Water Resources Management Plan 2024

Non-technical summary

January 2025

How we'll continue to deliver safe, clean drinking water from now and into the future.

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Our supply area

We collect 1.3 billion litres of water from more than 100 impounding reservoirs, 9 rivers, and 50 groundwater sources every day. We have 50 water treatment works supplying 5.5 million people and 140,000 businesses in Yorkshire through a network of 32,000km of pipes.

Our supply system is split into two water resource zones based on network connectivity. Our Water Resource Management Plan considers the future water needs in each zone.

In most years 45% of the water we supply is from impounding reservoirs, 30% from rivers and 25% from groundwater. The connectivity in our grid system allows us to rebalance our sources to meet customer demand and compensate the environment during dry weather conditions.

Grid zone

Our Grid zone includes over 99% of our customers and both urban and rural populations. The area includes three national parks and many of the rivers and reservoirs are environmentally designated sites. The water supply to this zone comes from a combination of reservoirs, groundwater sources and river sources. The zone is highly connected via a network of raw and treated pipelines.

East zone

The East zone is predominantly rural. It includes Whitby and part of the North York Moors National Park. The water supply is from a river source with support from springs.

Why do we need a Water Resource Management Plan?

We want to provide our customers with a reliable and sustainable supply of high quality water, now and in the future. Over time, our ability to meet customer demand for water will be challenged by climate change, population growth and the need to protect the environment. Our Water Resource Management Plan assesses the scale and impact of these challenges and sets out how we'll tackle the risks.

All water companies are required by legislation to produce a plan every five years to make sure it's based on the latest data and to make changes if needed. The plan forecasts future supply and compares against future demand to identify if there's any risk the supply-demand balance will fall into deficit.

Our previous plan was our Water Resources Management Plan 2019. It showed an increasing deficit in our Grid zone from the mid 2030s onwards. Our solution to avoid this risk included a 15% reduction in leakage by 2025 and increased groundwater supplies to give extra resilience to our Grid network.

Links with other plans

Our Water Resource Management Plan 2024 replaces our 2019 plan. It has been developed to comply with regional and national water resource planning guidelines, environmental legislation, River Basin Management Plans and the Government's Environmental Improvement Plan.

It's a key component of our long-term, strategic planning framework. The investment needed to deliver our Water Resources Management Plan is secured through our Business Plan. We make sure our water supply maintains high drinking water standards through our drinking water quality plan. During drought events, we implement our Drought Plan which includes triggers and actions for maintaining water supply during extreme dry weather events.

Yorkshire Water is a core member of the Water Resources North regional group. Our Water Resource Management Plan 2024 has been created in collaboration with the Regional Plan **waterresourcesnorth.org** and aligns with the regional planning outputs.

Our plan aims to:

- Provide a secure supply of water for the future
- Increase resilience to dry weather events
- Contribute to Government's Environmental Improvement Plan to half leakage, reduce domestic water use to 110 litres per head per day and business water use by 15% by 2050

A key objective for our WRMP24 is to become more resilient to extreme droughts and less reliant on drought measures

What does the future look like

Our Water Resource Management Plan 2024 forecasts supply and demand over a 60 year planning period from 2025 to 2085. Our latest plan has identified much bigger challenges than our Water Resource Management Plan 2019.

New data on climate change is showing a much bigger reduction in future supply

Climate change is increasing the frequency, duration and severity of droughts, and we can expect more dry weather events in the future, such as 2022 when a hosepipe ban was in place for the first time in over 25 years. We estimate that by 2050, we'll need an extra 87 million litres per day to offset climate change impacts on our supplies.

Rivers and groundwater could become more sensitive to abstraction in the future

We want our water supply to be sustainable for the environment and our Water Resource Management Plan 2024 includes a long term environmental destination. This has identified a potential need to reduce abstraction by 11 million litres per day from groundwater sources in North and South Yorkshire by 2035 and 104 million litres per day from the River Derwent in North Yorkshire by 2040.

