

Grand Union Canal Transfer Public Consultation

September / October 2024



Grand Union
Canal Transfer

Bringing water from the
Midlands to the Southeast



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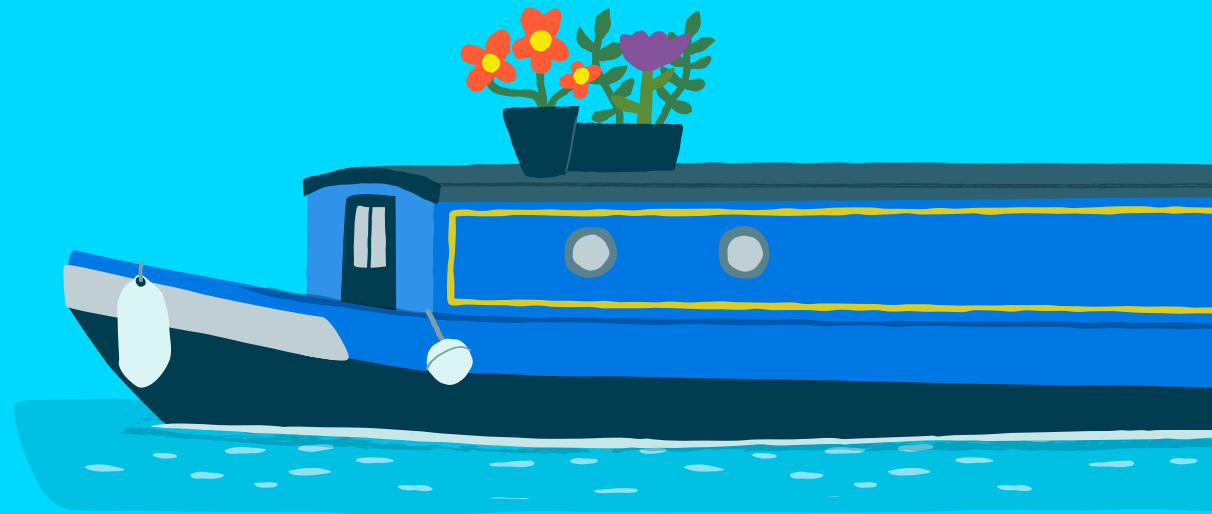
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Chapter 1

Introduction



Introduction to the Grand Union Canal Transfer

The Grand Union Canal Transfer is a vital new scheme to bring water from the Midlands to the Southeast. It's a joint water transfer project between two water companies, Severn Trent and Affinity Water, and the Canal & River Trust charity ('the Trust') who are the owner and navigation authority of the canals in England and Wales.

Severn Trent

Severn Trent is one of the largest regulated water and sewerage companies in the UK, providing water and waste services to more than 4.5 million homes and businesses in the Midlands, from the outskirts of Bristol to the southern suburbs of Sheffield.



Affinity Water

Affinity Water is the UK's largest water-only supply company. It provides, on average, 950 million litres of water each day to more than 3.8 million people in parts of Bedfordshire, Berkshire, Buckinghamshire, Essex, Hertfordshire, Surrey, the London Boroughs of Harrow and Hillingdon and parts of the London Boroughs of Barnet, Brent, Ealing, and Enfield.



Canal & River Trust

The Trust is the UK's largest canal charity, caring for a 2,000-mile network of historic canals and navigable rivers, attracting 800 million unique visits to the network and supporting 85,000+ waterway dependent jobs. Its canal network is used by more boats now than at the peak of the Industrial Revolution and connects many of the UK's urban and rural areas, providing essential spaces for wildlife and people, helping us all feel happier and healthier. It manages several existing water transfer schemes.



This booklet contains:

- An introduction to the Grand Union Canal Transfer
- A summary of the plans we're consulting on
- How you can respond to this consultation
- Next steps for the scheme, explaining how and when you'll get further opportunities to have your say

National Framework for Water Resources

The Environment Agency published the National Framework for Water Resources in 2020, transforming the way water companies plan future water supplies in England. Its purpose is to promote collaboration between companies and regions to deliver a national network of water resources that takes surplus water and supplies it to areas with greater demand.

About the scheme



We're working together to develop the Grand Union Canal Transfer, which will secure future drinking water supplies, protect the environment, ensure future water availability for canal navigation, and unlock investment in our communities.

The canal network has transported people and goods for over two centuries and it's busier now than ever before. More boats and people are visiting, and living on or by the canals, and it's supporting waterway dependent businesses. We now want to use it to help transfer recycled water from the Midlands to the Southeast via the Coventry, Oxford, and Grand Union canals in addition to their navigation role.

Our water supply is under increasing pressure from population growth, the effects of climate change, and the aim to reduce the amount of water taken from the environment to protect fragile ecosystems. This scheme is key to delivering a sustainable and reliable water supply for the future in the Southeast and reducing our reliance on water from other sources, including unique chalk stream habitats. It will also

secure future water availability for canal navigation.

We've developed the scheme through the RAPID* Gated Process, which was set up by our regulators to oversee major water resources development like the Grand Union Canal Transfer. Through this process we've made submissions to our regulators setting out technical work and assessments to explore the feasibility and cost of the scheme.

The scheme would ultimately be funded through Affinity Water customer bills, but in accordance with Ofwat's requirements (the water industry regulator) we are exploring potential options for a third-party entity to finance, construct and operate it.

This funding model has been used on other projects and Ofwat is keen that we explore similar options for the Grand Union Canal Transfer. We'll provide more detail on this as the scheme develops.

We've been carrying out early work over a number of years to understand how the transfer would work and what infrastructure could be required to facilitate it. We're now at a stage where we can present more information on this and we'd like your help in developing our proposals further.

Strategic regional planning for water resources

Water Resources West and Water Resources South East have prepared and consulted on Regional Plans, setting out details about water supplies for their region. These plans both select the Grand Union Canal Transfer scheme as a new regional water resources solution, to be in use by the early 2030s. Water company plans are required to align with these regional strategies.



*RAPID stands for Regulators' Alliance for Progressing Infrastructure Development. It's an advisory board made up of our regulators and recommends to Ofwat (our economic regulator) on whether to continue funding the development of strategic resource options

Potential benefits of the scheme

As well as the benefits of transferring water for customers, there are opportunities at many locations along the scheme to bring further long-term improvements to the environment, local communities, canal customers and users. While we're still at a very early stage in the scheme's development, we're exploring opportunities for additional benefits, by talking to you about the scheme and understanding the potential impacts our plans may have on your local communities and the environment.



For our water resources

- Strengthen the UK's water infrastructure and create a legacy of resilient water resources to supply customer drinking water and canal navigation, for future generations.



For our environment

- Explore ways to leave the environment in a better state than we find it by:
 - Enhancing biodiversity, including Biodiversity Net Gain*.
 - Carrying out surveys to understand what species are present.
 - Providing additional wetland habitats to enhance the environment and help manage flows and alleviate potential floods.
 - Use the existing canal infrastructure sustainably to reduce the need for additional infrastructure to transfer water.



For all our communities

- Identify enhancements to the recreational value of the canals and local areas, for the benefit of people visiting, living and working on and by the canals.
- Improve the resilience and reliability of our drinking water supply by recycling readily available treated wastewater, that's transferred via the canal, and then supplied to our customers' taps.
- Support jobs and the local economy, during and after construction.



For our canal users

- Deliver a year-round supply of water from the Midlands to the Southeast, and increase the resilience of the canals during times of drought when the usual feed of water for navigation would run low.
- Explore ways to enhance the aging canal infrastructure along the route to improve its resilience against climate change, helping to secure its long-term sustainable future, keeping it open and alive, resilient and safe, and maximising its value to people, nature and the economy.
- Provide a revenue stream for the Trust through a new commercial arrangement with the water companies, to enable improvements to the existing canal network and secure its benefits, now and in the future.

* Biodiversity Net Gain (BNG) is a way of creating and improving natural habitats. BNG makes sure development has a measurably positive impact ('net gain') on biodiversity, compared to what was there before development.

Why do we need this scheme?



We need to protect our environment and maintain our water supply

Balancing increasing demand for water while protecting and improving the environment is essential. Our forecasts show that Affinity Water will need more water in the future and that water will need to come from new sources. The Southeast is home to eight key rivers, and dozens of rare, iconic chalk streams of international importance. This scheme will transfer water to those areas historically supplied from chalk stream catchments, enabling more water to be left in chalk streams.



We're planning for the future

Water is essential to our everyday life, wellbeing, and environment. It's a precious resource and considering how we manage our water is vital to securing sustainable water supplies for the future and everyone who needs it. Without action, the area that Affinity Water supplies is facing a possible shortfall of 449 million litres a day by 2050.



Our population is growing

The challenge to protect our future water supplies is a national one and this scheme helps ensure existing customer water supplies are maintained whilst accommodating future growth.



We need to preserve our canals for future generations

The Trust's 250-year-old canal network is being damaged by climate change events such as floods and droughts. We're investing in the resilience of the canal network for the benefit of communities, today and for future generations. By transferring water through the canal network, we'll improve water availability, asset resilience and biodiversity – helping to keep the canals alive and open for navigation.



We're experiencing more droughts and more frequent climate change events

We risk needing more severe restrictions on how we use water unless we increase the amount of water we have available. This scheme will allow us to provide a more resilient supply of drinking water to Affinity Water's customers.



Long-term planning to secure future water supply

The National Infrastructure Commission estimates that 'additional water supply and demand reduction totalling 4,000 million litres per day should be delivered by 2050 – the equivalent of well over 22 million bathtubs of water.' Providing new sources of water is an essential part of the solution.

Water Resource Management Plans, or WRMPs, are statutory documents that all water companies must produce at least every five years. They set out how water companies intend to achieve a secure supply of water for their customers, while protecting and enhancing the environment.

Affinity Water and Severn Trent each have their own WRMP and within that will collaborate on a strategic resource option called the Grand Union Canal Transfer.

Find out more about Affinity Water's WRMP at:

affinitywater.co.uk/corporate/plans/water-resources-plan

Find out more about Severn Trent's WRMP at:

severntrent.com/about-us/our-plans/water-resources-management-plan



How our water system works

Where does our clean water come from?

The water that comes out of your tap at home can be sourced from many locations including rivers, groundwater aquifers, reservoirs, and, in some places, directly from the sea. The water is then cleaned or 'treated' to remove contaminants from the atmosphere, industry, or agriculture, to make sure it's safe to drink.

How does clean water get to our homes?

Regardless of the water source (groundwater, surface water or recycled water) it's cleaned or 'treated' by water companies. Teams of expert scientists sample our water daily to make sure there are no harmful substances in the water.

Clean water is delivered to customers through an extensive network of pipes, underground storage tanks, and water towers. From the storage facilities, it moves into underground water pipes, which carry water to taps in your home. When we open the tap, the pressure in the pipes pushes the water out.

The safety and quality of our drinking water is, and always has been, our top priority, and the water we provide is some of the highest quality in the world. The Drinking Water Inspectorate was formed to provide independent reassurance on the quality of this drinking water in the UK.

Water recycling process

In going about our everyday lives, we use a lot of water for washing, cooking, going to the toilet and much more. Together with rainwater that runs off roofs and roads, this water is known as wastewater.

The wastewater is collected and goes through a rigorous treatment process at a wastewater recycling centre. After the final treatment, the recycled water is clean and can be returned to a watercourse for the cycle to repeat.

The quality standard of final water put into a watercourse is determined by the Environment Agency and can vary depending on the water's destination. The water companies and Environment Agency ensure the quality of the water. Where there is a need for a very high quality, additional treatment to remove organic matter and/or nutrients is installed.

Water is tested at every part of its journey to make sure that it meets high-quality standards.

Using recycled water (once treated to drinking water standards) for customer use is already happening in some parts of England as well as having a long history of use in Singapore, Australia and across the USA.

