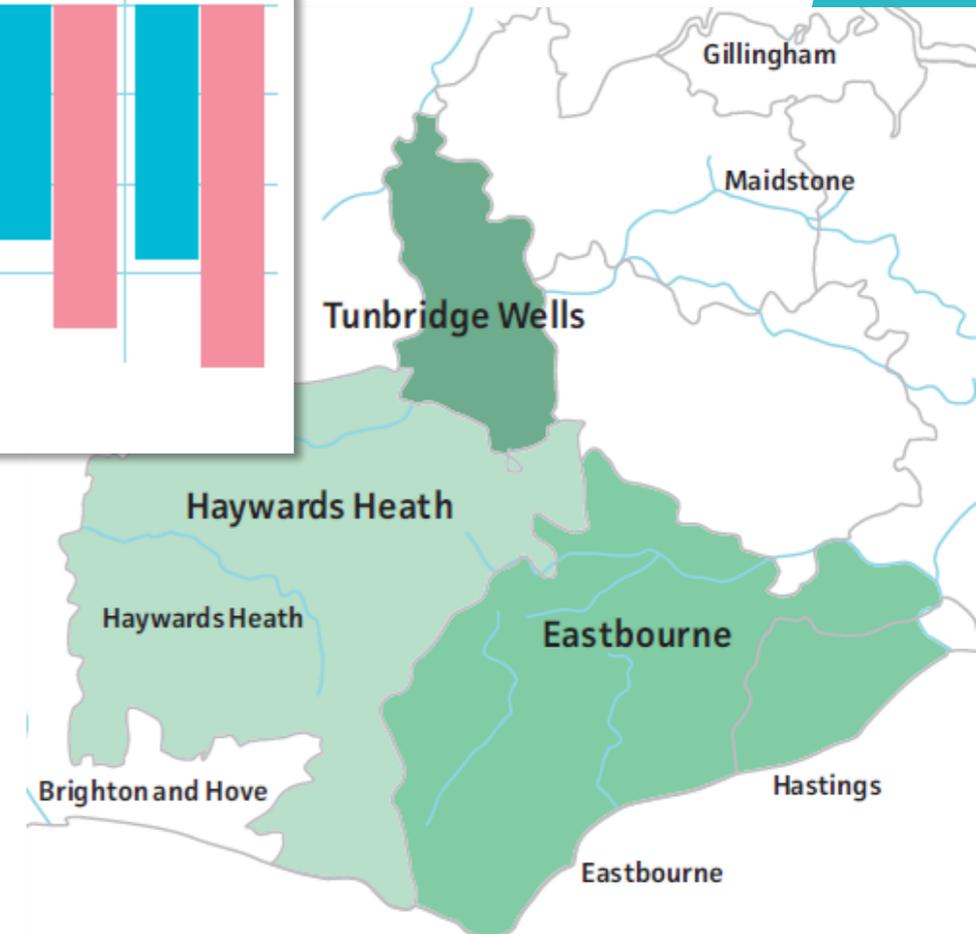
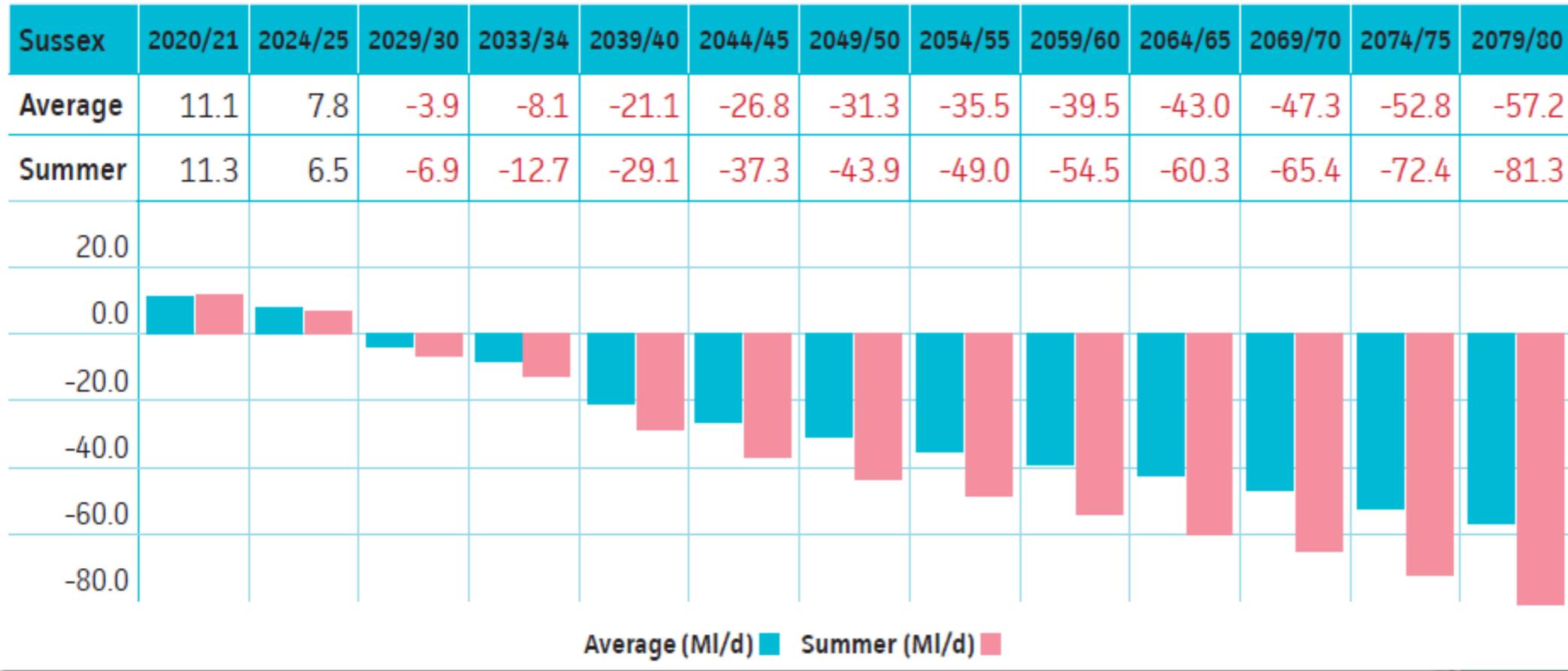
Our latest plan was published in 2019 and looks forward to 2080.

The plan is developed with input from customers, communities, other water providers and stakeholders.

