

THE BENEFITS OF EACH INITIATIVE HAVE BEEN SCORED ON FIVE KEY CRITERIA

Level of improvement	Level of investment required	Environmental impact	Level of Disruption	Carbon emissions impact
(e.g. to supply/ demand/ capacity)	(Cost to United Utilities but will impact on customer bills further down the line. The higher the cost, the greater the likelihood this will impact customer bills)	(e.g. pollution, biodiversity etc)	(e.g. roads or building works)	

EACH WILL RECIEVE A SCORE ON THE BELOW SCALE



Transferring water from other areas

- In order to increase our water supply and help us to cope with long periods of dry weather, we could consider transferring water into our region from other water companies.
- Another option to consider would be intra-company transfers. This is where water is moved from existing sources or areas with plentiful supply to areas where the water is scarcer, within the North West region.

Why is this option being considered?

To increase our supply.

What we think the benefits are

- Transferring water from other areas increases the connectivity of our supply system and helps to improve our resilience to dry weather.
- This would reduce the chance of customer restrictions (e.g. hosepipe bans) and could also protect the environment where it allows us to reduce the amount of water we take from sensitive sites.
- It could also help us deal with other risks, for example, helping to maintain customer supplies if we had an issue at one of our treatment sites.

What we think the drawbacks are

- United Utilities will need to invest in new infrastructure (such as pipes and buildings) to deliver this water to the North West region, with a possible corresponding impact on customer bills.
- Doing so would have environmental impacts as water is heavy and requires lots of energy to move it around the region. Therefore, the process has the potential to generate lots of Carbon whilst it's being operated.
- In the short term, this option could cause some disruption to customers with noise and roadworks whilst new infrastructure, such as pipes, are installed. The construction can have environmental impacts which would need to be mitigated.
- There may be subtle changes in the taste of the water depending on the source.

SUPPLY

Making sure there's enough water when you turn on your taps

Level of improvement

VERY HIGH

Level of investment required

VERY HIGH

Environmental impact

FAIRLY NEGATIVE

Level of disruption

VERY HIGH

Carbon emissions impact

VERY NEGATIVE

in the flow

in partnership with  United Utilities
Water for the North West

Taking water from the sea

- Water is taken from the sea and treated to remove the salt and meet required drinking water quality standards, before being used for drinking water supply.
- This technology has proven to be suitable for large scale water supply schemes around the world, but is not currently widely used by all UK water companies.

Why is this option being considered?

It offers a very reliable supply of water.

What we think the benefits are

- It is innovative and would provide another source of water to increase our supply and resilience to dry weather events.
- No water is removed from the freshwater environment.

What we think the drawbacks are

- The processes that treat the water require lots of energy compared to normal water treatment and this generates a lot of carbon and is very expensive.
- In addition to this, brine removal is an environmental problem that needs to be considered. Brine is very harmful to plants and the environment.
- Noise and disruption to build the new treatment plant and loss of land for other uses (e.g. housing and recreation) are other important considerations.
- Customers may also notice a change in the taste of their water.

SUPPLY

Making sure there's enough water when you turn on your taps

Level of improvement

VERY HIGH

Level of investment required

VERY HIGH

Environmental impact

VERY NEGATIVE

Level of disruption

VERY HIGH

Carbon emissions impact

VERY NEGATIVE

Taking water from surface waters (rivers, reservoirs)

- United Utilities could take more water from rivers it already uses for water supply purposes or apply for a license to take water from other rivers not currently used.
- United Utilities could also build new reservoirs in the North West region to allow additional storage capacity.
- In addition to this, the size of reservoirs can be increased to store more water.
- This means that more water can be collected and stored when water is plentiful and used when it is not.

Why is this option being considered?

It is important to consider new/ increased water supplies to meet a growing demand in the future and ensure a resilient supply.

What we think the benefits are

- Could also result in new recreational uses of the reservoir (e.g. boating, fishing etc.).
- Less likely to have water restrictions (e.g. hosepipe bans) enforced during dry weather.
- Building reservoirs helps us to capture and store rainfall to balance supplies over a longer period.