Total daily demand for water is expected to grow by 20 million litres per day due to population growth and new housing developments

Our demand forecast estimates an increase in population of 700,000 by 2050. We've seen demand increase during the Covid pandemic and a sustained impact from more home working. This has led to an increase in per capita use.

A loss of a raw water import currently providing around 50 million litres per day will end

A proportion of our water supply is provided by Severn Trent Water, which helps meet demand in South Yorkshire. The transfer will end in 2035 and we must provide a new source of supply to South Yorkshire to offset this loss.

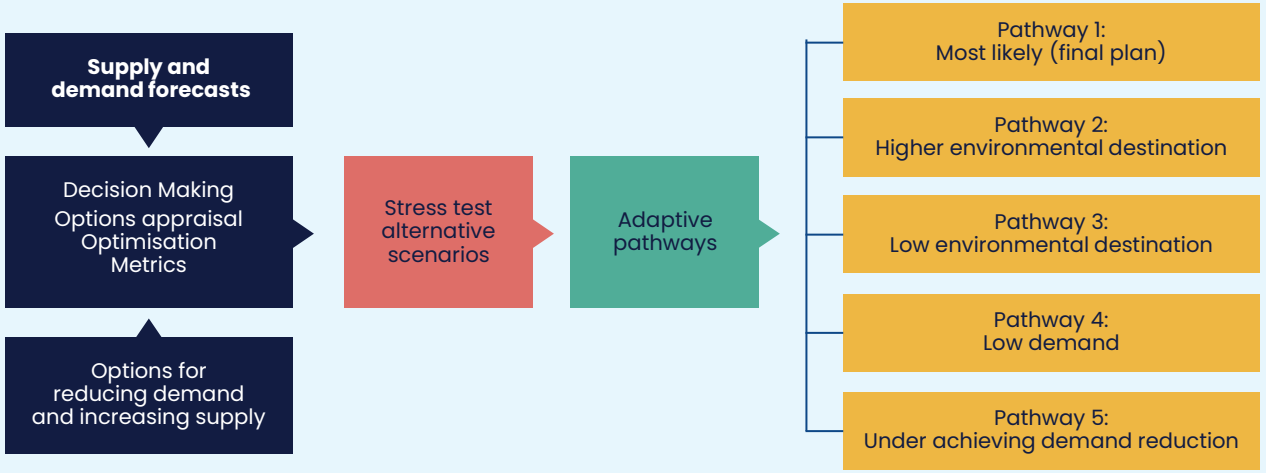
When the above impacts are incorporated into our forecasts, along with changes due to improvements in drought resilience and planning allowances, the supply-demand balance indicates by 2050 we'll need an extra 312 million litres of water per day to meet the public water supply needs in the Grid zone.

Building the plan

To close the deficit and meet resilience and demand reduction objectives, we select a solution through our decision making process.

First, we identify the options available to us. Then we use a range of metrics for selecting options to give the best value solution.

As the future is uncertain, our plan includes a most likely pathway for closing the deficit and alternative pathways that could be triggered if the deficit is greater or lower than our forecasts show.



Good to know

When we develop our best value plan, we use metrics to represent a range of factors that are important to wider society and the environment.

We cannot maximise benefits across all metrics as this would result in an unaffordable plan, so our aim is to balance the impacts on the metrics to provide best value.

Shaping our plan

Throughout the development of our plan, we sought the views of stakeholders, customers and regulators. During this process, we held a public consultation and conducted customer research. The feedback we received during consultation from stakeholders and the information we gathered via customer research have been used to shape this and future plans.

We published our draft Water Resource Management Plan 2024 for consultation on 18 November 2022. The consultation period was 14 weeks and closed on the 24 February 2023. We reviewed all the responses and made some key changes as a result.

Changes following the consultation

We further developed our demand reduction options for leakage, domestic and business water efficiency interventions and included more details on the benefits and costs.

In response to regulator feedback, we've brought forward the Environmental Destination date from 2050 to 2040 for the River Derwent abstraction and the solution to address this.

Retaining the Severn Trent import is no longer considered as a possible future scenario, which means we'll need to deliver an alternative supply solution to South Yorkshire.