Challenges	Opportunities
Future population and housing growth	Delivering a plan that is affordable
Operating in an area of severe water stress	Sharing resources with neighbouring companies
Uncertainty of climate change impacts	Ensuring environmental resilience

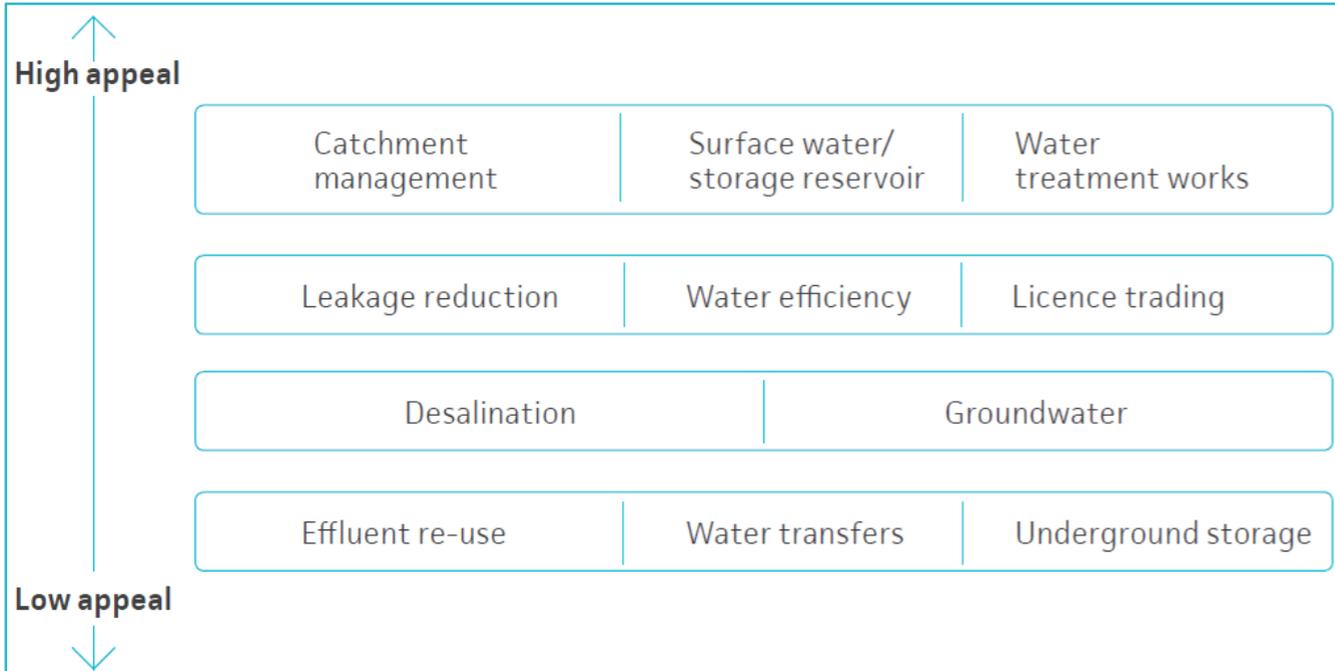


The 2019 water resources management plan



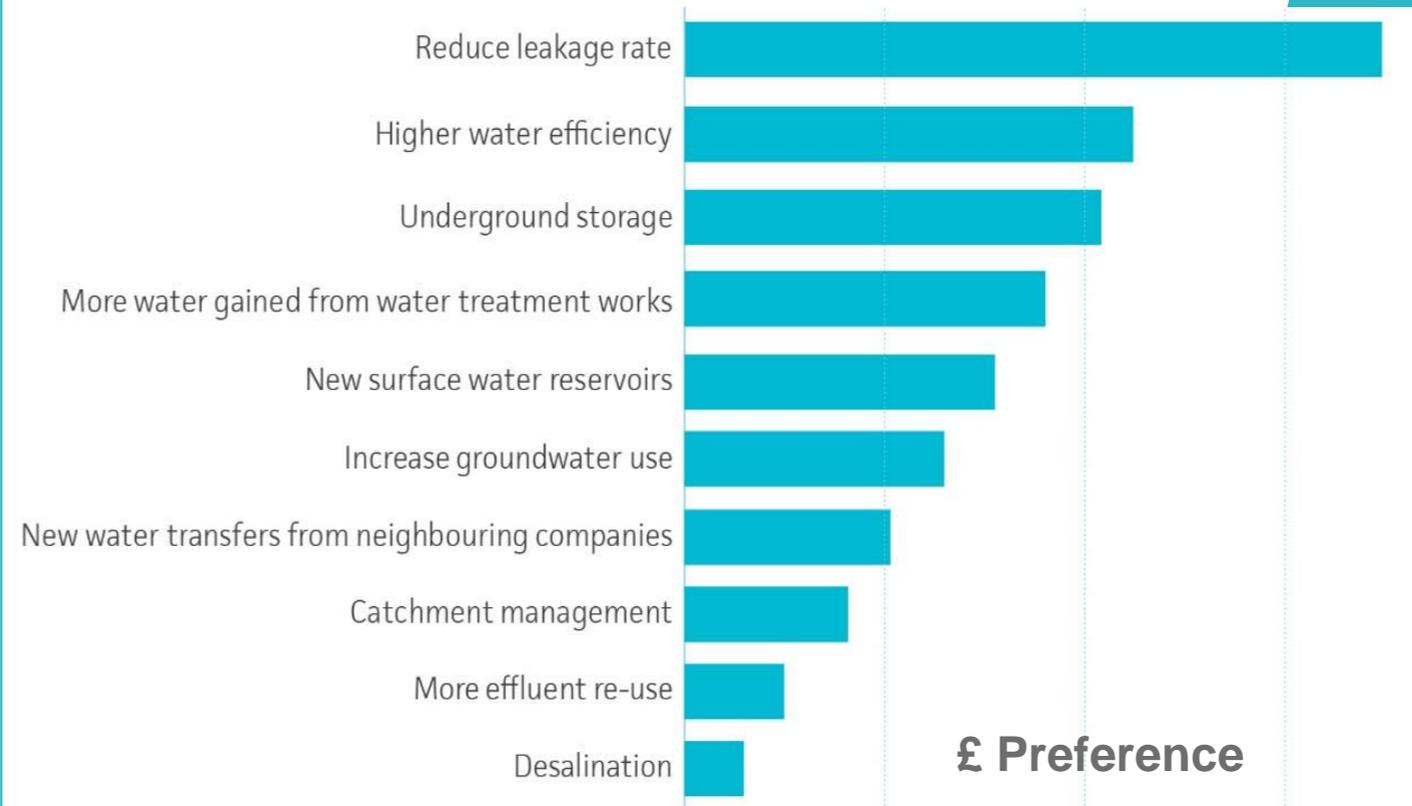
The 2019 water resources management plan

Extensive customer and stakeholder research goes into the plan. Customer research echoed stakeholder views.