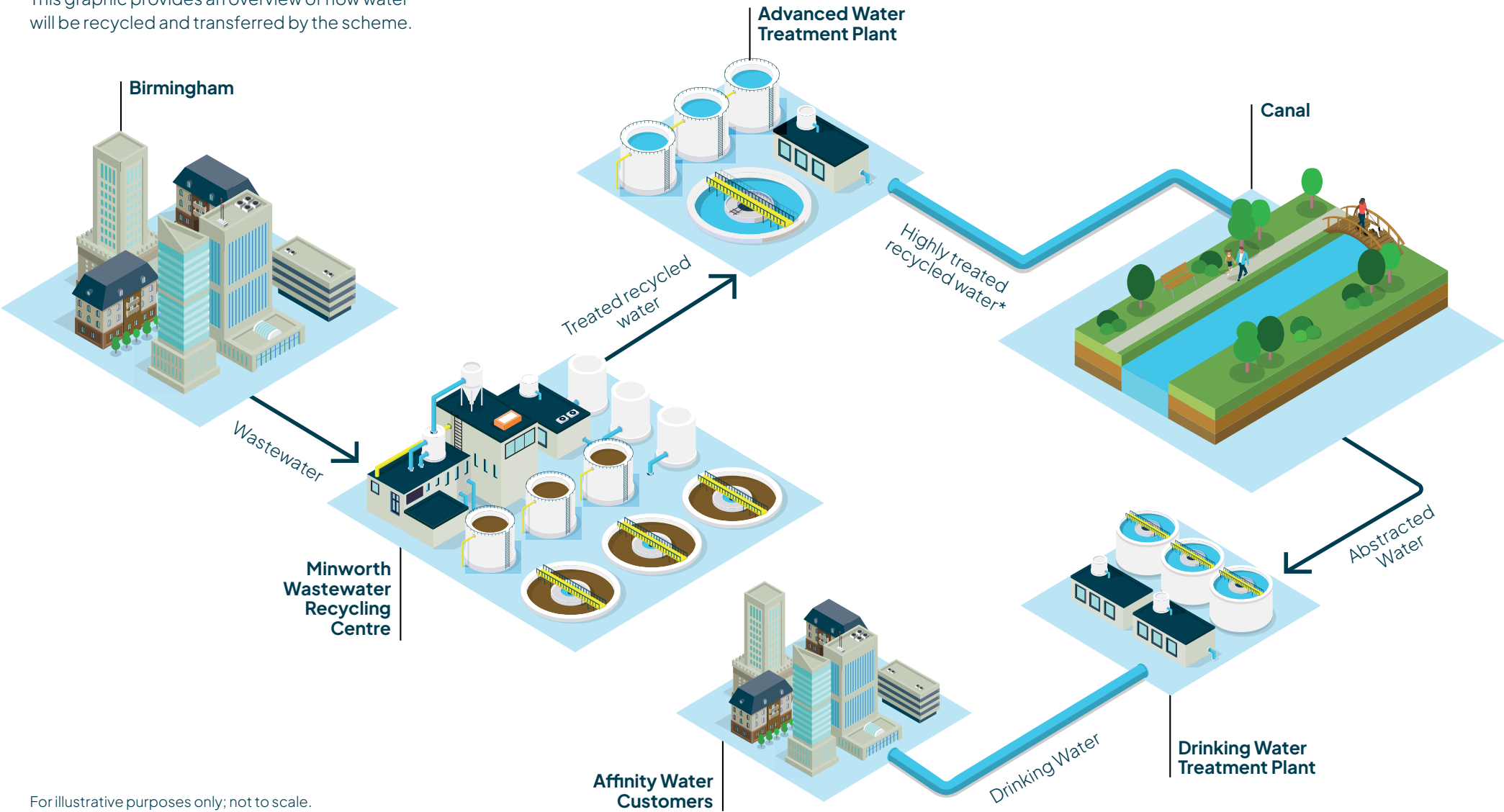
Find out more at:

dwi.gov.uk/water-recycling/



A step-by-step overview of the scheme

This graphic provides an overview of how water will be recycled and transferred by the scheme.



For illustrative purposes only; not to scale.
*No untreated wastewater can enter the canal

What are we proposing?

We'll need a combination of new pipelines, water treatment plants and other infrastructure, as well as investment in the canals to enable water to be transferred through them.

As identified through the WRMP process, we're currently proposing to start our scheme at the Minworth Wastewater Recycling Centre near Birmingham, where water is planned to be transferred via a new pipeline to Atherstone in Warwickshire. It will then begin its journey along the Coventry, Oxford and then the Grand Union canals.

The water from Minworth's Wastewater Recycling Centre is treated recycled water, which would usually be discharged into the River Tame. Under the scheme, some of this recycled water will be diverted to a new advanced water treatment plant that will bring it to the required quality for transfer through the canal, and ensure the safeguarding of fish and wildlife is maintained.

Once it's been transferred through the canal network, the water will be piped from the canal, stored and treated again at a new water treatment works, before being transferred as clean drinking water into Affinity Water's supply network for customers.

To help you identify the main areas of the scheme, we've split it into three key sections which are shown on the map on page 14.



An example of a wastewater recycling centre



Chapter 2

Have your say



Have your say and get involved

We want you to help shape our proposals at this early stage. The views of people living and working on and along the route, as well as those using the canals for business, recreation, and leisure, are a very important part of how the scheme will be designed, built, and maintained.

We're running our first public consultation for six weeks from **Wednesday 11 September to Friday 25 October 2024**. During this time you can find out more about the scheme and provide your input and views.

We'll be holding a series of consultation events and pop-up events at various locations which will provide opportunities to talk to us and find out more about some of the activities and proposed enhancements we'll need for the scheme.

We've set these out in the table on the next page.

Why are we seeking your views?

Hearing from our communities, landowners, and other stakeholders is a central part of the process and we encourage you to get involved in this transformative water transfer scheme to secure and support future water supplies. Your comments will help us understand the local area, and any potential impacts our proposals may have on the community and the environment.

After the consultation, we'll carefully consider all the community feedback we've received, as well as input from local authorities, environmental bodies and other interest groups, and take this on board to help shape our plans.

The feedback, and how we've listened to this, will be summarised in a report which we'll publish on our website. We'll be holding another public consultation next year to present our updated proposals and provide another opportunity to have your say on the scheme.

How to take part

You can provide your comments and feedback on our plans:



Online: complete and submit a feedback form on our website: www.guctransfer.co.uk/haveyoursay



Email: email your feedback to contact@guctransfer.co.uk



Freepost: post a feedback form or a written response to **Freepost GRAND UNION CANAL TRANSFER** (no stamp required).

Any questions?

Contact the team by emailing us at contact@guctransfer.co.uk

or by calling us on **0121 270 5920**
Monday – Friday, 9:00 – 17:00



Accessibility

If you or someone you know has questions about the project and would prefer to speak to someone directly, please call us on **0121 270 5920** and one of our team will help you.

If you or someone you know requires copies of our consultation materials in accessible formats or an alternative language, please contact us using any of our contact methods.

If you'd like a printed copy of our consultation brochure, feedback form or any of our maps, please call us on 0121 270 5920

Consultation events

Larger community events where you can meet our technical experts, view large scale maps and provide your feedback

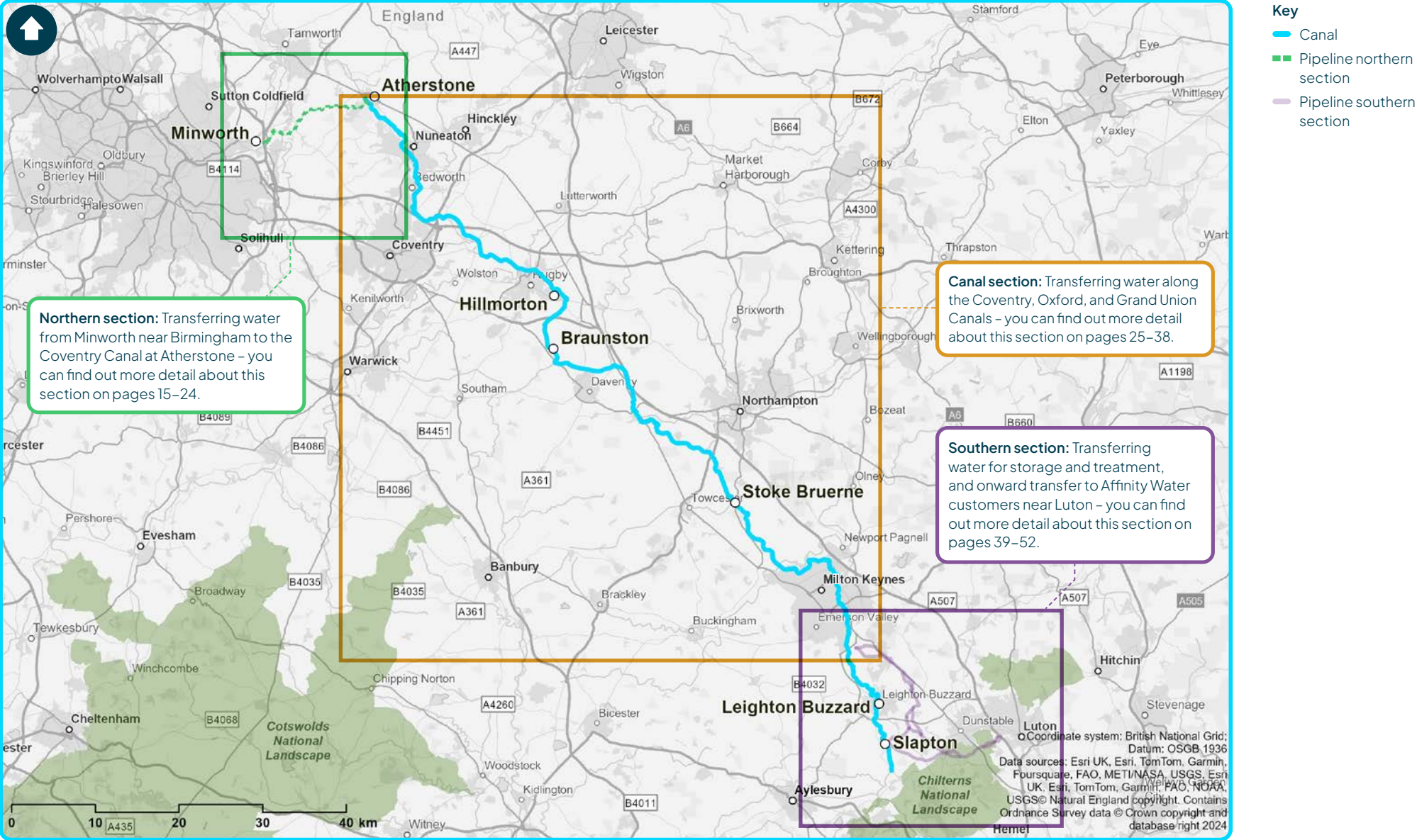
Location	 Date / Time
Atherstone Owen Street Community Arts Centre, Owen St, Atherstone CV9 1DG	Saturday 21 September 11:00 – 15:00
Slapton Elizabeth Griffin Memorial Hall, Church Rd, Slapton, Leighton Buzzard LU7 9BX	Monday 23 September 16:00 – 20:00
Eaton Bray Eaton Bray Methodist Church, Totternhoe Rd, Eaton Bray, Dunstable LU6 2BD	Tuesday 24 September 16:00 – 20:00
Chaul End Lyons Community Centre, 33a Mallard Cres, Caddington, Luton LU1 4FG	Wednesday 25 September 16:00 – 20:00
Curdworth Curdworth Village Hall, 70 Coleshill Rd, Curdworth, Sutton Coldfield B76 9HH	Friday 27 September 16:00 – 20:00
Daventry Daventry Community Centre, Ashby Rd, Daventry NN11 0QE	Saturday 28 September 11:00 – 15:00
Hurley Hurley Village Hall, 41 Knowle Hill, Hurley, Atherstone CV9 2JD	Wednesday 2 October 16:00 – 20:00
Leighton Buzzard Astral Park Community Centre, Johnson Drive, Leighton Buzzard LU7 4AY	Friday 4 October 16:00 – 20:00
Great Brickhill Great Brickhill Community Centre, Rotten Row, Great Brickhill, Milton Keynes MK17 9BA	Saturday 5 October 11:00 – 15:00

Pop-up events

Smaller events along the canal to ask our team questions and take away material

Location	 Date / Time
Fenny Stratford Junction Opposite side of the canal from the Red Lion, 11 Lock View Ln, Fenny Stratford, Bletchley, Milton Keynes MK1 1BY	Saturday 28 September 9:30 – 12:30
Grove Lock Opposite side of the canal from the Grove Lock, Grove, Leighton Buzzard, Bedfordshire LU7 0QU	Saturday 28 September 14:30 – 17:30
Stoke Bruerne Lock Bypass Near the Canal Museum, Stoke Bruerne, Bridge Rd, Stoke Bruerne, Towcester NN12 7SE	Thursday 3 October 10:30 – 13:30
Braunston Junction Near Union Canal Carriers, Dark Ln, Braunston, Daventry NN11 7HJ	Friday 4 October 10:30 – 13:30
Hawkesbury Junction Near the Hawkesbury Junction Pump House, opposite side of the canal from The Greyhound, Sutton Stop, Coventry CV6 6DF	Saturday 5 October 9:30 – 12:30
Hillmorton Locks Opposite side of the canal from the Canalcchef Cafe, Badseys Wharf, The Locks, Hillmorton CV21 4PP	Saturday 5 October 14:30 – 17:30

To help you identify the main areas of the scheme, we've split it into three key sections which will be explained in more detail later in this brochure. In summary:



Chapter 3

Northern section – our proposals



Transferring water from Minworth to the Coventry Canal at Atherstone

We're proposing to start our scheme at the Minworth Wastewater Recycling Centre near Birmingham, where recycled water is planned to be transferred via a new pipeline to Atherstone in Warwickshire. From here, it'll begin its journey along the Coventry, Oxford and then the Grand Union canals.