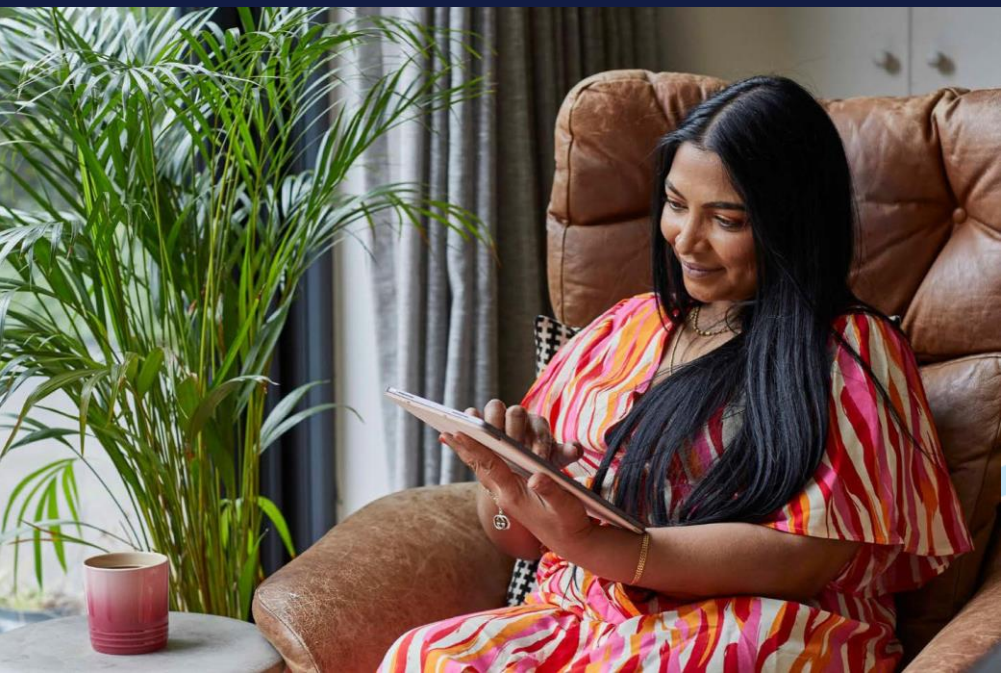
Further scenario testing was undertaken to make sure that our plan can adapt to key risks in the future.

Good to Know

For the next Water Resource Management Plan in 2029, we'll continue to investigate further supply options and more innovative solutions.

Customer views

We carried out more detailed customer research with the Yorkshire Water “Your Water” Community, which is a group of informed customers who give feedback on our plans and strategies.



Our research showed that customers want to engage in our water resource management plan and understand the scale of possible future supply and demand challenges.

Being resilient to climate change is a high priority as well as protecting the natural environment. Customers recognise the need for long-term goals, but want to see positive action happening now, with immediate benefits for both the environment and customers.

Customers are supportive of our approach and recognise that a range of supply and demand options are needed for resilience.

Customers welcomed encouraging positive behaviour around water usage. They supported education programmes and interventions such as installing smart meters in every property.