The table above shows customers most favoured options driven by positive environmental impact and an extension of current South East Water activity.

The graph below shows which options customers would prefer to pay for.

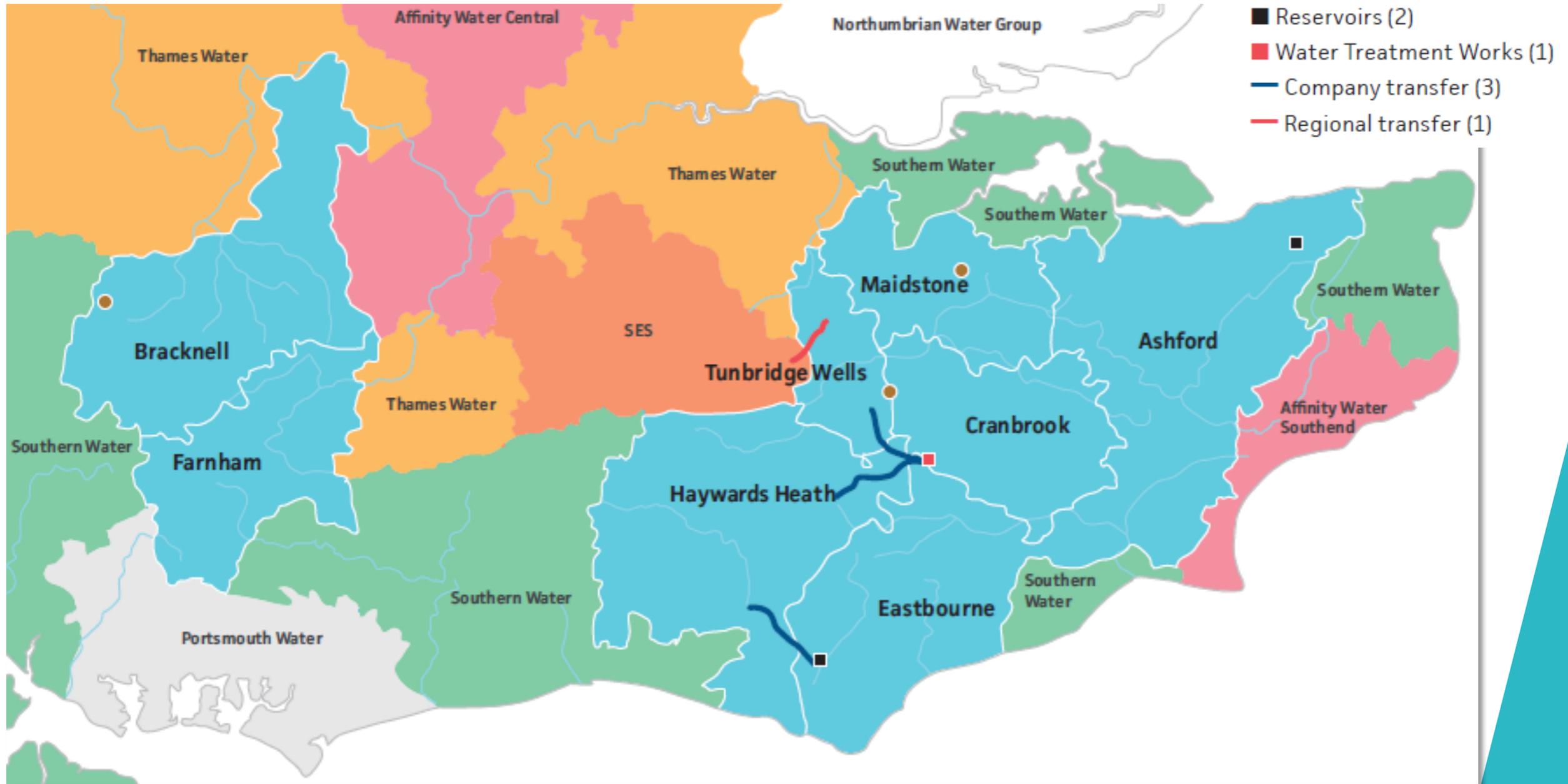


The 2019 water resource management plan

Began with **510 options** on the table, but through consultation reduced to **172 feasible options**

	2020-2025	2025-2045	2045-2080
Sevenoaks and Tunbridge Wells water resource zone	<ul style="list-style-type: none">• Leak reduction• Water efficiency	<ul style="list-style-type: none">• Catchment management at Pembury• Regional transfer with SES Water• Leak reduction• Water efficiency	<ul style="list-style-type: none">• Leak reduction• Water efficiency

The 2019 water resources management plan



Developing the regional 2024 plan

Developing a regional plan as part of Water Resources South East:

- Affinity Water
- Portsmouth Water
- SES Water
- South East Water
- Southern Water
- Thames Water

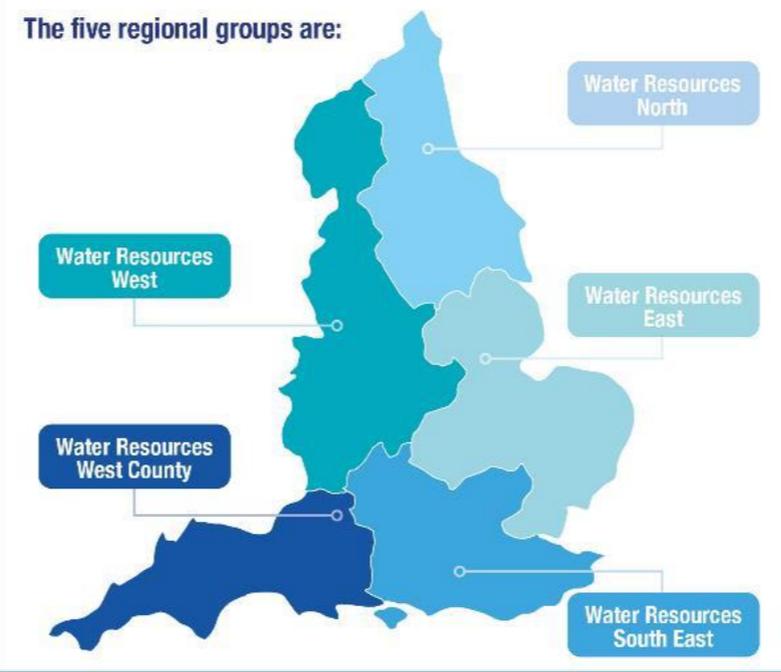


The regional plan will be used to inform our company Water Resource Management plan.