Minworth Wastewater Recycling Centre lies to the northeast of Birmingham between the villages of Minworth and Curdworth. It's the city's principle wastewater recycling centre, treating wastewater across Birmingham and the Black Country. In addition to using the existing centre at Minworth, we'll need to build an Advanced Water Treatment Plant (AWTP) on the same site.

Choosing the location for the Advanced Water Treatment Plant

We looked at various locations and Minworth Wastewater Recycling Centre was identified as the best option for a new AWTP.

Minworth was acknowledged as the optimal place to locate the new AWTP from an environmental and supply

perspective - locating the site partly within the existing works reduces operational risk relating to flow, transfer and treatment.

When we selected the land on the Minworth site to house the AWTP, we had to consider the future operational needs of the Wastewater Recycling Centre as a whole. The site needs to remain flexible to accommodate future impacts of population growth and environmental initiatives and ensure it can continue to treat the wastewater from the Midlands accordingly.

To read more about this preparatory work, please see our [Site and Route Evaluation Report](#).

Selecting the location of the Advanced Water Treatment Plant



Feasibility (2021 – 2022)

Working closely with the Environment Agency and the Drinking Water Inspectorate we explored options for treatment at Minworth. An outline solution was identified for Affinity Water's Water Resources Management Plan



Early review (January 2023)

Further engagement with the regulators and the operational teams at Minworth looked into treatment requirements and potential footprint



Understanding options (December 2023)

Working closely with the environment, land and planning teams we looked further into potential areas to site the Advanced Water Treatment Plant



Site selection (April 2024)

Based on detailed operational review the proposed location of the Advanced Water Treatment Plant was chosen for consultation

The new infrastructure



What will we need to build at the site?

We're still developing detailed designs for our AWTP but we expect the entire footprint of the site will be around 150 metres by 280 metres. Within this area we'll need to site buildings, pipelines and storage equipment as well as a wetland area. The tallest equipment will be a maximum height of 15 metres, but most of our equipment will be lower than this.

We'll also need to build a new pumping station on the existing Minworth site to transfer the water to Atherstone and into the canal network.

This will pump water uphill along the buried pipeline, where water can't flow naturally via gravity and it'll be placed within the total footprint of the new AWTP.

It'll mark the starting point for our new pipeline.

How will we consider the environment?

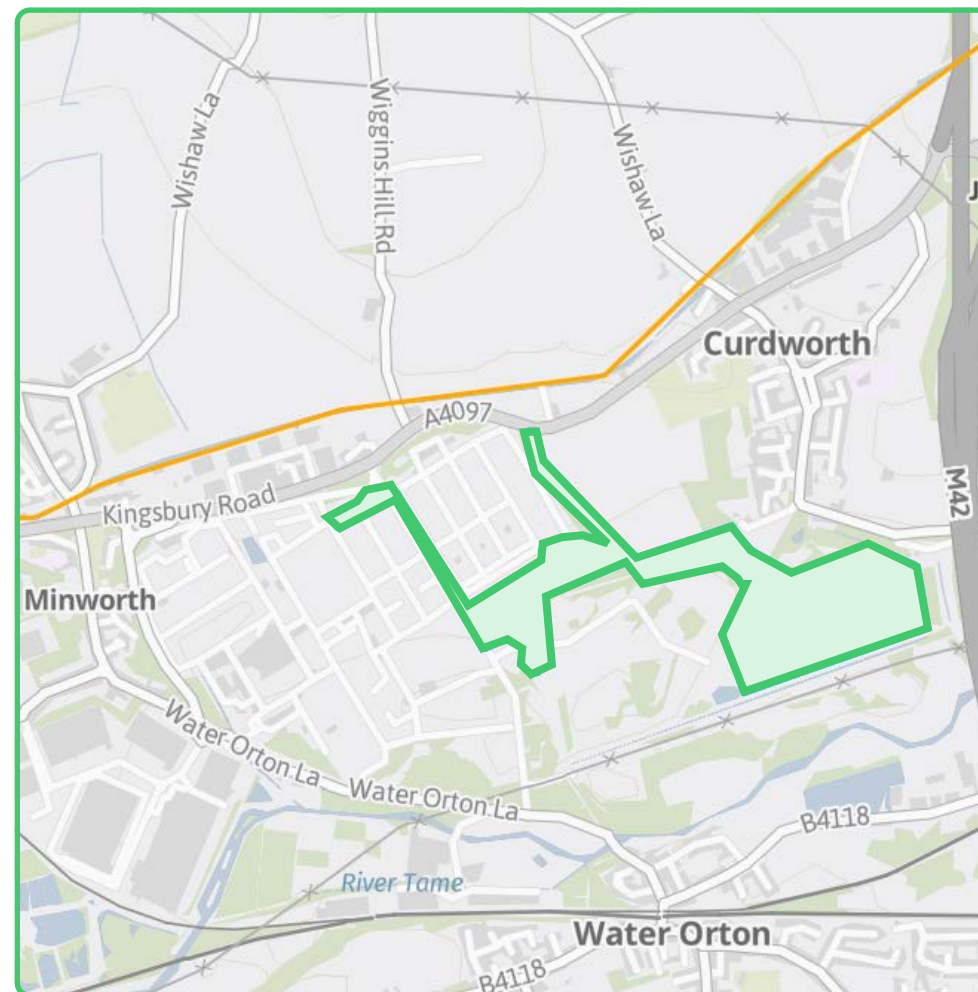
Our team is committed to improving the environment, and we'll be delivering Biodiversity Net Gain (BNG) on this project. Possible options include looking to create natural wetland sites.

Our environmental work will also consider potential impacts on local people from construction and operation, so we can look at opportunities to avoid or reduce these.

More details on our approach to the environment, can be found on page 54.



Site location of AWTP at Minworth Wastewater Recycling Centre



Why do we need an Advanced Water Treatment Plant?

The water from Minworth Wastewater Recycling Centre is highly treated, recycled water, which would usually be discharged into the adjacent River Tame. To make sure the water is of the right standard to be transferred through the canal network, some of this recycled water will be diverted to a new AWTP. This uses the required standards of technology to treat water to an even higher standard to protect the quality of the water in the canal.

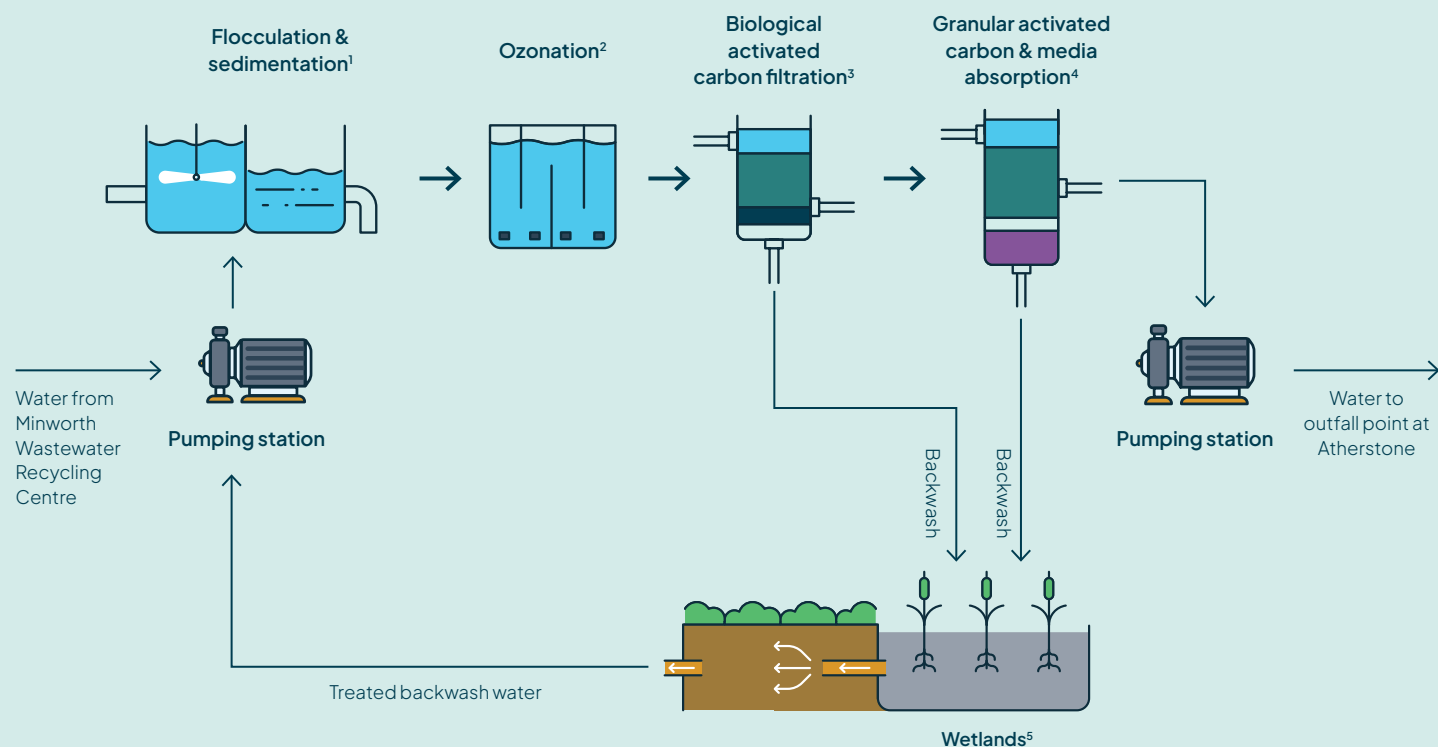
Pumping of the water to the canal will stop at any point if there are any issues and the quality of treated water drops below the required standards.

You can read more about the process on pages 8 and 9.

Have your say!

We'd like you to provide any information you think is important to inform the development of a detailed design for the site, including ways we can mitigate any potential impacts to the nearby communities.

The advanced water treatment process



¹ **Flocculation and sedimentation** – this process reduces solid materials, phosphorus and other particles as the first part of the treatment process.

² **Ozonation** – this process breaks down organic matter into smaller molecules which makes treatment easier; it also partially disinfects.

³ **BAC Filtration** – activated carbon helps to develop a biological community which then helps to breakdown the organic materials and sand filters out any solid materials.

⁴ **GAC/ Enhanced media absorption** – this is a final stage of treatment that removes some of the final trace organic materials and enhanced media absorption is an additional treatment to remove specific priority hazardous substances.

⁵ **Wetlands** – this nature-based solution provides environmental and economic benefit by treating the backwash materials and reducing the use of chemicals and pumping. It also has the advantage of adding an area for fauna and an opportunity for social value for local residents.

Choosing the route for the pipeline

To move the water from our proposed new AWTP to the canal network, we looked at lots of different options. This included connecting to the canal closer to Minworth, as well as several different potential pipeline routes.

To read more about this preparatory work, please see our [Site and Route Evaluation Report](#).

Selecting routes for the pipeline



Feasibility (2021 – 2022)

We looked at different ways to transfer the water (the different combinations of pipeline and canal) as well as routes east and west from Minworth. The route across to Atherstone was assessed as the best option. An example pipeline from Minworth to Atherstone was identified for Affinity Water's Water Resources Management Plan



Early review (January 2023)

We further reviewed potential pipeline corridors from Minworth to Atherstone looking at the overall route



Understanding options (December 2023)

We plotted routes to consider impacts on the environment, engineering suitability, land and planning considerations and costs to customers



Detailed assessment (July 2024)

We began some early surveys with ecologists, and pipeline contractors to identify potential obstacles on the ground. The overall corridor was confirmed for consultation with two options identified for connecting to the canal near Atherstone

Have your say!

If there is anything you think we should have considered in our early work to identify a preferred corridor, let us know.

More information about the pipeline and outfall



The pipeline will be approximately one metre in diameter and at this stage, we expect it will be made from steel. Typically, it will be buried to a minimum depth of 1.2 metres from the top of the pipe. You can read more about how we'd construct a pipeline on page 58.



We propose to construct the pipeline within our preferred corridor, which varies in width. As the project develops, and we come back to communities for further consultation, we'll have defined a narrower route that will represent more closely where we expect the pipe to run.



The first 15 km of our pipeline will be uphill, rising to a high point roughly 5 km to the west of Atherstone. At this point, the water will flow through a buried level-controlled break pressure tank* south of Merevale and be transported via gravity for the remaining 5 km, to an outfall point into the Coventry Canal at Atherstone.



The outfall will be housed in a small building on the side of the canal. The pipe enters underground while energy recovery turbines will be housed in the building. The water will move from the pipe to a tank and then out into the canal via a weir structure. We'll also have monitors to measure the flows going into the canal to ensure no disruption to navigation or wildlife.

The pipeline corridor

We've identified a route for our buried pipeline to connect the scheme from Minworth to the canal network. The current corridor is the widest possible area we would route the pipe within and is typically around 200 metres wide. This is to help us route around any constraints we haven't yet identified. Following feedback from this consultation and further technical assessments, we'll refine our route and narrow our corridor to a likely 50m width for our next consultation.