What we think the drawbacks are

- This may require additional water treatment work capacity.
- Changes to river flows could have an impact on wildlife & how the river looks and taking more water from rivers could affect the ability to use the river for recreation (e.g. boating, fishing etc.).
- Temporary disruption to local area from construction (noise and congestion).
- Some land around the edge of the existing reservoirs might be flooded to raise the water level. There could be a loss of land and impacts to the river downstream (e.g. impacts on fish habitats). There would also be some temporary disruption during construction (noise) and potential impact on commerce (e.g. local business disruption, loss of tourism etc.).
- This may increase the customers' annual water bill, depending on the size of the scheme.
- The construction of new reservoirs would cause existing land to be lost, is expensive and can take many years to complete (e.g. 15+ years).

SUPPLY

Making sure there's enough water when you turn on your taps

Level of improvement

FAIRLY HIGH

Level of investment required

VERY HIGH

Environmental impact

VERY NEGATIVE

Level of disruption

FAIRLY HIGH

Carbon emissions impact

FAIRLY NEGATIVE

Taking water from underground

- United Utilities could increase the amount of water taken from the ground from existing or new sources.
- This water is naturally replaced when it rains.
- Another option would be to actively store water underground during wet periods, which we could then use during dry periods (artificial storage and recovery).

Why is this option being considered?

Groundwater sources are important during dry weather in particular.

Aquifers (a body of rock and/or sediment that holds groundwater) generally respond to weather conditions very differently to other water bodies (rivers and reservoirs).

More than 90% of the water we supply each year comes from rivers and reservoirs, so if their levels are low during a drought, it is important that we have access to groundwater to compensate.

What we think the benefits are

- Increasing the number of boreholes/ the amount we take from the ground would help increase supply resilience and reduce the chance of water use restrictions (e.g. hosepipe bans), which are disruptive to customers.

What we think the drawbacks are

- An environmental consideration is that ground water levels can in some cases affect river flows affecting wildlife and how the river looks.
- There could be some temporary disruption to the local area from construction (noise and congestion).
- Changing the drinking water supply to groundwater could result in a different taste to the water and subtle changes in its domestic use (e.g. more limescale).
- Taking more groundwater near the coast can sometimes lead to saline intrusion (where groundwater is displaced by seawater).

SUPPLY

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Environmental impact

FAIRLY NEGATIVE

Level of disruption

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Carbon emissions impact

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Water for the North West

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Managing the land to improve water quality

United Utilities own and manage 56,000 hectares of land in the North West and work with third parties to encourage the adoption of best practices on the remaining 720,000 hectares land in the region.

The way the catchment land is managed is really important, as it affects the quality and quantity of the water that reaches our treatment works.

There are a number of actions that could be taken in the region to improve the quality of water, such as managing the use of pesticides around our sources.

Taking these actions would provide opportunities to increase the amount of water we can supply from treatment works because:

1. Less treatment means less water is consumed in the treatment process
2. Water can be captured that was previously untreatable/ too costly to treat

Why is this option being considered?

To improve the quality of water going into our treatment works and increase our supply.

What we think the benefits are

- This should improve water quality in rivers and lakes at a lower cost overall.
- There may also be additional environmental benefits, for example reduced carbon, reduced use of chemicals, supporting biodiversity.
- By delivering in collaboration with other partners the costs can sometimes be shared.
- There is little or no disruption resulting from road and building works.

What we think the drawbacks are

- It may be harder for us to measure the benefit being delivered by this kind of solution
- This option would require collaboration with a range of stakeholders and could take some time to see the benefits

SUPPLY

Making sure there's enough water when you turn on your taps

Level of improvement

FAIRLY HIGH

Level of investment required

FAIRLY LOW

Environmental impact

VERY POSITIVE

Level of disruption

NO IMPACT

Carbon emissions impact

VERY POSITIVE

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Increase capacity (water)

- Water from rivers, reservoirs and groundwater comes into the water treatment works and is processed to ensure it meets drinking water standards.
- We could increase the amount of water that the treatment works can process, by identifying things that need replacing/cleaning and areas where the process can be made more efficient.

Why is this option being considered?

Increasing the output of treatment works means more water is available to supply to our increasing demand.

What we think the benefits are

- Less expensive than building a whole new reservoirs as it's just increasing the efficiency of current infrastructure.
- Customers would be less likely to experience water use restrictions (e.g. hosepipe bans) during dry weather.

What we think the drawbacks are

- Could be expensive, depending on amount of work needed.
- It would only be possible at treatment works that have surplus water to treat.

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Level of disruption

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Carbon emissions impact

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Water reuse

- Normally wastewater is treated in a wastewater treatment works and then returned to the rivers and seas. Instead, we could treat the water to a higher level to meet drinking water standards, (as required by public health regulations) and use this to supply customers.