Both plans are due to be published in 2025 following public consultations.

south east water

The five regional groups are:



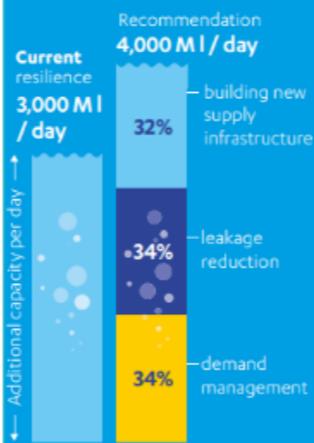
In the south east up to **six billion litres** of water is supplied every day to more than **20 million homes** and **2 million businesses**.

THE ECONOMIC CASE FOR BOOSTING SUPPLY RESILIENCE

£40 billion The predicted cost of relying on emergency options such as road and ship tankers over the next 30 years.

£21 billion The corresponding cost of building resilience over the next 30 years.

ACTION IS NEEDED TO ASSURE LONG-TERM SUPPLY



1 IMPROVE INFRASTRUCTURE

through a **national transfer network** in England and new infrastructure, such as reservoirs and water re-use systems.

2 HALVE LEAKAGE

20% of mains water currently lost each day

1,400 Ml Saved each day

3 REDUCE DEMAND

from 141 litres per person per day to 118.

118 litres

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Developing the 2024 regional emerging plan

The regional plan seeks to:

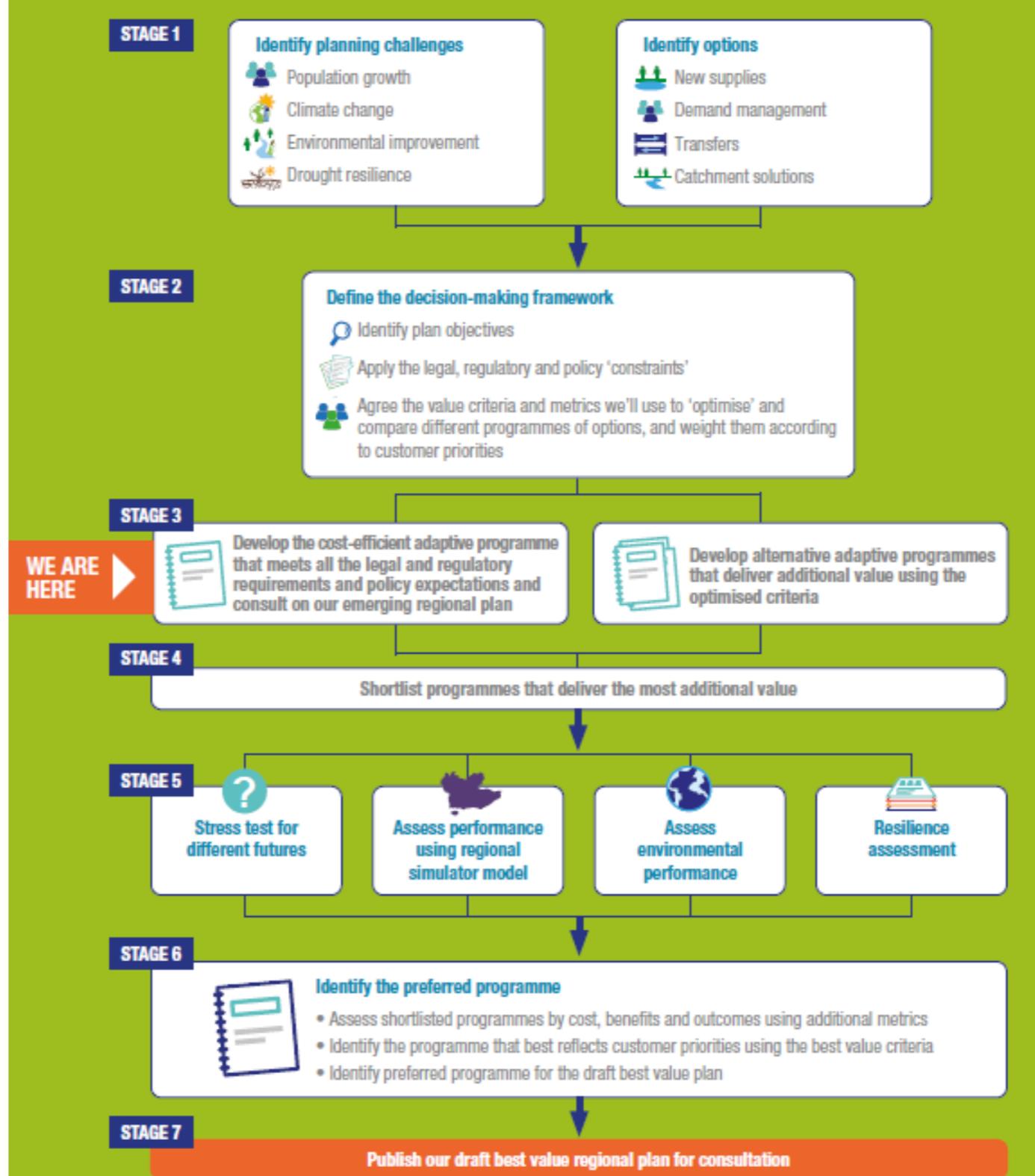
- Ensure there is enough water for a growing population and support economic growth
- Improve the environment by leaving more water in the region's rivers, streams and underground sources
- Increase the region's resilience to severe drought (1 in 500 year) and other extreme shocks and stresses
- Address the impacts of climate change on demand for water and how much is available
- Be adaptive so we are prepared for a wide range of future scenarios

The plan identifies actions that could be needed to avoid a potential **one billion litre a day shortfall** in water supplies across the south east in the next 15 years – that's around a fifth of the total water currently provided each day by the six companies.

This could rise to **2.6 billion litres a day by 2060.**

A unique feature of this plan is that it has ability to adapt depending on how the future unfolds, so if the population doesn't increase as much as anticipated and not as much drinking water is required, it can adjust accordingly.

Developing the 2024 regional emerging plan



Developing the 2024 regional emerging plan

More than **2,500 domestic and business customers as well as stakeholders** have inputted on the plan so far including local authorities, environmental group and industry.