Key insight

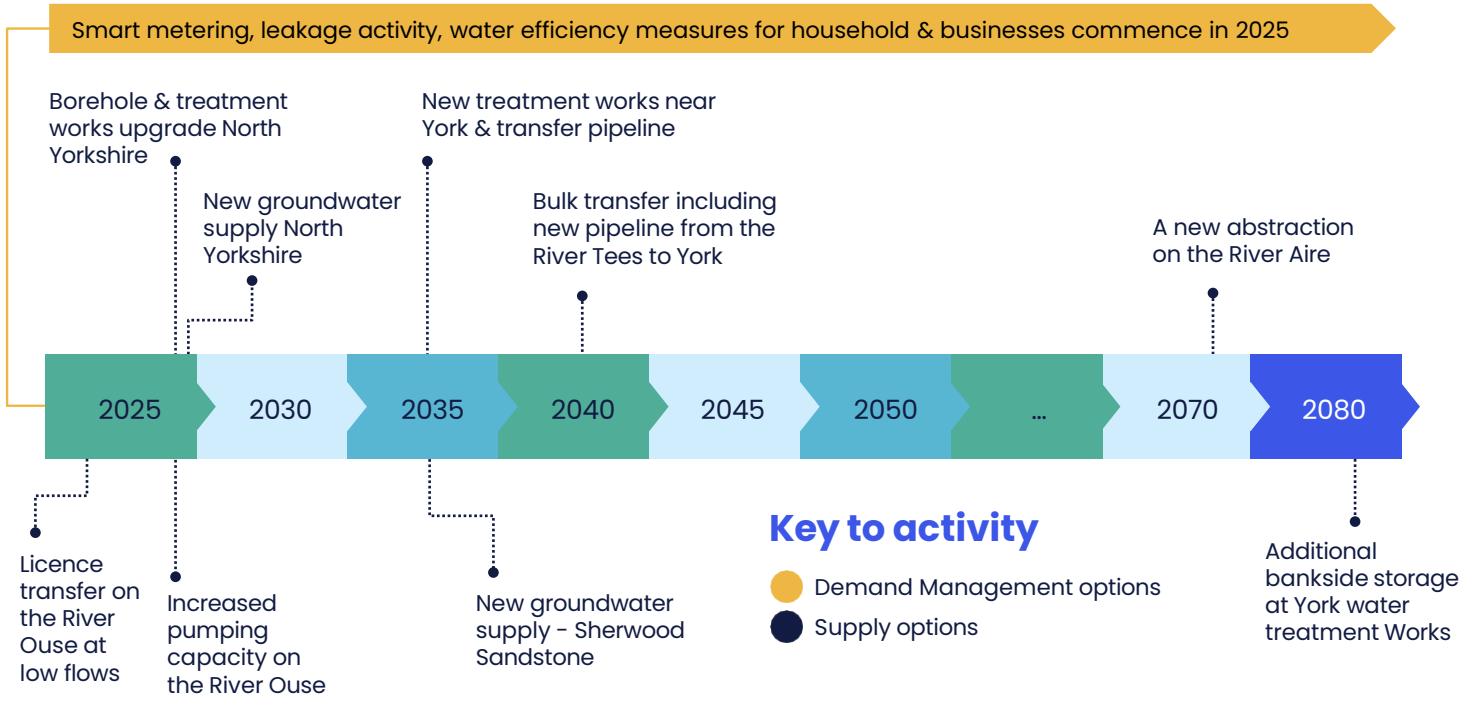
Overall customers tend to be more positive towards measures that reduce demand but recognise new supplies are necessary to become more resilient to climate change

71%

of customers support our plan to manage the risks around potential reduction in abstractions

Our plan at a glance

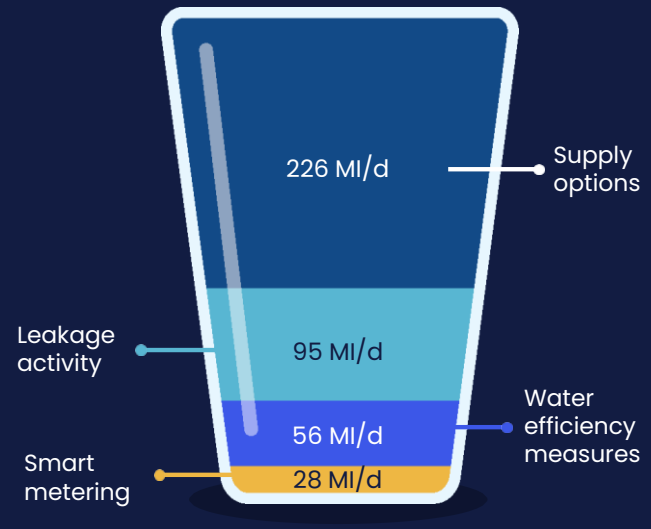
Our preferred plan is a twin track approach, reducing demand and increasing supply to offset the impacts of climate change and population growth. Our plan meets the needs of our customers and helps us safeguard the water environment for future generations.