Why is this option being considered?

It would increase our supply and resilience to dry weather events.

What we think the benefits are

- Less water will be taken from the environment and if indirect, can improve the water quality of some river reaches.
- It will require less energy than many other options.
- Supply is not dependent on the weather.

What we think the drawbacks are

- The treated water that currently leaves the treatment works and is returned to rivers might be providing benefits to the environment, this would be removed.

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Drought permits and orders

- All water companies have a license from the Environment Agency to take water from rivers, lakes, boreholes and reservoirs for public water supplies.
- The licence ensures that we do not take too much water and leave enough for the environment and wildlife.
- However, during a drought when water supplies are low, we may apply to the Environment Agency for drought permits or drought orders.
- Drought permits and drought orders are drought management actions that, if granted by the Environment Agency, can allow us to more flexibly manage water resources.
- For example, if the level of water in our reservoirs is low, we could potentially ask to take more water than normal from some of our rivers to compensate and keep customers supplied with drinking water. These actions increase the chances of the reservoirs refilling when the weather gets wetter.

Why is this option being considered?

Drought permits and orders help us to meet demand during a dry weather event/ drought.

This could reduce the chance of customers experiencing restrictions and hosepipe bans.

What we think the benefits are

- Customers would not have to experience temporary use bans (e.g. hosepipe bans) or other water restrictions which are disruptive to everyday life.
- UU already has the infrastructure in place to abstract (take) the water, so it could be utilised relatively quickly in a drought if permission is granted by the Environment Agency (EA).

What we think the drawbacks are

- An environmental consideration is that water sources are likely to already be stressed and showing low water levels owing to the drought conditions so it may negatively impact the environment, such as habitats for plants and wildlife.
- Drought permits may also impact on businesses or other users of water bodies and in some cases this may impact on tourism or the local economy.
- Reducing the frequency of drought permits will require investment, which would be reflected in customer bills.

SUPPLY

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FAIRLY HIGH

Level of investment required

FAIRLY LOW

Environmental impact

VERY NEGATIVE

Level of disruption

NO IMPACT

Carbon emissions impact

NO IMPACT

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Water for the North West

License trading

- The amount of water we can abstract (take) from sources is governed by the abstraction licence we have been granted by the Environment Agency.
- We could buy or sell abstraction licence rights from or to other individuals, companies and organisations.

Why is this option being considered?

This would increase the resilience of our supply and reduce the chance of water restrictions (like hosepipe bans) during dry weather events/ droughts.

Licences would be used that would otherwise be providing surplus water to other companies or an area, and this can be used to meet demand elsewhere.

What we think the benefits are

- Using water that is already licensed could be less damaging to the environment.

What we think the drawbacks are

- Operationally, it will take time to integrate the new sources into the system.
- May be some environmental impacts incurred to get the water into our network, depending on where the licence is.

SUPPLY

Making sure there's enough water when you turn on your taps

Level of improvement	Level of investment required	Environmental impact	Level of disruption	Carbon emissions impact
FAIRLY HIGH	FAIRLY HIGH	FAIRLY POSITIVE	NO IMPACT	FAIRLY NEGATIVE

Receiving alternative water supplies in drought

- In dry weather, our water sources (e.g. rivers, reservoirs and groundwater) may have varying water levels in different locations. In times of water scarcity, a mixture of ground water and water from rivers and reservoirs could be used together to boost supply (this is known as conjunctive use).

Why is this option being considered?

To increase supply and resilience to dry weather events.

What we think the benefits are

- Would help to provide a resilient supply across the entire UU system.
- Customers would be less likely to experience water use restrictions (e.g. hosepipe bans) in dry weather.

What we think the drawbacks are

- This would cost money and could cause noise disruption if you live nearby.
- Customers could experience a change in taste of their water.

SUPPLY

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Level of improvement

FAIRLY HIGH

Level of investment required

FAIRLY LOW

Environmental impact

FAIRLY POSITIVE

Level of disruption

NO IMPACT

Carbon emissions impact

NO IMPACT

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Leakage and water losses

- Reducing the amount of raw water that is lost (raw water losses).
- United Utilities can reduce leakage further by implementing new control systems to manage the pressure in pipes better.
- United Utilities can also employ more resources to find the leaks and then carrying out repairs, or upgrade to newer mains.
- There are also other options available such as acoustic loggers (to detect leaks) and, more recently, we have even trained a sniffer dog to help pinpoint problem pipes in rural areas.