Customer research has told us:

They expect us to:

- Make the current system as efficient as possible by reducing leakage
- Help them use water as efficiently as possible at home, and use metering and tariffs to encourage water saving
- Deliver wider benefits by making improvements to catchments

They see a role for new resources and would prefer:

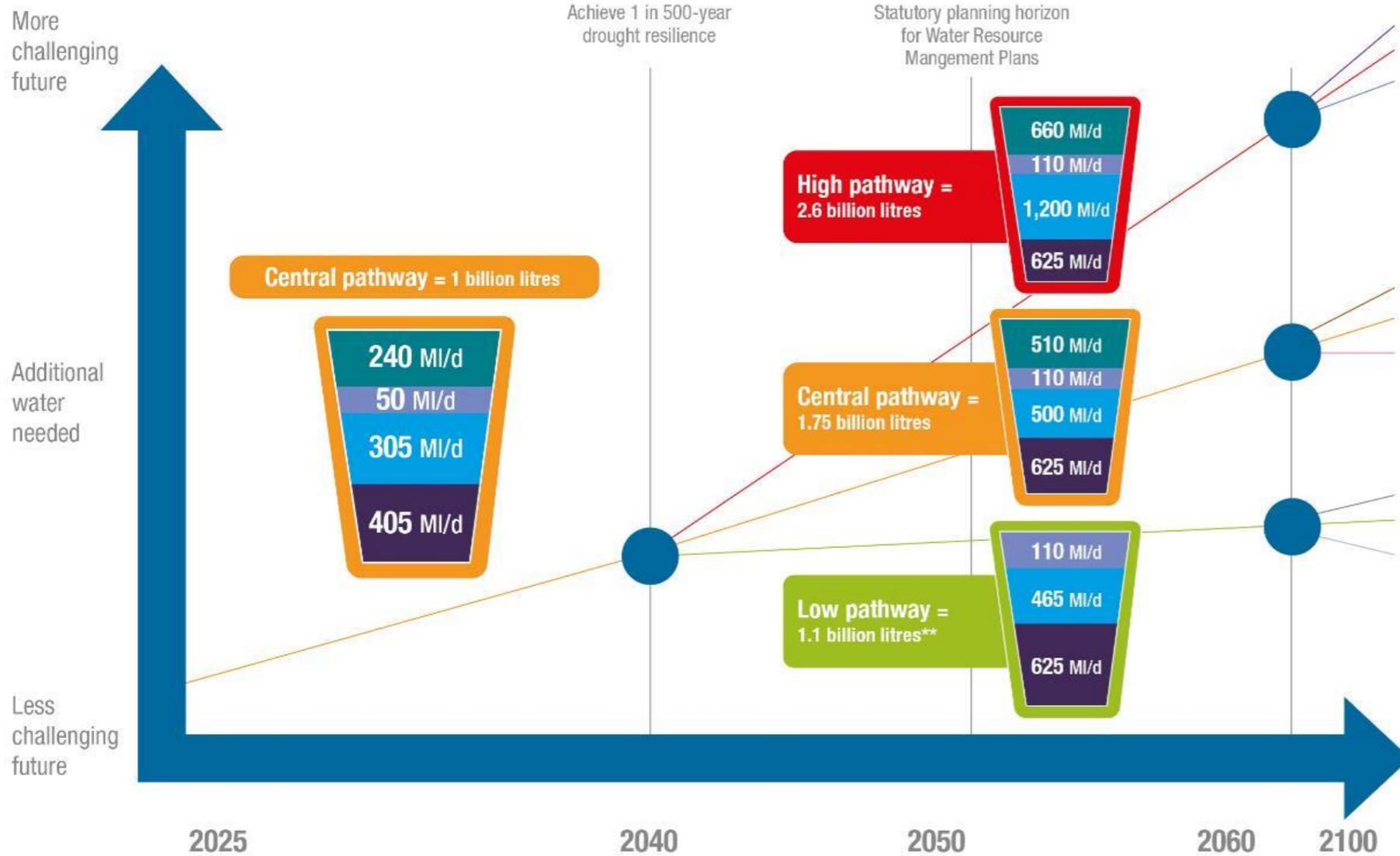
- The development of reservoirs to store more water
- Water recycling for household and industrial use
- New transfers within the region to move water around
- Improvements to how water is stored underground

Their least preferred options are:

- Schemes that require more water to be abstracted from the environment
- Desalination
- Drought orders and permits that take more water from the environment

When presented with various plans most customers chose a plan with a balanced mix of supply and demand options i.e. ones that produce and save water.

The regional emerging plan



Key

- Population growth
- Climate change
- Abstraction reduction
- Drought resilience (1 in 500-year)*

*Increased drought resilience is achieved by 2040 using drought orders and drought permits. After 2040 these are no longer used which is reflected in each scenario.

High pathway: population growth of 5.3 million people by 2060 (maximum scenario)

Central pathway: population growth of 4 million people by 2060 (housing plan scenario)

Low pathway: population growth of 230,000 people by 2060 (minimum scenario)

All pathways use the median climate change projection.

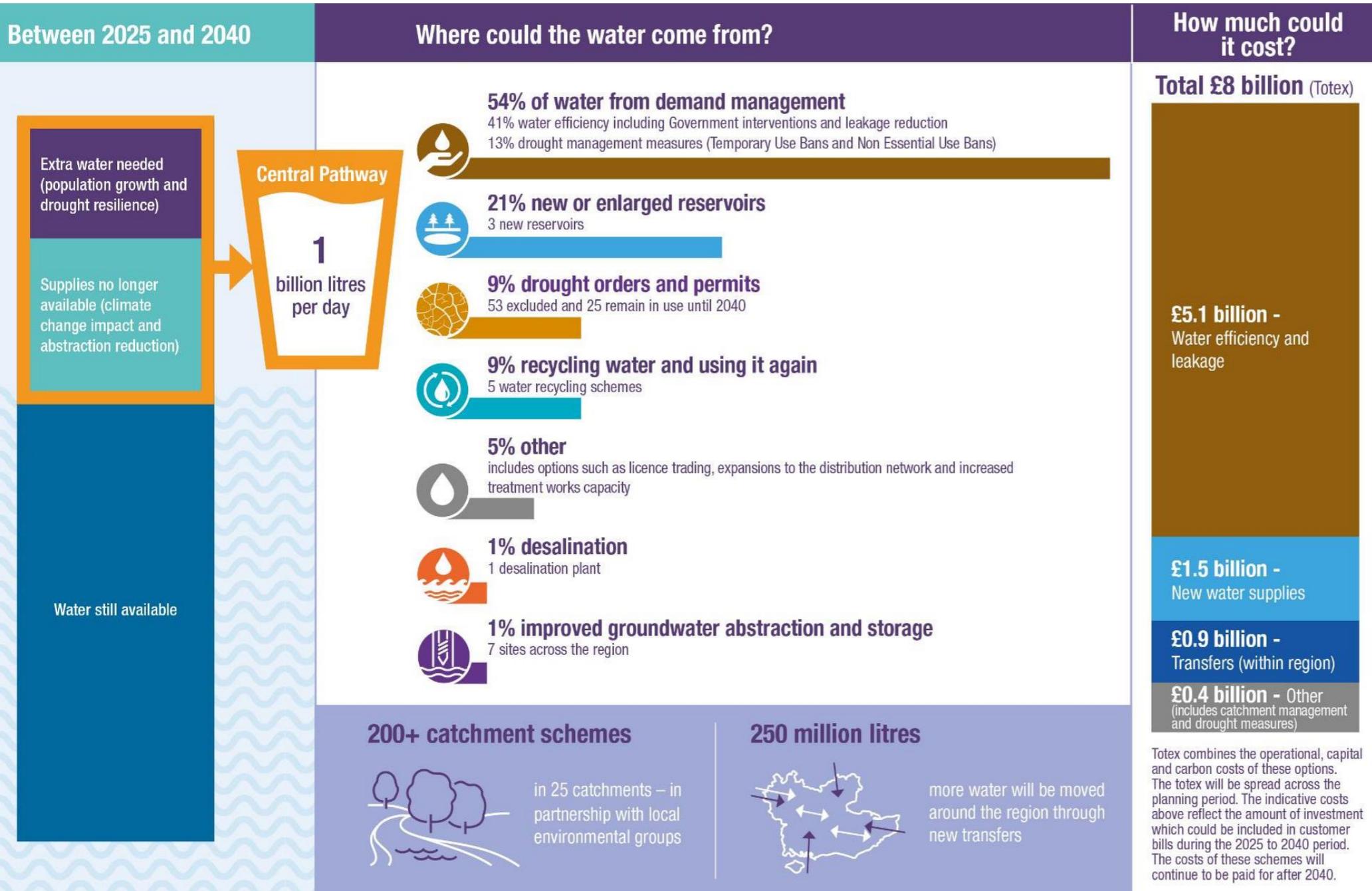
**This takes into account the lower demand forecast due to the impact of water efficiency measures (-100 MI/d)