We've considered several important factors for where the corridor will be, including:

- Interfaces with existing infrastructure
- Potential impact on local communities
- Built-up areas or sensitive buildings
- Areas protected for their habitats and species
- Areas that are vulnerable to flooding
- Local and national heritage
- Locations to access the canal network
- Whole life carbon costs and use of materials

To make the decision as to where we place the pipeline within the preferred corridor, we want to find out your views at this consultation, and we'll be having ongoing discussions with landowners. We'll also conduct more surveys to build on the work we've already carried out and to allow us to understand more about the local area it will be placed in. This will allow us to strike a balance between the competing factors we have to consider.

As our plans develop, we'll update you on this important decision at our next consultation.

To read more about this preparatory work, please see our [Site and Route Evaluation Report](#).

Have your say!

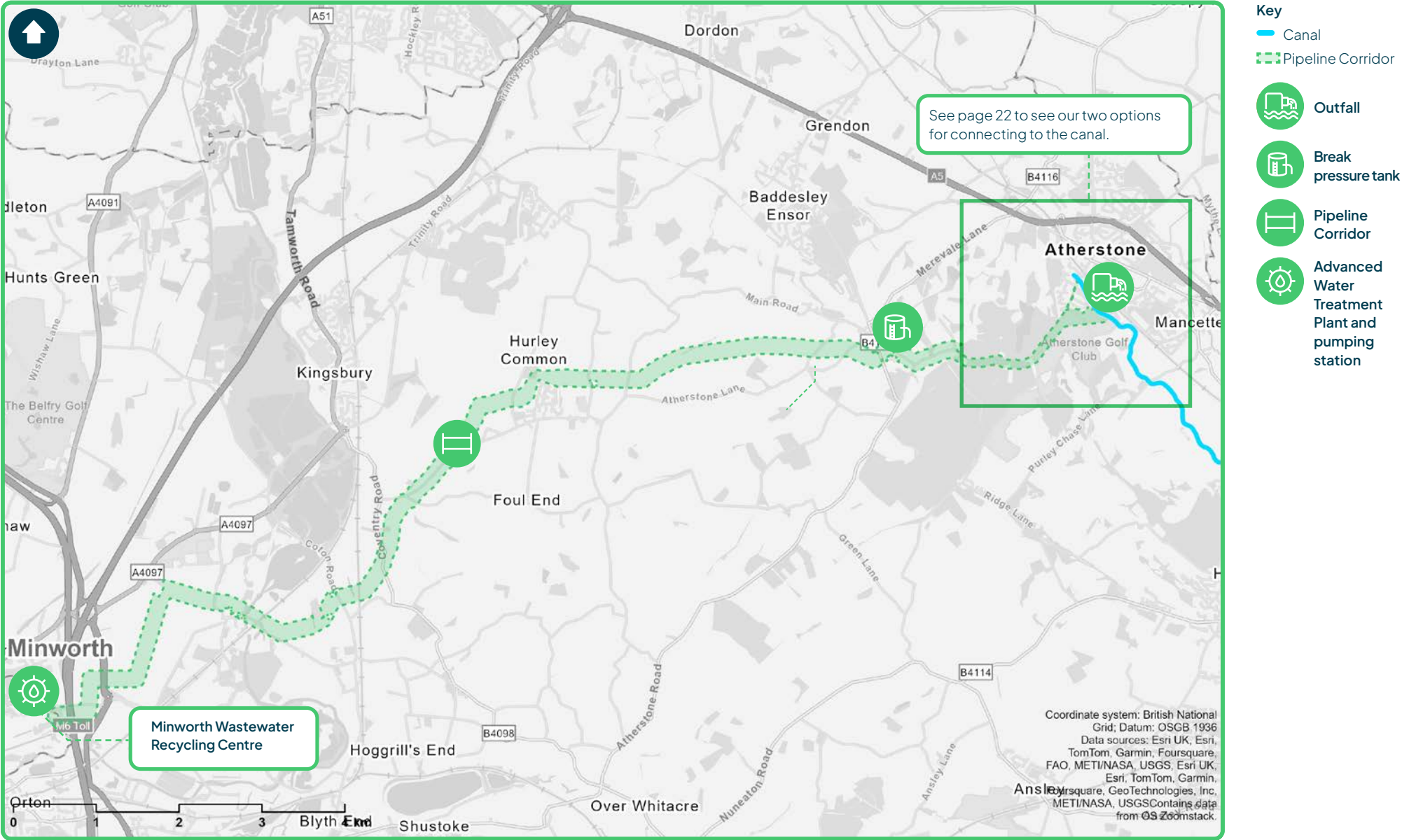


We'd like you to tell us if there's anything you think we need to consider in the local area as we refine our proposed pipeline corridor route between Minworth and Atherstone.

*A level-controlled break pressure tank is a store of water, which acts as a break between the 'pumped' section of the pipeline to the west, and the 'gravity' section of the pipeline in the east. This is buried infrastructure that controls the flow rate of water entering the canal.

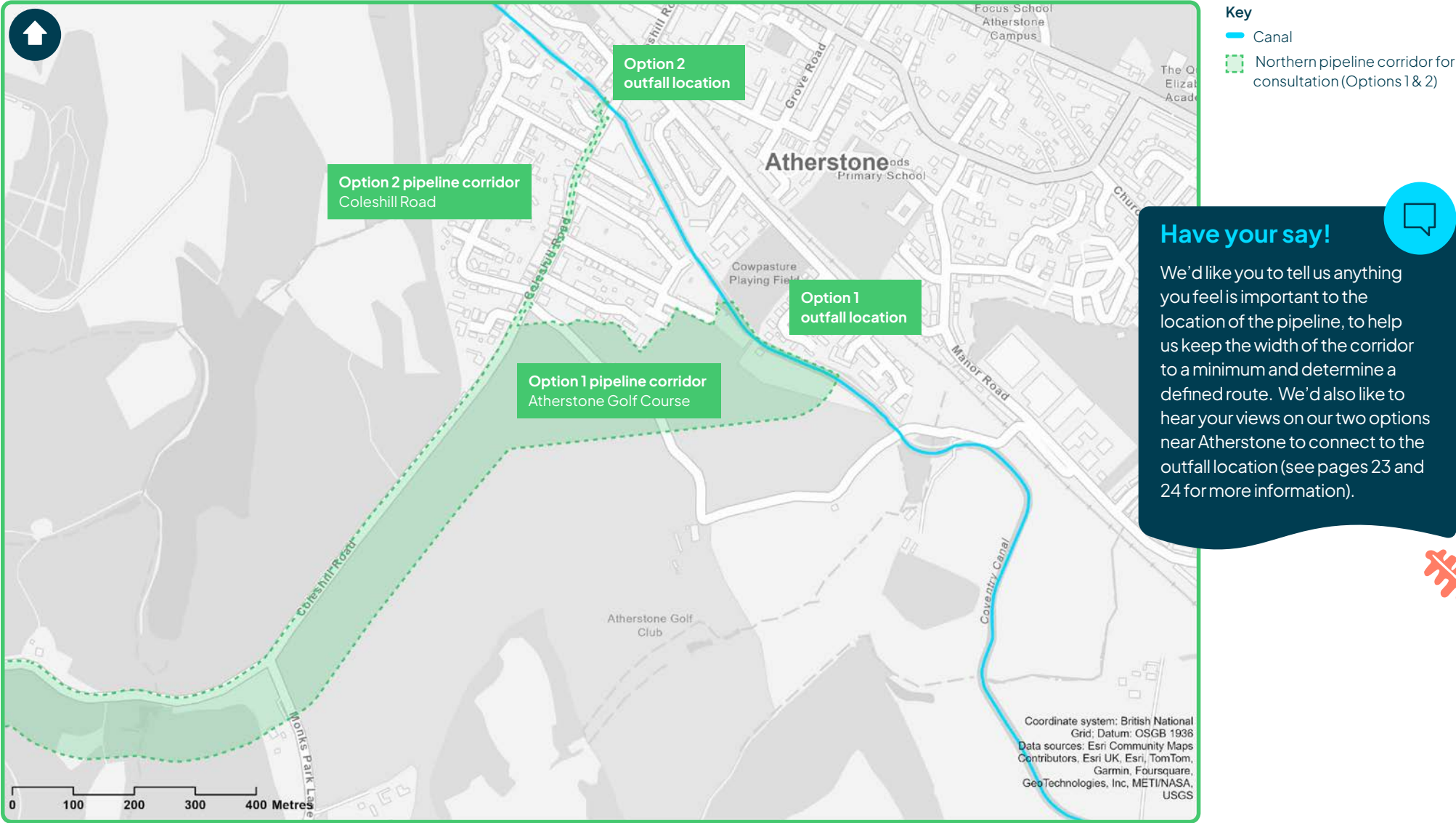


Minworth to Atherstone proposed infrastructure – this map shows the new infrastructure we'll need in this area.



Connecting to the canal near Atherstone

Our early routing work has identified two potential options for connecting to the canal near Atherstone. **Option 1** is a route from Coleshill Road across a section of Atherstone Golf Course, to meet the canal outside of the town. **Option 2** would continue along Coleshill Road to meet the canal where it crosses the road. These two options are set out in detail on the next page.



Pipeline corridor options

Option 1 Atherstone Golf Course

Pipeline routes

Description

This route runs the pipeline off Coleshill Road, across the northeast corner of Atherstone Golf Course, to an outfall along the eastern edge of the golf course.

Although this route has several ecological constraints, it eliminates the closure of the residential section of Coleshill Road, reducing significant residential disruption.

Residential impact

Option 1 has a limited residential impact, where the pipeline is constructed away from properties. This option is less likely to involve significant road closures and associated traffic diversions.

The construction of the pipeline will temporarily impact Atherstone Golf Course, which is a popular area used by local residents, and includes several public footpaths. We'll explore options to minimise these impacts.

Ecological impact

Although we'll strive to route the pipeline to minimise ecological impact, it's likely that this route would require some tree and vegetation loss in this area. We'll continue to carry out the technical work to understand exactly what tree and vegetation removal will be required, and we'll provide more information as the design develops.

We're considering opportunities to improve biodiversity on the golf club land.

Construction

The construction of the new pipeline will have a limited impact on local residents. However, a working area would be needed to construct the pipeline, with the creation of a haulage road, a storage area and construction site.

Atherstone Golf Course

The construction of the pipeline will temporarily impact the golf course access roads, off Coleshill Road.

Potential outfall locations

The outfall location is where the water will enter the canal network.

Description

Under this option, the outfall (the point where the water enters the canal) is located on the western bank of the canal, on the northeast side of the golf course.

Residential impact

There may be disruption during the construction period to residential properties in the immediate area. We will engage with residents and look to mitigate potential impacts.

Ecological impact

As with the pipeline route, there are several ecological issues to overcome to access this site.

Construction

There is a large and level working area for construction.

There is a possibility to reduce construction traffic using the canal to transport construction materials. However, as outlined above there are a number of ecological constraints to overcome, for construction traffic to access this area.

Canal impact

As the canal is wider in this location, it may be possible to maintain the flow of boat traffic in this area during the construction of the outfall. If we do need to close or restrict the canal during construction of the outfall then this will be planned to minimise disruption to canal users.

Pipeline corridor options

Option 2: Coleshill Road

Pipeline routes

Description

This option continues the pipeline routing along Coleshill Road, to an outfall located in Atherstone, on land owned by the Trust.

Residential impact

Coleshill Road is a residential road with on-street parking. This road would need to be closed for a significant period of time, whilst construction was completed along this section.

It's likely that Atherstone Golf Course and the associated public footpaths will remain open throughout the construction period and we'll work closely with the golf club to minimise any disruption.

Ecological impact

There are no ecological constraints on this alternative route.

Construction

This option would involve significant utilities diversions which could add an increased road closure period. There would be good access to this location for construction materials and equipment. However, this involves the closure of a section of Coleshill Road, that goes through Atherstone town.

Atherstone Golf Course

The construction of the pipeline will impact the Atherstone Golf Course access road, off Coleshill Road, where it requires the closure of a section of Coleshill Road.

We'll work closely with the golf club to minimise any disruption to the business and ensure access is maintained as much as possible.

Potential outfall locations

Description

Under this option, the outfall is located on the western bank of the canal at Atherstone, close to the intersection between Coleshill Road and the canal.

Residential impact

The outfall is in close proximity to residential properties, and may cause disturbance during the construction period. We're carrying out the technical work to understand exactly what this will mean, and we'll provide more information as the design develops.

Ecological impact

There are no ecological constraints associated with this option.

Construction

There is direct highway access to this location. Existing sewers are likely to require diversion in order to facilitate this work.

However, both the access route and the working area in this location is limited, as the area is constrained by existing development.

Canal impact

As the canal is narrow in this section, it's likely that we'll need to restrict or close it temporarily during the construction of the outfall. We would plan this to minimise disruption to canal users.

Have your say!