Why is this option being considered?

Identifying raw water losses and leakages and resolving them will help with the supply demand balance.

What we think the benefits are

- More resilient supply. Fewer losses of water (and money).
- Addressing leakage reduces demand for water and the amount UU has to take from the environment (e.g. rivers), potentially helping wildlife.
- It could help to avoid localised flooding if mains burst.

What we think the drawbacks are

- It will cost money to make any repairs/ reduces losses, which could have an impact on customer bills.
- Temporary disruption of traffic and pedestrians in the local area from construction (noise and congestion).

SUPPLY

Making sure there's enough water when you turn on your taps

Level it solves the issue

VERY HIGH

Level of investment required

FAIRLY LOW

Environmental impact

FAIRLY POSITIVE

Level of disruption

VERY HIGH

Carbon emissions impact

FAIRLY NEGATIVE

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Water Meters

- Increasing the amount of customers who have water meters means people pay for what they use and typically can result in customers reducing how much water they use, perhaps by also making use of water saving devices.
- In 1990 it became compulsory for all newly built homes to be fitted with a water meter.
- When you move into a home which already has a water meter fitted, you cannot make a request for it to be removed.

Why is this option being considered?

Effective way of managing demand and can bring bill benefits to customers.

What we think the benefits are

- Metering reduces demand for water and therefore also reduces the amount United Utilities has to take from the environment (e.g. rivers), potentially helping wildlife.
- Our 'lowest bill guarantee' means that the customer will not be worse off financially with a meter during a two year trial.
- Some customers can save money by moving to a meter.
- Customers can go back to the old rateable value bills if a saving has not been made.

What we think the drawbacks are

- Some customers will pay more for their water on a meter and some will pay less.
- People may need to change how they use water to minimise costs or realise savings.
- This option is dependent on customers opting for a meter and is not compulsory.

DEMAND

Understanding how customers use water and how we can make this more sustainable

Level it solves the issue

VERY HIGH

Level of investment required

FAIRLY HIGH

Environmental impact

VERY POSITIVE

Level of disruption

FAIRLY HIGH

Carbon emissions impact

FAIRLY POSITIVE

in the flow

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Water for the North West

Fees, Tariffs and charges

In order to reduce demand, fees and tariffs could be introduced to influence customer behaviour. These could take a number of forms. Examples could include:

- Time of Day tariffs (e.g. water cheaper at off-peak times)
- Reduce bill by an agreed amount if the property has water efficient products fitted.
- Introduction of special fees – charge special (additional) fees on households who use garden sprinklers, hosepipes, outside taps or swimming pools.
- Water efficiency incentives for business customers (one-off payment towards the cost of water efficiency interventions)

Why is this option being considered?

Methods of reducing demand and helping to ensure we have enough supply.

What we think the benefits are

- These fees and tariffs could result in bills decreasing if you are water efficient and on a meter.
- Taking less water for supply due to a reduced demand leaves more water for wildlife.

What we think the drawbacks are

- Some customers could face higher bills if their water practices remain the same.

DEMAND

Understanding how customers use water and how we can make this more sustainable

Level it solves the issue

VERY HIGH

Level of investment required

FAIRLY LOW

Environmental impact

FAIRLY POSITIVE

Level of disruption

NO IMPACT

Carbon emissions impact

FAIRLY POSITIVE

Water efficiency

- Promoting water efficiency involves educating customers of the benefits of saving water and may include giving away or selling water saving devices like showerheads, water butts or services to reduce water losses such as fixing leaky toilets.

Why is this option being considered?

Effective way of managing demand and can bring bill benefits to customers.

What we think the benefits are

- If the customer has a water meter there will be cost savings on bills.
- Water efficiency devices reduce demand for water and therefore also reduces the amount UU has to take from the environment (e.g. rivers), potentially helping wildlife, it also reduces the amount of wastewater being sent for treatment potentially reducing capacity constraints.

What we think the drawbacks are

- Water efficiency devices might have costs associated with them.
- Customer behaviour changes are difficult to guarantee.
- Water efficiency measures can sometimes increase blockage risk in the sewers. If there isn't enough water coming into the sewer then wipes and other 'unflushables' are even more likely to build up and cause a blockage.

DEMAND

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Level it solves the issue

VERY HIGH

Level of investment required

FAIRLY LOW

Environmental impact

VERY POSITIVE

Level of disruption

NO IMPACT

Carbon emissions impact

FAIRLY POSITIVE