Key

- Population growth
- Climate change
- Abstraction reduction
- Drought resilience (1 in 500-year)*

*Increased drought resilience is achieved by 2040 using drought orders and drought permits. After 2040 these are no longer used which is reflected in each scenario. For more information see page 23.

The regional emerging plan



More than 1,400 options were included in the regional investment modelling

The schemes identified in the emerging plan represent the ‘cost efficient’ solution to meeting the region’s future challenges

They will deliver legal and regulatory requirements

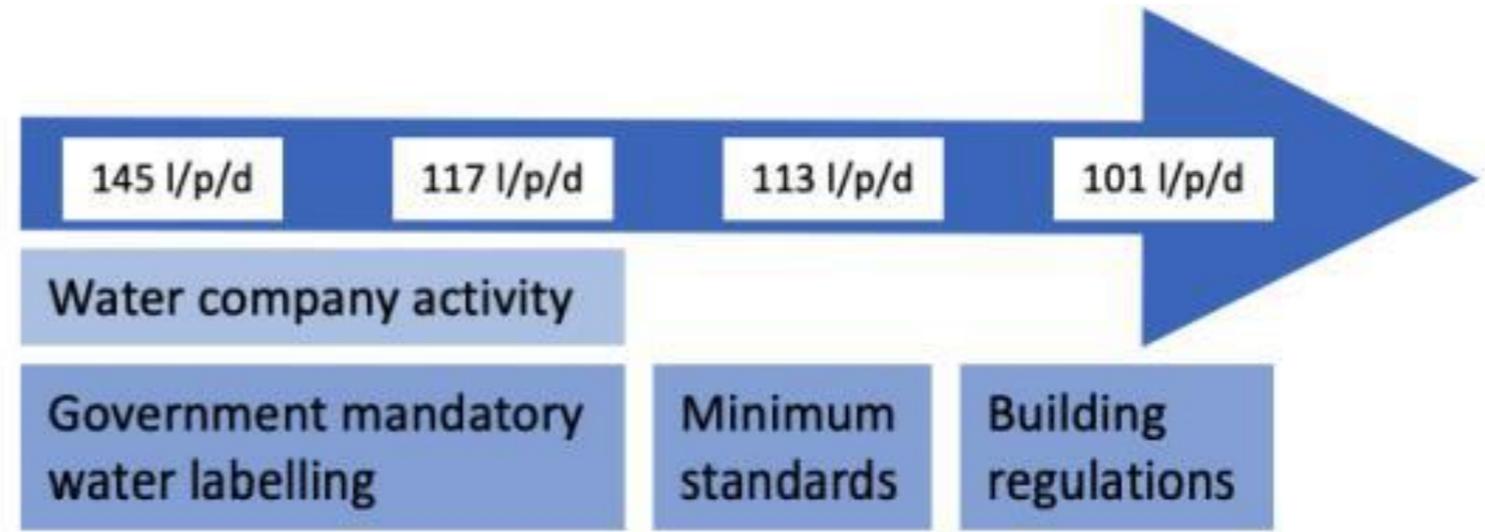
Total programme cost in the first 15 years in £8 billion

We will use this plan as the baseline to consider whether additional value could be delivered as we develop a ‘best value’ plan