Closing the deficit

By 2050 we'll close the deficit through these solutions.

At this point our plan will be in surplus until further investment is needed in 2073.



What our plan delivers – demand reduction

Our plan includes an ambitious demand reduction strategy aligned with the Government's water saving objectives.

Our goal is:

- To halve the volume of leaks on our network compared to levels recorded in 2017/18 by 2050.
- Help our customers reduce their water use to an average of 110 litres per head per day by 2050.
- Work with retailers and business customers to achieve a 9% reduction in commercial water use by 2038.
- The combined benefits of our demand actions will be a 20% reduction in water production per head of population by 2038.

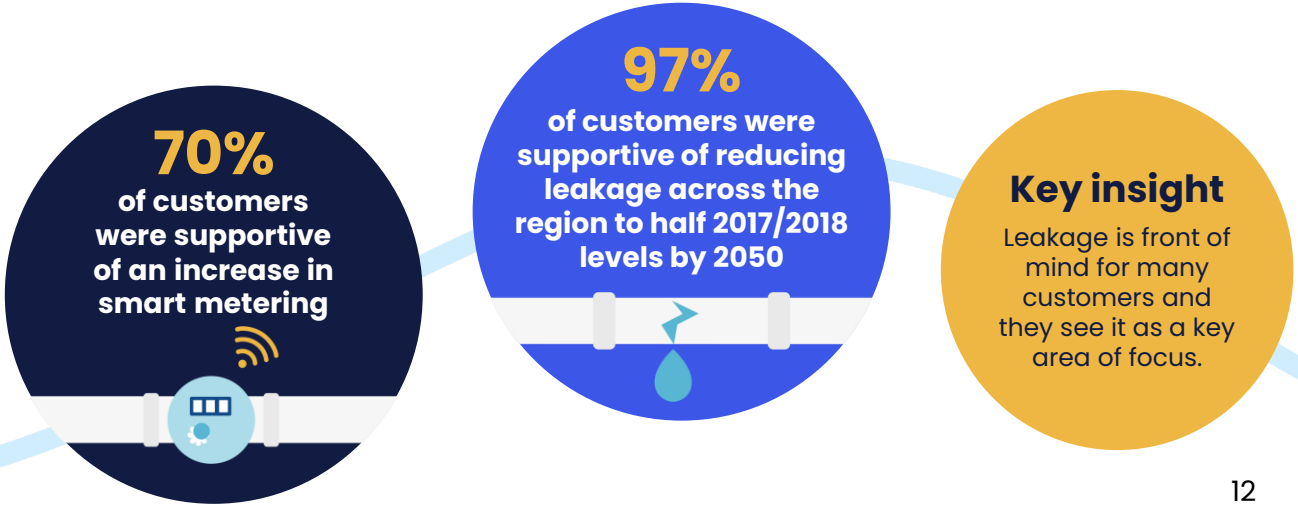
We'll enhance our leakage reduction activity and find and fix more leaks on our network and customer supply pipes through new and innovative techniques. We estimate this will save 95 million litres per day by 2050.

We'll encourage households and businesses to save water through campaigns, retrofitting water efficiency measures and rain water harvesting to save an estimated 17 million litres per day by 2050.

We'll provide households and businesses with smart meters. This is expected to reduce customer use by 28 million litres per day by 2050.

We'll help promote the Government's water labelling initiative starting in 2025 and save an estimated 39 million litres per day by 2050.

Overall, our demand strategy will help us save 179 million litres per day and plug 58% of the shortfalls we predict by 2050.



What our plan delivers – supply

Increasing water supply

From 2025 to 2030, we'll deliver four supply schemes, providing an additional 21 million litres per day in total. These schemes include new infrastructure, an abstraction variation and a new groundwater borehole.

Between now and 2035, we'll be planning and constructing a water treatment works and connecting pipeline from York to South Yorkshire to provide 50 million litres per day of needed supply and offset the loss of the import from Severn Trent Water. Not only this but a new borehole and water treatment works will be constructed in the North Yorkshire area of our region.