We'd like you to tell us anything you feel is important to the location of the pipeline, to help us keep the width of the corridor to a minimum and determine a defined route. We'd also like to hear your views on our two options near Atherstone to connect to the outfall location.

Chapter 4

Canal section – our proposals



Transferring water along the Coventry, Oxford, and Grand Union canals

Our canal network is unique. It's one of the finest examples of working industrial heritage in the world.

It brings nature and green and blue space to millions up and down the country and has transported people and goods for over two centuries. We now want to use it to help transfer highly treated recycled water from the Midlands to the Southeast. In addition to providing drinking water, the scheme will also improve the resilience of the canal network in the process.

Over several years we've carried out extensive technical studies to understand where new infrastructure might be needed to support the scheme.

To read more about this preparatory work, please see our [Site and Route Evaluation Report](#).

Selecting the engineering works on the canals



Feasibility (2021 – 2022)

Based on the section of canal identified at this stage to be involved in the transfer of water, detailed hydraulic and environmental monitoring was started. Early findings were used to indicate possible engineering solutions identified for Affinity Water's Water Resources Management Plan



Further assessments (January 2023)

We continued with the ecological, water quality and hydraulic monitoring to better understand the canal system, and how a proposed transfer would impact upon navigation, water levels, velocity, ecology and other key indicators



Understanding options (December 2023)

The design teams identified the potential engineering solutions required as a result of the surveys and monitoring undertaken



Refining (July 2024)

We have continued to assess the potential engineering solutions and, whilst we have confirmed broad locations for some of the key elements, which we will share as part of the consultation, further work continues and designs will be influenced by the responses we receive

Managing impacts on the canal



To help the water along its way and to ensure that our water transfer doesn't adversely affect the navigation and recreational use of the canal network, we'll need to build some new equipment such as pumping stations and gravity bypasses, alongside adapting some of the existing structures.

We'll also need to raise the banks of the canal in some places along the route to accommodate the additional water flows (you can read more about this on page 31).

As we continue to assess the location and design of the work to the canal, we'll be working out the best way to reduce impacts in your local area. We'll be engaging with communities and people living and working on and along the route, as well as those using the canal for business, recreation and leisure as the project design develops.

Sites of historic interest

We're also working closely with Historic England (along with experts within the Trust) to ensure proposals take account of and protect the canal's historic features and setting.

Water flow

Although we'll be transferring additional water in the canal, we don't expect the flow of water running through the canals to increase noticeably. By following Canal & River Trust guidance, we'll ensure that water flow speeds through structures remain below a maximum of 0.3 metres per second. The flow range will mostly be below the maximum rates.

To prevent the flow surpassing these levels, for example, at narrow points at bridges, we'll ensure appropriate bypasses are constructed to keep the speed of the water suitably low and keep the canal operating as normal.

Using equipment such as pumps and gravity bypasses will make sure water is transferred in a controlled way, and at a sufficiently slow speed, to keep the canal operational for users, as well as to not impact wildlife.

Water will be treated at a new AWTP at Minworth prior to it entering the canal, and this process will be regulated by the Environment Agency to ensure the water quality is suitable for the canal. Should the Trust, Severn Trent or Affinity Water have any concerns regarding the quality of the water to be transferred into the canals, the supply will be suspended until the concerns can be addressed.

Water flows will be monitored by sensors at the points we transfer water to the canal and abstract the water, and along regular points in the canal to make sure water levels are maintained.

As part of our commitment to make as little impact on the environment as possible during the construction and operation of the scheme, we're also considering areas where fish spawn, places juvenile fish gather and the impact on other wildlife such as mammals and birds, in and along the canal.

Mooring sites

We may need to temporarily close mooring sites as part of the work we'll be carrying out. Where this is needed, we'll replace lost mooring space with temporary sites until the original moorings can be re-instated and will take the opportunity to upgrade and improve moorings where possible. Should we need to permanently relocate any moorings, we'll consult with canal users on the best locations for these.

Have your say!

We'd like to understand your views. Let us know if you have any comments on how we are considering the flow of water, or any information that will help us identify other potential impacts on the canal.

The new infrastructure along the canal

The historic character, landscape and visual impact of the canal network will be carefully considered during our development of the scheme's design. Any new canal infrastructure will be designed to be appropriate and to make a positive contribution to the canal environment.

These pages describe the types of infrastructure we will need to build along the canal. The maps on pages 34–38 show where we currently think this equipment will be located.

Pumping stations

Pumping stations are a common feature on the existing canal network. They're typically small buildings, used by the Trust to allow water that flows downhill, for example through operation of the locks, to be 'reused' back uphill to help ensure that the canal doesn't run dry. They also move water from areas of surplus to areas of need.

How many will we need?

The Grand Union Canal Transfer may need up to seven new pumping stations (and associated underground pipes for bypasses) along the route. These will be needed where it's necessary for the water to flow uphill, bypassing existing locks and lock flights (a series of locks together, used when a canal must make a change in level that can't be achieved by a single lock).

We'll decide on their siting, alignment and design based on the local area and ease of operational access.

The type and style of pumps we'll use will be part of our ongoing design work and we'll provide more details on them and their associated buildings as our scheme design develops.

Example of existing pumping station



How does a pumping station work?

The process involves several steps:

- Step 1:** Water enters a weir, known as an inlet. This helps maintain water levels downstream in the canal, diverting water safely into a pump chamber.
- Step 2:** Pumps will adjust their strength to match the level of incoming flow.
- Step 3:** Water will enter an underground pipeline (typically 700mm in diameter) and will travel from the pumping station adjacent to the canal uphill around a lock, before it re-enters the canal.
- Step 4:** Water is put back into the canal at a weir outlet. This will limit the turbulence and speed of the water as it re-enters the canal, to ensure safety of boat users and reducing the risk of sediment disturbance.

Designing the new pumping stations

We'll design our proposals for each specific location, taking into account various factors, for example, ease of access, and heritage considerations such as listed buildings. As we refine our plans, we'll seek to minimise the impact at each pumping location where possible and take appropriate measures if mitigations are required. The new pumping stations could be housed in new buildings, or within existing buildings owned by the Trust in the vicinity, if possible. If we do need a new pumping station building, we'll need an area typically 7 metres by 8 metres.

Designs for pumping stations will be thoughtfully developed to appropriately respond to the character of the local area, and to make a positive contribution to the local canal landscape. We'll develop the proposals we have for our pumping station designs and present them at our next consultation.



Example of existing pumping station



Have your say!

We've presented locations where we think we'll need to locate pumping stations (see pages 34 to 38). We'd like you to tell us anything you feel is important for us to know about these areas that could help us as we develop our plans for the pumping stations along the canals. For example, any information to help reduce potential impacts from the new equipment through our design, or to plan our construction to minimise disruption.

Gravity bypasses

Gravity bypasses already exist along the canal network. They're used by the Trust to help move water through the canal network where gradient is a challenge to the natural flow. This avoids the lock gates having to act as weirs to balance water levels in the upstream and downstream pounds*.

We'll need to build new gravity bypasses to allow the water to flow downhill past individual locks or lock flights (groups of locks close together). These will be built within the canal bank and will be largely underground to minimise visual impact.

To accommodate additional water in the canal, we'll also need to invest in bypass pipes to transfer the flow around locks and reinstate the canal width, to incorporate minimal increases in flow at narrow points along the canal, such as at bridges. This is to ensure they're in line with the Trust's design and operating standards. It's vital that navigation and operations at locks aren't impacted so these interventions will help to ensure the regular operation of the canal network.

*A pound is the length of a canal between two locks.

We're still carrying out the technical work to determine exactly what work is required and appropriate design solutions for each site and we'll provide more information as the design develops. Where towpaths may need to be temporarily closed during construction, we'll find solutions to minimise disruption as much as possible, and we'll explore the best options as the design work progresses.



An example of a historic pumping station discharge at Stoke Bruerne



How does a gravity bypass work?

- Step 1:** Water flows down the canal North to South until it reaches a location where it needs to flow downhill past a lock or flight of locks.
- Step 2:** Water will enter the bypass via a weir structure built into the canal bank, flow through a pipe and bypass the lock, or flight of locks.
- Step 3:** Water re-enters the canal further down, via a similar weir structure to the entry point.

Have your say!

We've presented locations where we think we'll need to locate gravity bypasses (see pages 34 to 38). We'd like you to tell us anything you feel is important for us to know about these areas that could help us as we develop our plans for the gravity bypasses along the canals. For example, any information to help reduce potential impacts from the new equipment through our design, or to plan our construction to minimise disruption.

Increases to the canal bank and towpath levels

Most of the canal banks won't need to be raised during the development of the scheme. However, in some places we may need to carry out bank and towpath raising to accommodate the small increases in the water level of the Grand Union Canal Transfer. The maximum bank level increase would be around 400mm but in most cases it will be much less than this. We're still carrying out the technical work to understand exactly where bank raising will be required and by how much the banks will need to be raised, and we'll provide more information as the design develops, including talking to landowners who may be affected.

How will we raise the canal banks?

We'll use a range of techniques (based on methods currently used by the Trust), to raise the level of the canal bank, depending on location, and existing canal edge and its condition.

The character of each section of canal, including its location, heritage, ecology, and sense of place, will be considered and this will help to determine the appropriate solution. Where towpaths may need to be temporarily closed during construction, we'll find solutions to minimise disruption as much as possible.

We'll provide more details on this at our next consultation.

At locations where bank raising is needed, we'll also make improvements where we can to the towpath, provide facilities for boaters such as mooring sites, rings etc., and improve local towpath access points. We'll also enhance habitats where possible and carry out other work to help improve the canal's resilience to climate change.

While there may be some temporary disruption during construction of bank raising, once complete, there'll be no significant impact on navigation or the recreational use of the canal.



Work to bridges

We're investigating if there are any bridges along the route where work may be needed to raise the headroom between the expected water level and the underside of the bridge. We'll discuss any required adaptations to bridges with the relevant local stakeholders as the design develops and consult on these at the next consultation.

Where work to bridges is required, a sensitive and appropriate design solution will be developed, to ensure the character of the canal is protected (or improved) and the navigation and towpath use is not adversely affected.

Control and waste weirs

As the scheme will transfer additional water in the canal, control and waste weirs will be used to accommodate water level rises and prevent water loss to surrounding watercourses. It's expected that we'll need to make small improvements and repairs to over 50 existing control and waste weirs.

We'll provide more detail on all the proposed infrastructure along the canal at our next consultation.



The importance of Daventry and Drayton reservoirs for the scheme



The Trust's existing reservoirs at Daventry and Drayton will play an important role in the Grand Union Canal Transfer. These reservoirs are currently used as supply reservoirs, helping to manage water levels in the canal network and sustain navigation.

Additionally, both reservoirs are popular for a range of recreational activities, including fishing, open water swimming, water sports, walking and nature watching. There is also a children's playground and café at Daventry Country Park which is used regularly by the local community.

Under our current plans for the scheme, we're proposing to send water into these two reservoirs to keep them fuller for longer so that water can be used to keep the canals topped up throughout the year, creating greater resilience for the canals and its users.

This will be particularly helpful during drier conditions, as well as at times when Minworth isn't discharging water to the system to transfer, or if we are not able to take water from along the canal system north of these reservoirs. The water movement through the reservoirs will also help to improve the overall water quality.

This improved resilience will benefit both the canal and its users, as well as Affinity Water's customers.