The regional emerging plan – demand management

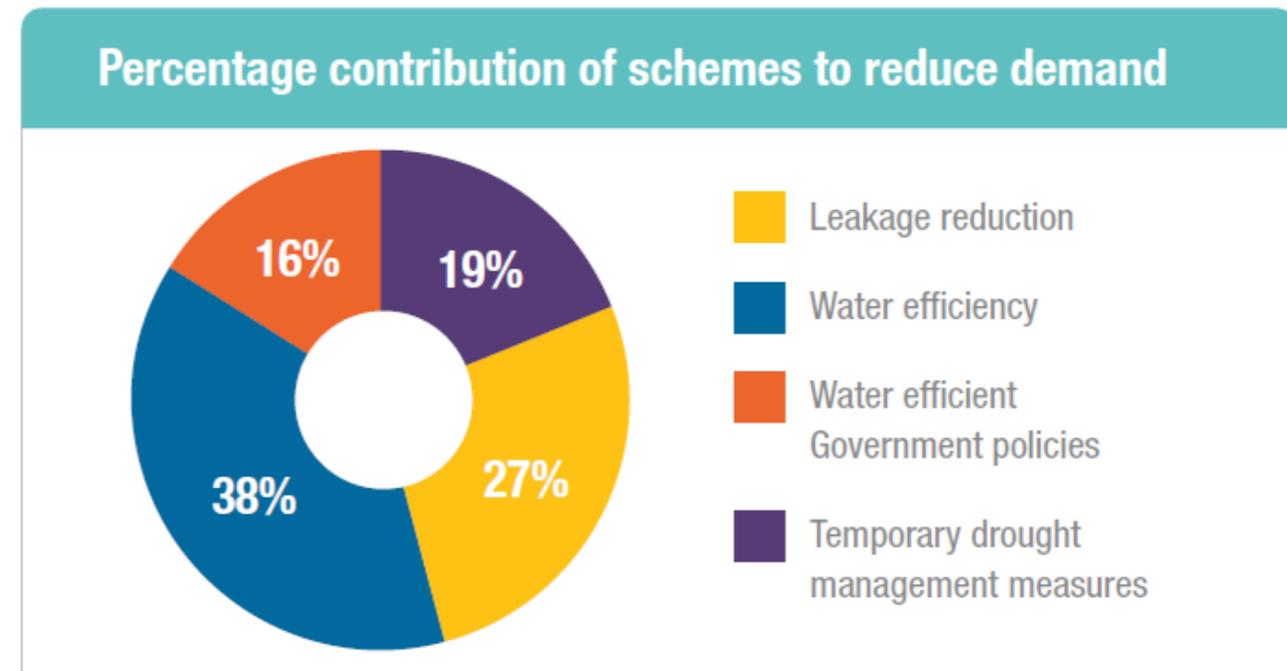
Water efficiency

- Achieve 110 litres/person/day. This will require both company led and government led interventions
- Government interventions include mandatory water labelling, minimum product standards and Building Regulations for new homes and retrofits.

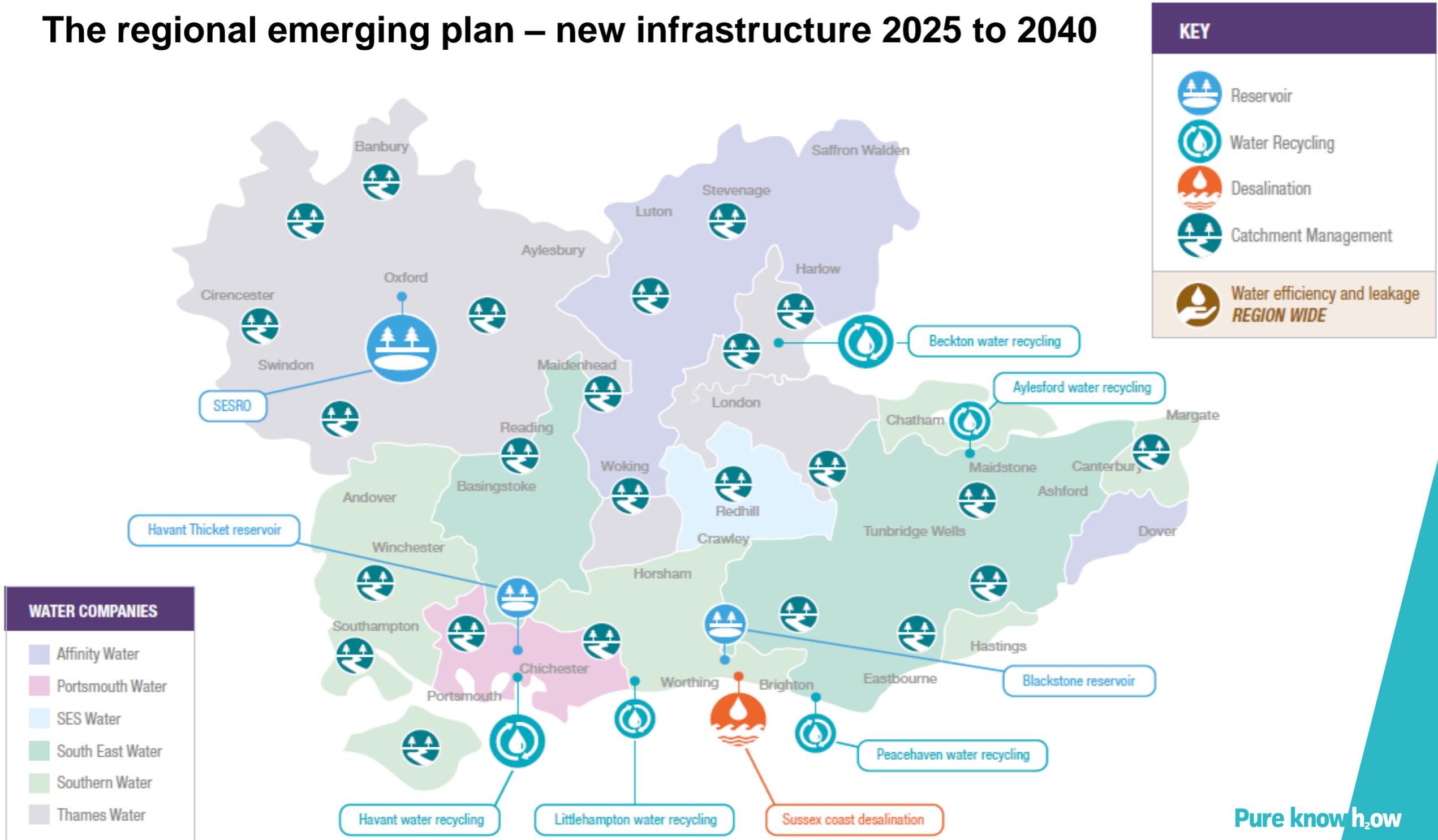


Leak reduction

- Halve leakage by 2050. This is a major challenge and the sector is developing a roadmap to achieve it.
- Beyond 2050 there will be ongoing reduction in leakage but at a slower rate as it will become increasingly difficult and less cost efficient
- Around 25 per cent of leakage is on customers' pipes



The regional emerging plan – new infrastructure 2025 to 2040



KEY

- Reservoir
- Water Recycling
- Desalination
- Catchment Management
- Water efficiency and leakage
REGION WIDE

WATER COMPANIES

- Affinity Water
- Portsmouth Water
- SES Water
- South East Water
- Southern Water
- Thames Water

The regional emerging plan – catchment management

Over 200 catchment and nature-based solutions were identified - requiring approximately £350 million of investment by 2040.

Improving these catchments is a priority to increase resilience of the sources we rely upon.

Schemes include river restoration; nutrient and sediment reduction; working with farmers to improve land management practices; creation and management of terrestrial habitats and Sustainable Drainage Systems schemes.

The majority of these schemes do not form part of our cost-efficient solution and may only produce a limited amount of water, but they could help the environment become more resilient to climate change and other pressures.

At South East Water we have an established catchment management programme in five surface water and nine groundwater catchments.



Between 2040 and 2060

High pathway

(2.6 billion litres in total between 2025 and 2060)

+1.6
billion litres
per day

Central pathway

(1.75 billion litres in total between 2025 and 2060)

+750
million litres
per day

Low pathway

(1.1 billion litres in total between 2025 and 2060)

+100
million litres
per day

Where could the water come from?