To meet our environmental destination and the likely reduction on our River Derwent abstraction licence, between now and 2040 we'll be planning and implementing a new transfer scheme to import water from Northumbrian Water, supported by Kielder Water. In advance of any construction, further investigations will determine the exact loss of abstraction and if the import from Northumbrian Water is the best value option.

By 2073 our projections show a new river abstraction to support an existing water treatment works will be needed and by 2082 additional river water storage capacity will be needed too.

Drought measures

The combined benefits of demand reduction and new supplies increases our resilience to droughts and by 2040 we'll be resilient to extreme droughts with a return period of 1 in 500 years (a 0.2% annual chance of happening). Our plan will also reduce the likely need for drought actions including temporary use bans, non-essential use bans and supply-side actions that temporarily restrict demand or increase the volume we abstract.

What our plan delivers – supply

1. Tees to York Pipeline - (2040) 140 Ml/d
2. New groundwater supply - Sherwood Sandstone(2035) 15 Ml/d
3. Borehole and treatment works upgrade (2028) 5 Ml/d
4. Increase River Ouse pumping capacity (2028) 10 Ml/d
5. River Ouse licence transfer (2027) 0.3 Ml/d
6. York WTW and Dual Main South Yorkshire Pipeline (2035) 50 Ml/d.
7. Additional bankside storage (2082) 10.6 Ml/d
8. River Aire abstraction (2073) 33.5 Ml/d
9. New groundwater supply North Yorkshire (2028) 6 Ml/d

Good to Know

1 Ml/d is one million litres of water per day.

Best value plan benefits and costs

Our best value plan is designed to make sure we can continue to provide a sustainable supply of water to our customers.

We reduce leakage, domestic and business water consumption in line with government targets. This reduces the water we take from the environment in the future and by treating less water we reduce our carbon emissions.

We become more resilient to extreme droughts through the planning period. By 2040, we'll be resilient to a 1 in 500 year (0.2% annual chance of happening) without reliance on drought measures.

We increase water supply resilience in the Grid surface water zone and localised growth hot spots making our supply more resilient to short-term peaks in demand.

We invest in secure supplies for the future offsetting the loss of the Severn Trent Water transfer and the likely reduction in the amount of water we can abstract from the River Derwent.

Our plan is affordable recognising there is willingness to pay to improve the water environment.