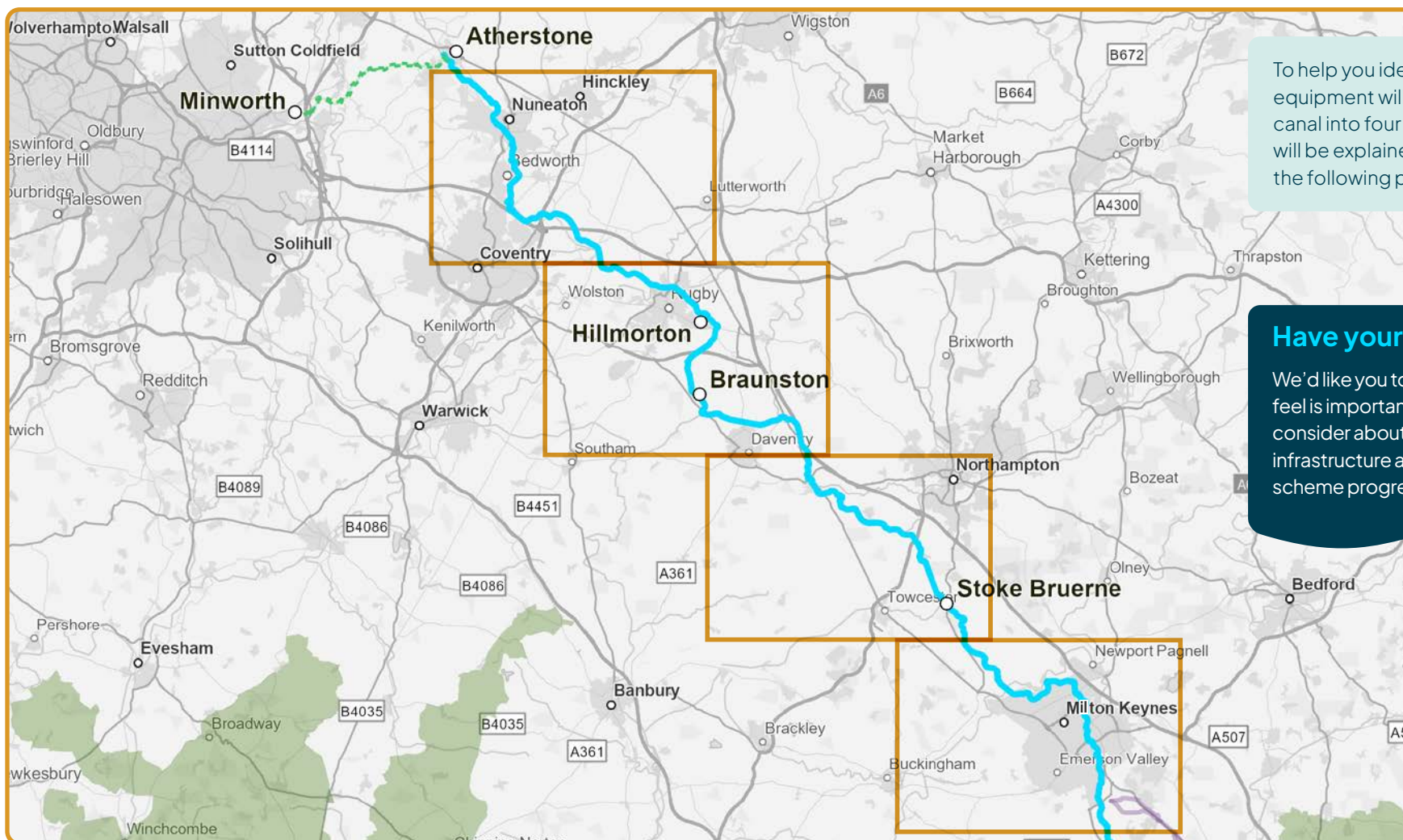


Daventry Country Park

Have your say!

We'd like you to tell us anything you feel is important about the reservoirs that we need to consider as the design for the scheme progresses.

Where will the new equipment be needed along the canal?



To help you identify where equipment will be, we've split the canal into four key sections which will be explained in more detail on the following pages.

Have your say!

We'd like you to tell us anything you feel is important we need to know or consider about the proposed canal infrastructure as the design for the scheme progresses

Hawkesbury Lock
New pumping station to divert water from the Coventry Canal into the Oxford Canal.
This is a small lock rise of 260mm.

Have your say
We'd like you to tell us what you think. Your feedback is important to us. Please consider about the proposed infrastructure as part of the scheme progress.

Coordinate system: British National Grid; Datum: OSGB 1936
Data sources: Esri UK, Esri, TomTom, Garmin, Foursquare, FAO, METI/NASA, USGS, Esri UK, Esri, TomTom, Garmin, Foursquare, GeoTechnologies, Inc., METI/NASA, USGS

- Canal
- Pumping station
- Reservoirs
- Gravity bypass



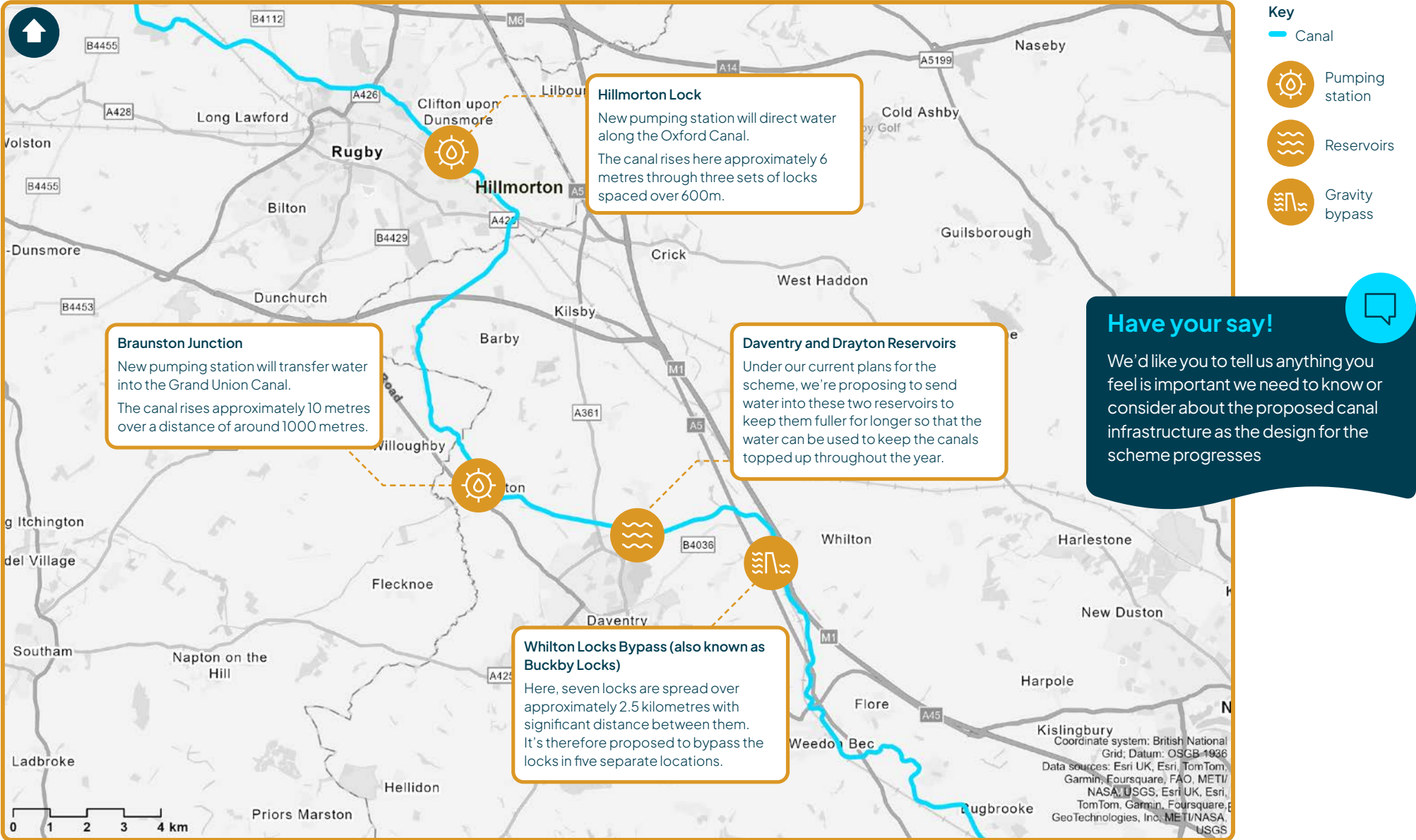
We'd like you to tell us anything you feel is important we need to know or consider about the proposed canal infrastructure as the design for the scheme progresses

New pumping station to divert water from the Coventry Canal into the Oxford Canal.

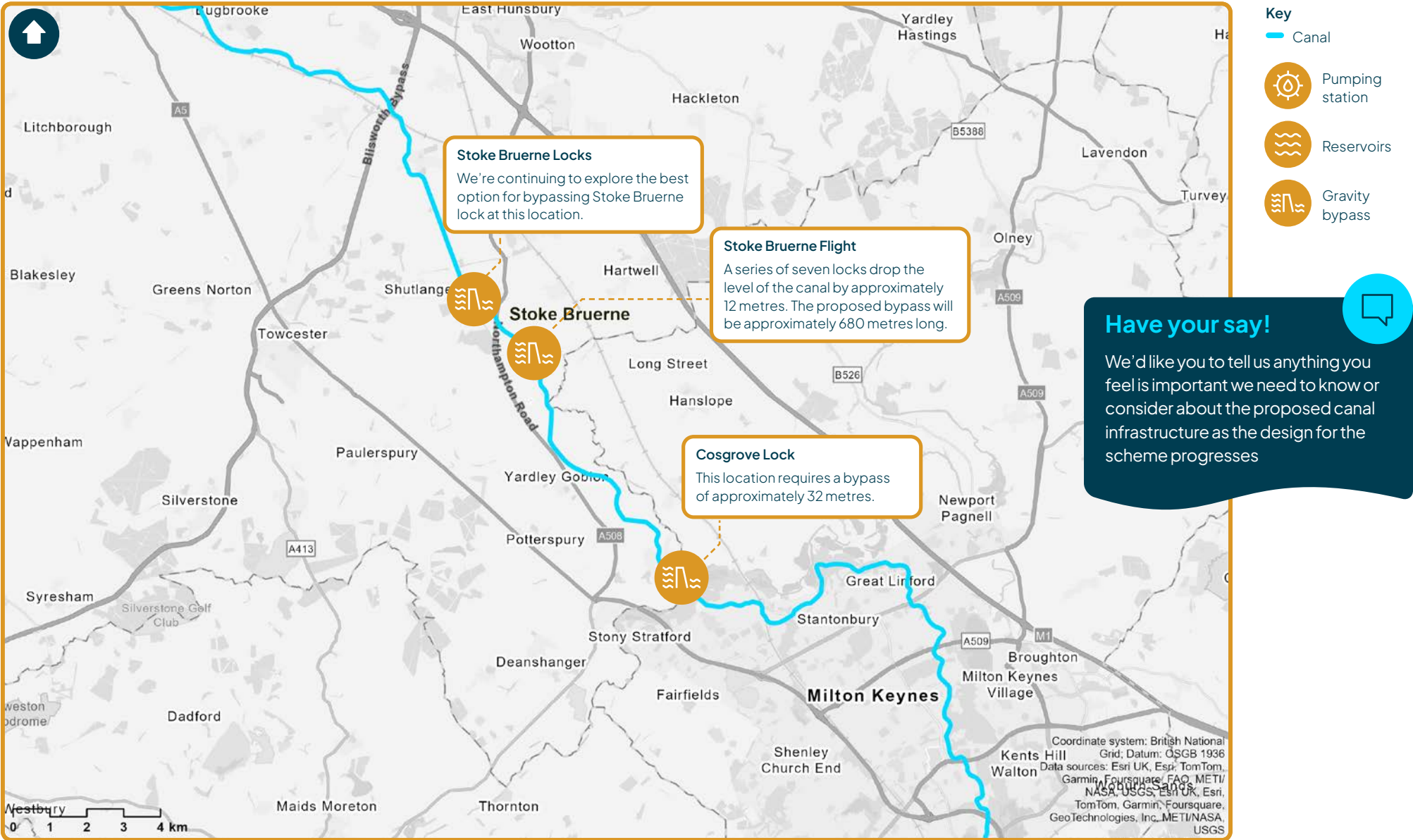
This is a small lock rise of 260mm.

Coordinate system: British National
Grid; Datum: OSGB 1936
Data sources: Esri UK, Esri, TomTom,
Garmin, Foursquare, FAO, METI/
NASA, USGS, Esri UK, Esri,
TomTom, Garmin, Foursquare,
GeoTechnologies, Inc., METI/NASA,
USGS