27% transfers from other regions – Severn Thames Transfer and Grand Union Canal



26% water efficiency and leakage reduction



24% water recycling – 10 schemes



11% desalination – 6 schemes



5% improved groundwater abstraction and storage – 7 sites plus 2 ASR schemes



4% other



3% reservoirs – 5 schemes



56% water efficiency and leakage reduction



22% water recycling – 3 schemes



7% reservoirs – 3 schemes



5% transfers – Severn Thames Transfer



5% improved groundwater abstraction and storage – 3 sites plus 2 ASR schemes



4% other



1% Desalination – 1 scheme



57% water efficiency and leakage reduction



26% water recycling – 5 schemes



12% reservoirs – 1 scheme



3% improved groundwater abstraction and storage – 4 sites plus 1 ASR schemes



2% desalination – 2 schemes

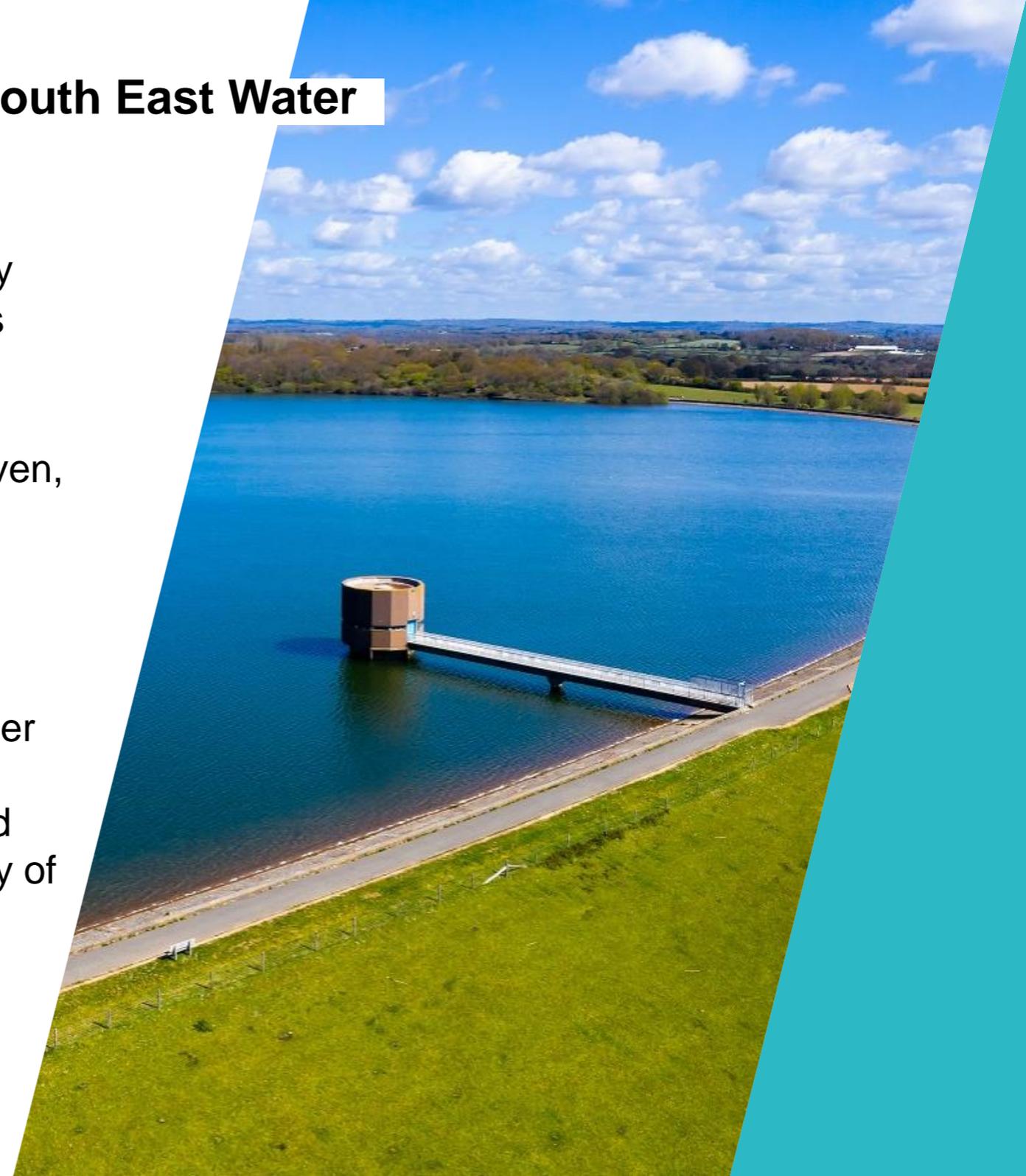
The regional emerging plan – options for South East Water

2025 to 2040:

- Reducing water leaks and increasing water efficiency
- Catchment management and nature based schemes which ensure long term quality and quantity of water
- Water reuse schemes along the River Medway at Aylesford, Kent and along the River Ouse, Peacehaven, East Sussex
- Water transfers

2040 to 2100:

- Continuing to reduce water leaks and increasing water efficiency
- Additional catchment management and nature based schemes which ensure long term quality and quantity of water
- A new reservoir at Broad Oak near Canterbury, Kent
- Additional water transfers
- Potential desalination at Reculvar, Kent



The regional emerging plan – new infrastructure 2040 to 2060

High scenario



KEY

- Transfer from other Region
- Reservoir
- Water Recycling
- Aquifer Storage Recovery
- Desalination
- River Abstraction
- Water efficiency and leakage **REGION WIDE**

WATER COMPANIES

- Affinity Water
- Portsmouth Water
- SES Water
- South East Water
- Southern Water
- Thames Water

KEY

- High scenario [CLICK TO VIEW](#)
- Central scenario [CLICK TO VIEW](#)
- Low scenario [CLICK TO VIEW](#)

The regional emerging plan – consultation

The consultation closes on **14 March 2022**

Read the plan, watch the webinars and submit consultation feedback at wrse.uk/engagementhq.com



About our consultation

Have your say on our emerging plan to address the challenges facing all water users in South East England.

[Read more](#)

Next steps

- Response document to be published in **April 2022**
- Best value plan consultation launches **3 October 2022**
- Company plan statutory consultation launch **November 2022**
- Publish revised draft regional and company plans early **2023**



Futureproofing our water supplies

A CONSULTATION ON OUR EMERGING REGIONAL PLAN FOR SOUTH EAST ENGLAND

JANUARY 2022

wrse
Water Resource South East

SECTION 1
The Challenge

SECTION 2
The Proposed Solution

SECTION 3
The Emerging Regional Plan

SECTION 4
How We Have Developed Our Plan

Any questions?