Reacting to change

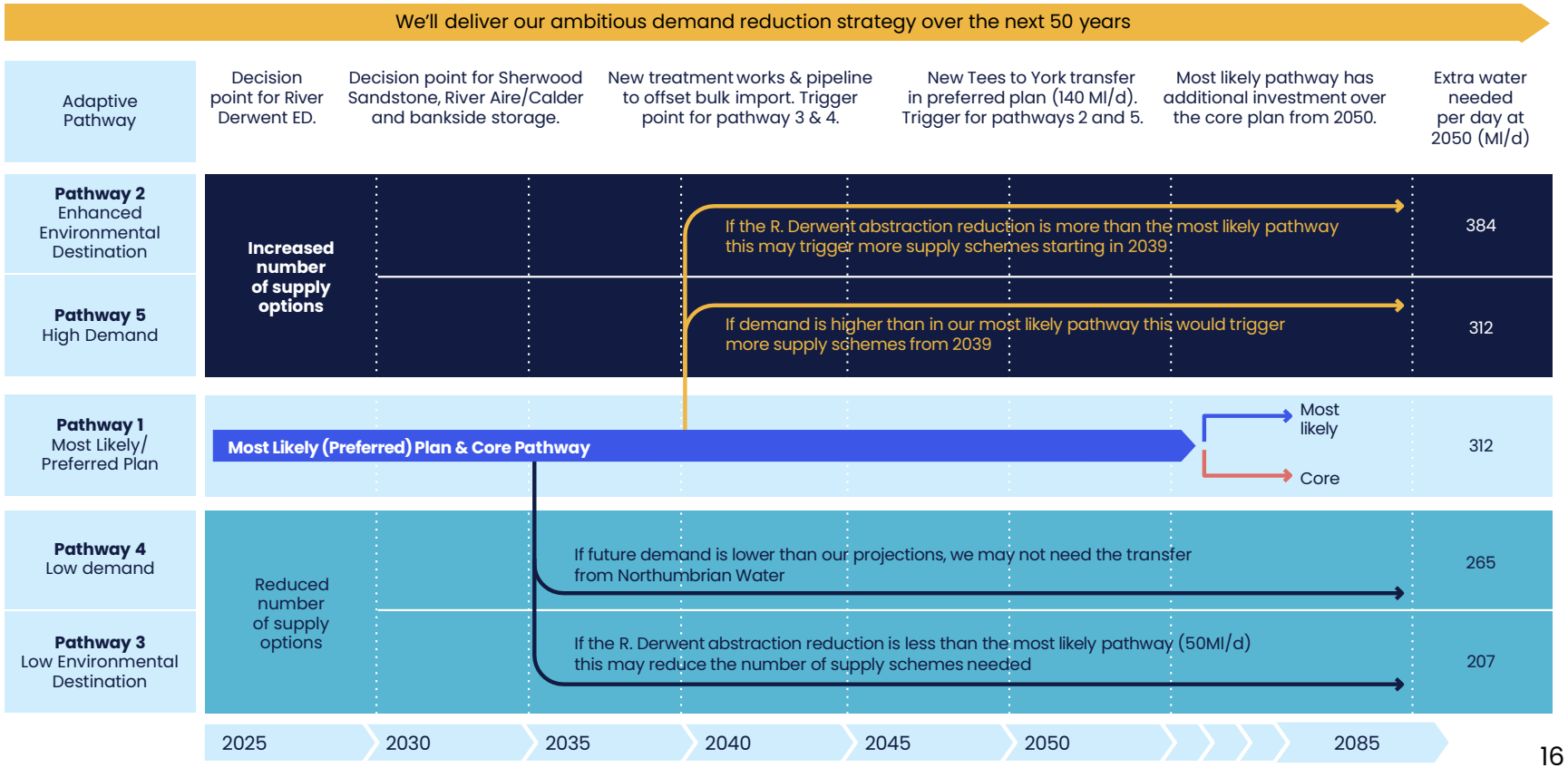
Our Water Resources Management Plan 2024 meets the supply-demand deficit in the most likely scenario using the data available to us. However, the future could be very different. The degree to which our abstraction licences will be reduced through Environmental Destination are still to be decided and the impact of population growth and climate change is highly uncertain. We've therefore assessed the potential for alternative futures and have plans in place to deviate to alternative pathways if needed..

We've identified five pathways for our Water Resources Management Plan 2024. The alternative pathways represent uncertainties which could mean we need to alter the solution for closing the deficit.

The pathways are linked to decision points that make sure we take action instead of an alternative pathway is triggered.

We'll monitor our supply-demand changes over time and collate the data we need before the decision points.

As the WRMP is revised every five years, we have further scope to adapt as more information becomes available.



Next steps

As an adaptive plan, future tracking and monitoring against our plan is key to effective delivery, along with further or ongoing work in a number of key areas in the next five years.

Demand management and leakage reduction

We'll continue to deliver our existing WRMP19 plan and at the same time, we're making sure we're prepared to deliver our ambitious WRMP24 demand management and leakage reduction plan from 2025.

Loss of Severn Trent Water import

We'll continue to work on the detailed development of backfill solutions to offset the loss of the Severn Trent Water import in 2035.

Progressing the delivery of supply schemes

Now that our preferred supply options have been identified, further detailed development work, including regulatory and planning consent, is needed before they can be implemented.

Investigations of proposed abstraction reductions

Our preferred plan assumes the likely reduction in the amount of water we can abstract from the River Derwent as part of our environmental ambitions. This has a high long-term impact on our future water supply needs. We'll begin investigations to consider the potential environmental benefits from any reduction, the scale of any abstraction reduction, and the impact on our available supplies. Once these investigations conclude, we'll know for sure how our plan will have to adapt to accommodate the outcome of our investigations.

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Yorkshire Water Services Limited,
Western House, Halifax Road, Bradford, BD6 2SZ.
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