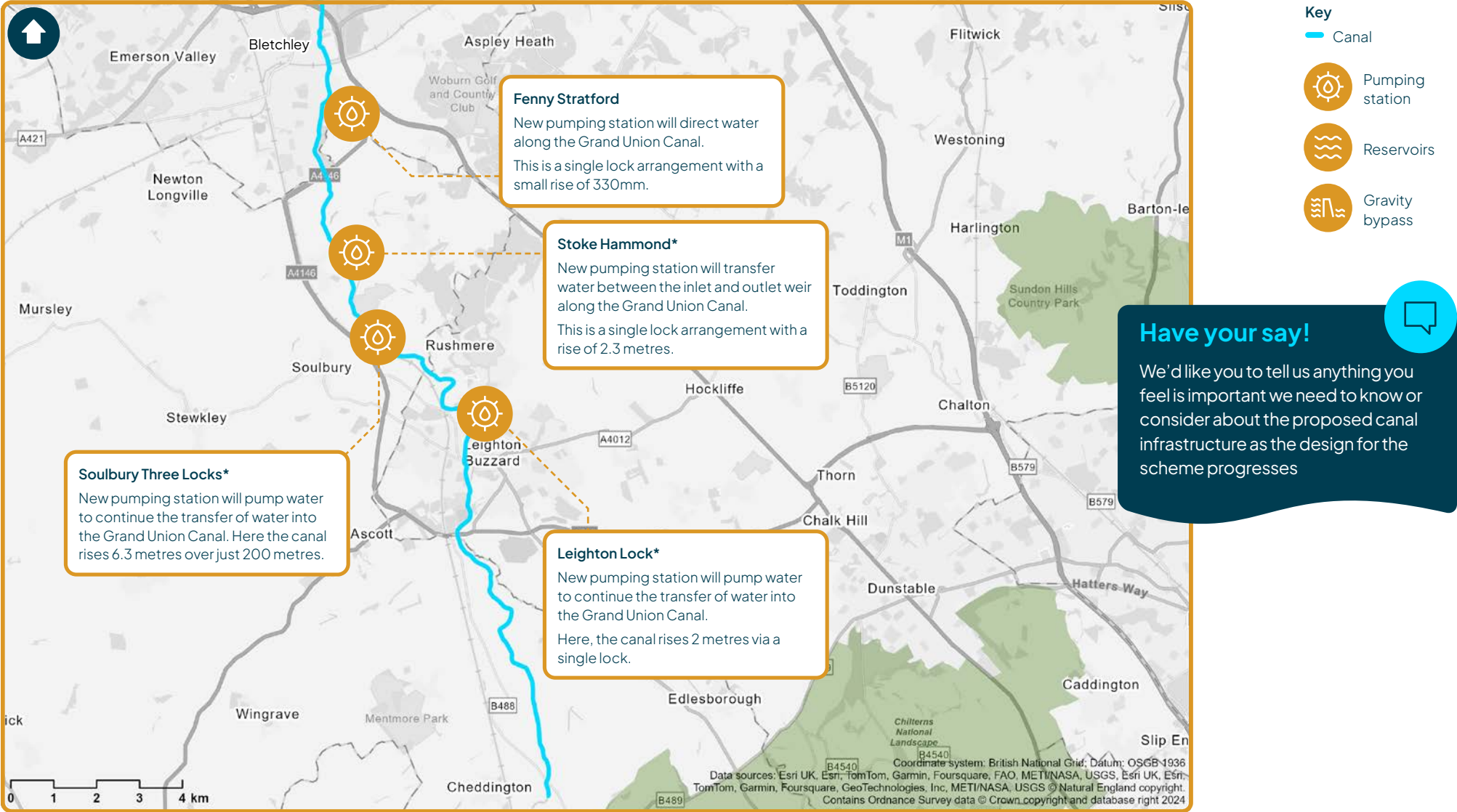
Rugby to Weedon Bec proposed canal infrastructure



Bugbrooke to Milton Keynes proposed canal infrastructure



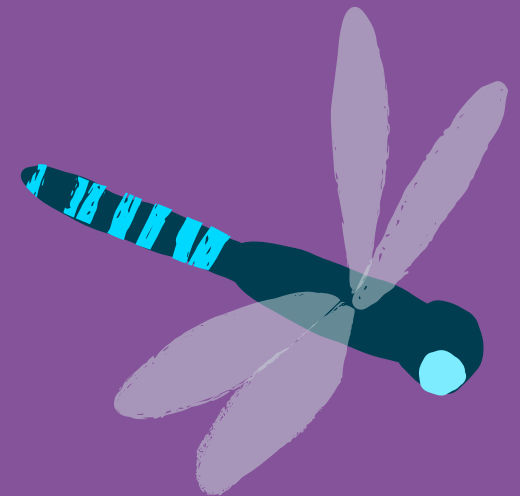
Bletchley to Leighton Buzzard proposed canal infrastructure



*If the site near Bletchley for the water treatment works and storage is selected, this would mean pumping stations at Stoke Hammond, Soulbury Three Locks and Leighton Lock would not be needed. See page 45 for more information

Chapter 5

Southern section – our proposals

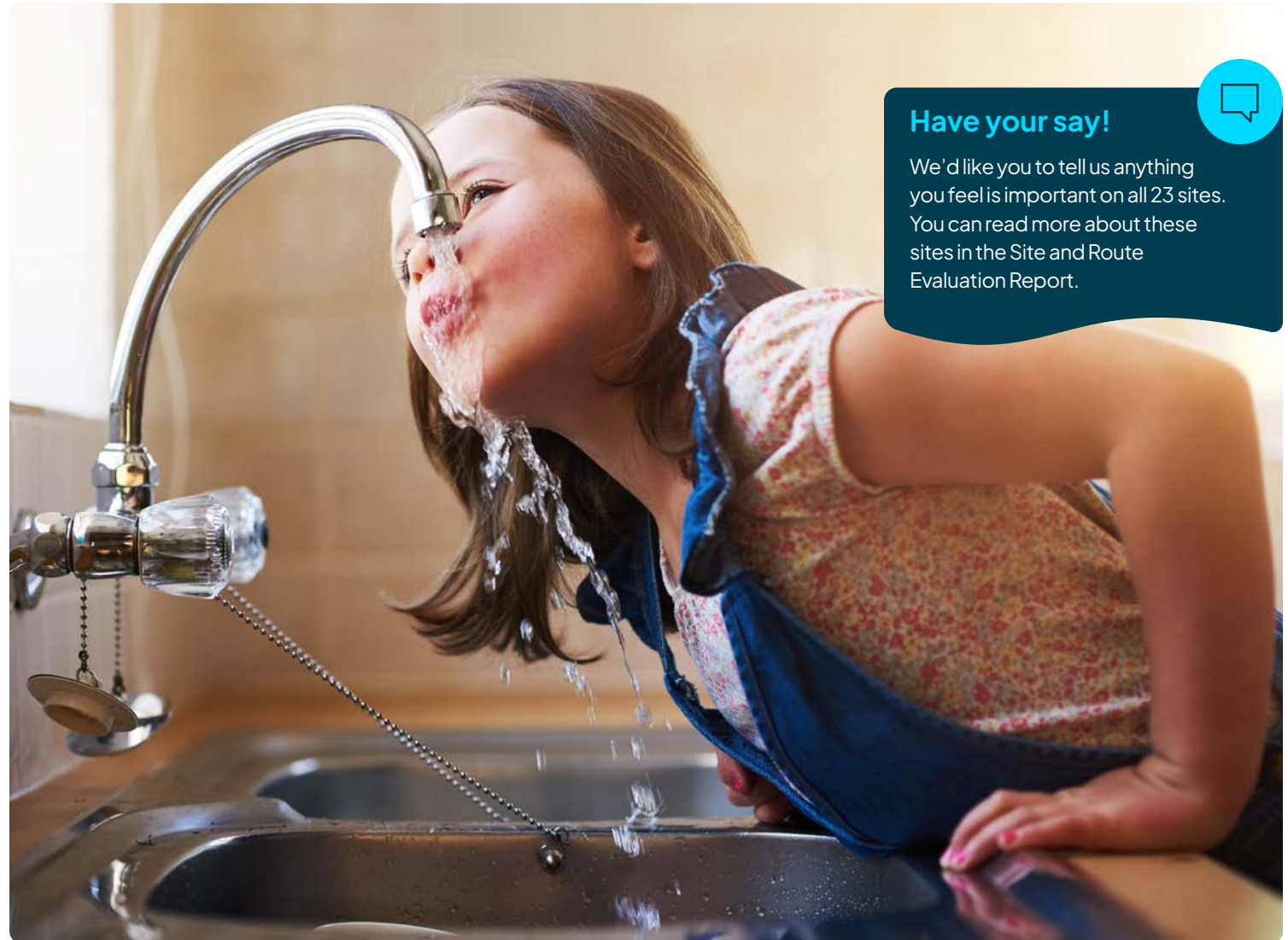


Transferring water to Affinity Water customers

After it's been transferred through the canal network, the water will be piped from the canal, stored, and treated again at a new water treatment works, to bring the water up to drinking water standards.

We'll aim to select a preferred site by considering feedback at this consultation, discussion with landowners, and further technical and environmental work. We've identified 23 site options where the works could be located. We've carried out more detailed work on three sites (and you can read more about how we identified these sites on pages 41 to 46).

Once we've identified which of these sites to progress to the next stage of design, we'll develop more detailed plans to share with you at our next consultation. We'll use feedback at this consultation, along with further discussions with landowners, and detailed environmental and technical work to help us identify our preferred site option. Over the next few pages you can read more about the equipment that will be needed to store and treat water, and where this equipment could be located.



Have your say!

We'd like you to tell us anything you feel is important on all 23 sites. You can read more about these sites in the Site and Route Evaluation Report.



Identifying potential sites for water treatment and storage



Identifying a site for the new water treatment works and water storage at the southern end of the Grand Union Canal Transfer has been a challenging and complex process.

The region is constrained by existing communities and environmental designations, such as national landscapes.

This section sets out how we have identified sites across the Leighton Buzzard and Milton Keynes area for potential development of the works, and which of these sites appear to be more suitable for that development. This process is ongoing and includes regular back-checking to make sure updated information about sites is taken into account. We'd like your comments on the process we've followed, and the results of the more detailed assessment we carried out on the sites we think may have more potential.

To read more about this preparatory work, please see our [Site and Route Evaluation Report](#).

Reviewing potential sites for water treatment and storage



Feasibility (2021 – 2022)

An abstraction location from the canal located at a point to the north of Tring was identified as the most suitable option in environmental terms based on feedback from the Environment Agency. An example site for the treatment works was then used for costing purposes in Affinity Water's Water Resource Management Plan



Further assessments (January 2023)

As planned, we also reviewed a number of potential sites south of Leighton Buzzard, and assessed these sites environment, engineering, land & planning grounds



Widening the search (December 2023)

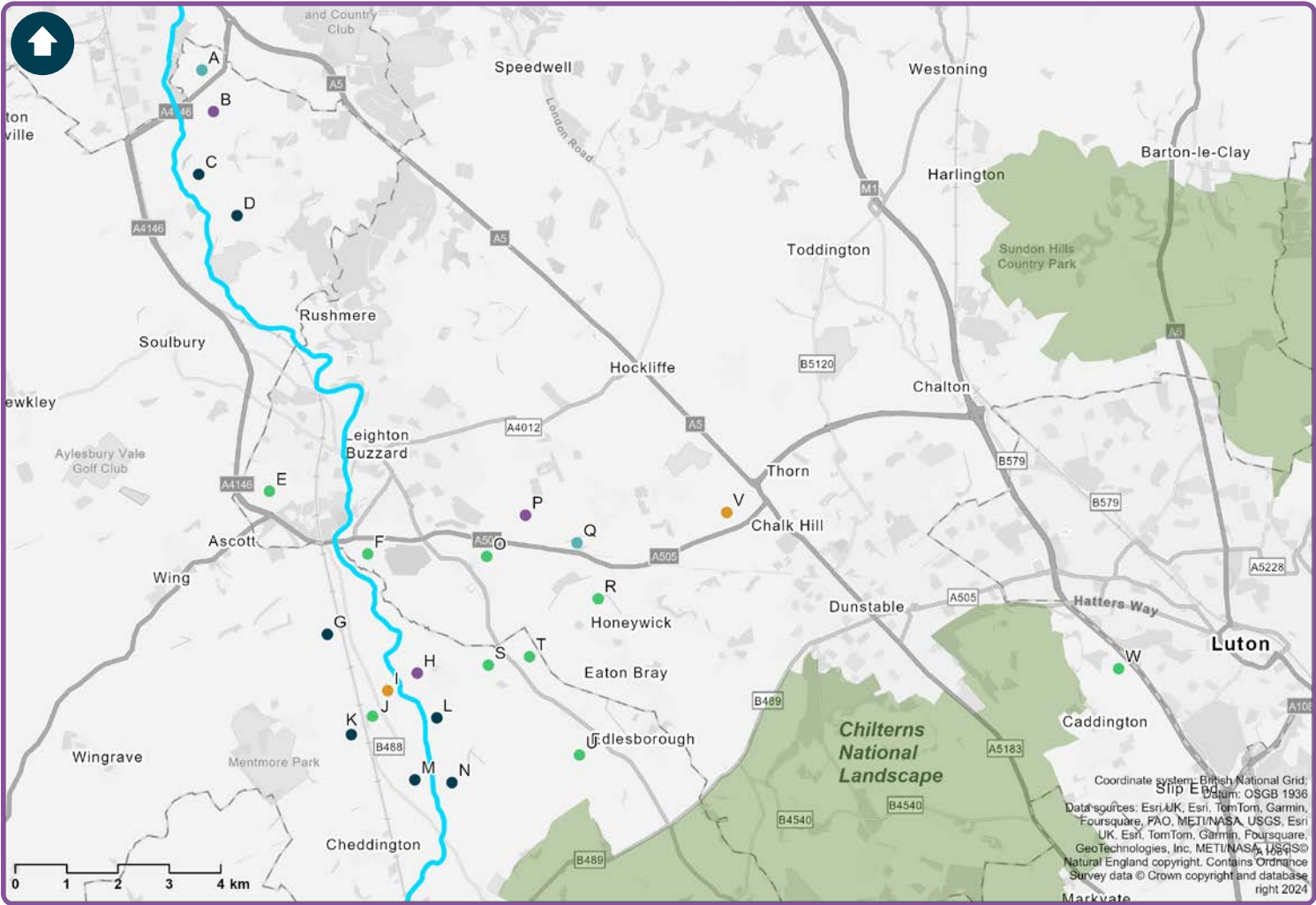
We looked to see which of these potential sites could be adapted or modified to improve their potential, and also explored a wider area to include north of Leighton Buzzard (needing to stay near to the canal) to identify alternative potential sites



Detailed assessment (July 2024)

Our reviews identified 23 possible locations. Ahead of this consultation, we have also carried out some more detail assessments on three of these 23 site options, which we think may have greater potential

Initial evaluation of 23 potential sites for water treatment and storage



Reasons why sites were considered to have less potential (or whether progressed for further assessment)

Site	Evaluation
A	Planning
B	Progressed as a site with greater potential
C	Poor accessibility
D	Poor accessibility
E	Planning and environment
F	Planning and environment
G	Poor accessibility
H	Progressed as a site with greater potential
I	Engineering
J	Planning and environment
K	Poor accessibility
L	Poor accessibility
M	Poor accessibility
N	Poor accessibility
O	Planning and environment
P	Progressed as a site with greater potential
Q	Planning
R	Planning and environment
S	Planning and environment
T	Planning and environment
U	Planning and environment
V	Engineering
W	Planning and environment

Have your say!

Please tell us if you think there's anything we've missed or need to consider when looking at the potential suitability of a site.

Site selection so far



Having identified search areas and possible sites for the water storage and water treatment works, we assessed their potential for use as part of the scheme.

We've assessed the engineering, environment, planning and land challenges and opportunities relating to the sites, enabling us to identify which sites have constraints that may make them unsuitable for development, and which are the sites which may have greater potential.

We've taken an initial view on the suitability of the 23 sites we originally identified. The work has included looking at:

- **Engineering** – a site's ability to accommodate the necessary water storage and/or water treatment works, considering the site size, shape, topography, geology and existing constraints on and around the sites.
- **Planning** – we've considered local and national planning designations and policies relating to the sites and their surroundings, and current and emerging development proposals for those sites where they are known.

- **Environment** – environmental constraints include landscape, ecology, historic features and the water environment, alongside their proximity to nearby communities, residents and community facilities. Accessibility has also been considered, including the need for road access during construction and subsequent operation.
- **Land** – whether potential sites have any special land designations, such as crown land, or include public open space.

To date, this assessment has been mostly desk based, supplemented with some site visits. Ecological and engineering site-based surveys have not yet been completed and engagement with potentially affected landowners is continuing.

From the work undertaken to date we have taken an initial view on the three sites that could have greater potential – these are shown on page 44. The remaining 20 sites are considered to have less potential for the reasons shown on the map on page 42. More information on the sites and our evaluation to date can be read in our [Site and Route Evaluation Report](#).

Further engineering design work, environmental and technical assessments, and engagement is being

undertaken on the three sites which may have greater potential. This information, together with the outcomes from this consultation will help the scheme to select preferred site options to take forward as part of the DCO process*. There will be further consultation and engagement on preferred sites and the detailed proposals for their development before any DCO application is submitted.

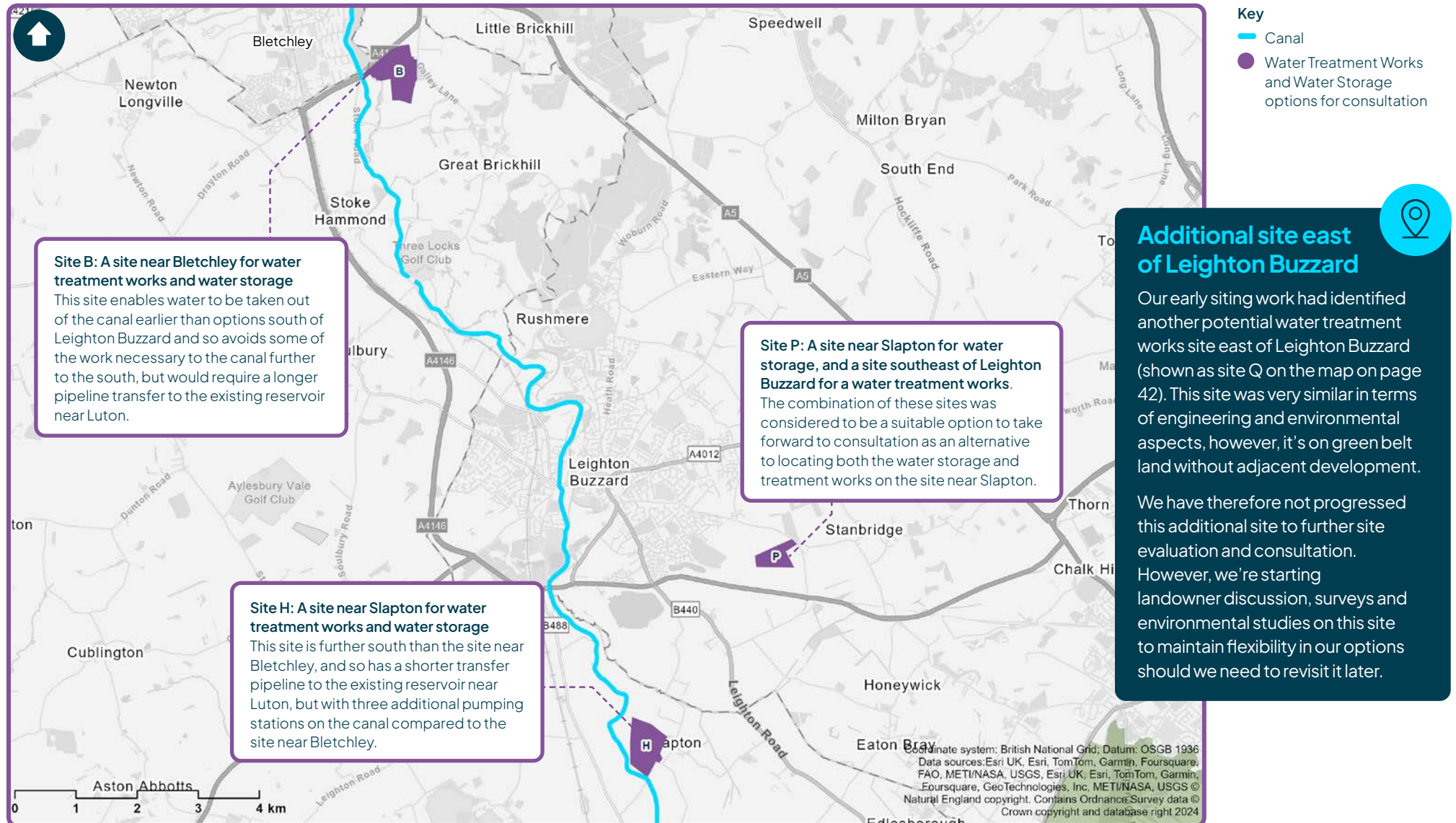


Great-crested newt (female)

* The DCO process is explained on pages 61 and 62

Sites which may have greater potential

Following the site evaluation process that's been undertaken, we've identified three sites that may have more potential for water treatment and storage.



Site Evaluations for the Water Treatment Works (WTW) and water storage.

The three sites that we think may have more potential have been subject to more detailed evaluations of environmental aspects, land, planning and engineering, and we've presented the findings of that evaluation in the table opposite.

We're still at an early stage in our work and these sites are not based on detailed designs. They are broad areas within which we think we could site the development. More work, which includes further engineering and environmental assessments, landowner discussions and consultation, is required.

* The water treatment works at Site P assumes the water storage would be located west of Slapton and east of the Grand Union Canal as per Site H. Any impacts arising from providing storage on Site H would need to be considered in combination with the impacts identified for Site P.

	 Site B – Water Treatment Works and storage site near Bletchley	 Site H – Water Treatment Works and storage site near Slapton	 Site P – Water Treatment Works east of Leighton Buzzard *
Summary	Water treatment works and water storage would be located on the same site, southeast of Bletchley and south of the A416. Galley Lane runs east of the site, and the village of Great Brickhill is located to the southeast.	Water treatment works and water storage would be located on the same site, west of Slapton and east of the Grand Union Canal.	- Water treatment works would be located east of Leighton Buzzard, to the north of the A505, with residential and commercial areas of Leighton Buzzard to the north and west. - The water storage would be located on the site near Slapton (site H).
Planning considerations	- Site sits outside the Green Belt, but is within the countryside and a designated Area of Attractive Landscape. - Site is within a Nature Improvement Area where developing biodiversity is promoted alongside minimising visual impacts and protecting local amenities. - Opportunities to promote recreational benefits around the water storage, due to its location close to residential areas, south of Milton Keynes.	- Site sits outside the Green Belt, but is within the countryside and a designated Area of Attractive Landscape. - Site is close to Slapton, Bury Farm Equestrian Centre and several properties. There are Public Rights of Way within the site. - Potential for construction impacts on local roads due to the location of the site near Slapton. - Opportunities to integrate water storage within the countryside and develop recreational and conservation opportunities.	- Water treatment works site is located within the Green Belt. - Water treatment works site is within a Nature Improvement Area, where developing biodiversity is promoted alongside minimising visual impacts and protecting local amenities. - Water treatment works site is located close to a proposed new energy park. - Land for outdoor sports and open space is located to the north of the water treatment works site.
Environment	- No designated biodiversity, ancient woodland or historic environment sites within the site. - Site is mainly low-quality grassland habitats and arable fields but includes hedgerows. Further assessment needed to determine importance of hedgerows and trees present. - Close to a small number of residential properties and allotments. - Site would likely be well screened to the north.	- No designated ancient woodland or historic environment sites within the site. - A Local Wildlife Site, important for its hedges and ditches, runs through the site. - The site is generally open agricultural land intersected and bordered by hedgerows and relatively recent woodland plantation. Further assessment would be needed to determine importance of hedgerows and trees present. - Close to residential properties in Slapton, equestrian facilities and playing fields. There are two public rights of way running through the site and recreational use of the canal adjacent to the site boundary. - Some intermittent belts of vegetation to the village edge that may help screen the proposed water treatment works.	- No designated biodiversity, ancient woodland or historic environment sites within the site. - The site is generally open agricultural land bordered by well-maintained mature trees and shrub hedgerows. Further assessment needed to determine importance of hedgerows and trees present. - Water treatment works site is located near a local sports club and residential properties.

	 Site B – Water Treatment Works and storage site near Bletchley	 Site H – Water Treatment Works and storage site near Slapton	 Site P – Water Treatment Works east of Leighton Buzzard *
Land	- The site is not designated but is sited on agricultural land. - Near a small number of residential properties.	- The site is not designated. - East of the site is located near to several residential properties in Slapton. The site is also near equestrian land.	- The sites for storage or WTW are not designated land. - Located near a community orchard attached to a housing development.
Engineering	- Located further north on the Grand Union Canal, removing the need for three additional engineering interventions further south on the canal. However, it would require a longer pipeline route to the existing reservoir near Luton. - There is the potential for less water treatment to be required if water is abstracted at this location. - The site is gently sloped, benefitting the construction of the storage area potentially requiring less material to be imported to and exported off the site.	- Proposed site is flat so there's likely to be excess material to remove from site during construction of the water storage. - Located further south on the Grand Union Canal, meaning three additional engineering interventions on the canal would be needed. However, it would require a shorter pipeline route to the existing reservoir near Luton. - The area has weight restrictions on the local roads which could impact deliveries to site and construction.	- Good access available from the A505. - Would require an additional pipeline to connect the water treatment works to the storage at Site H. - High voltage lines adjacent to the site. - Good resilience to future flood risk.

Considerations for the storage only at Site H.

If only siting the storage on Site H (as opposed to storage and treatment works) the following would be considerations for Site H:

- Fewer operational vehicles would need to visit the site
- Would require pumping and screening facilities alongside the storage pond
- Landscape and visual impacts would be reduced (as compared to also siting the water treatment works on site H)
- Would still be development in the countryside but less built development and potential to develop recreational and ecological opportunities with the water storage



Have your say!



We've set out these three site options examined through this process. We know each site brings its own challenges and we'd like you to provide any information you think is important to inform our selection of the preferred site or sites to be developed to detailed design - including ways we can mitigate any potential impacts to the nearby communities and environment from the construction work we'll undertake.

To read more about our approach to the site evaluation process, please see our [Site and Route Evaluation Report](#).

What we'll need to build to store and treat water

To store and treat water before it's transferred to Affinity Water customers, we'll need to build water storage and a new water treatment works, as well as some supporting infrastructure.

Taking water from the canal

To take water out of the canal, we'll need to build a new weir. This structure consists of outlets built into the canal bank and it allows us to pipe water from the canal in a controlled way and at a low speed. We'll carefully consider any potential impacts on canal users and wildlife and aim to minimise them as much as possible.

If the site that's selected affects existing moorings on the canal, these would be compensated elsewhere, and no overall mooring will be lost.

Transferring water to the new storage

We'll also need a new pumping station, which will help transfer water to the new water storage. We'll finalise a site and design for this pumping station as site selection progresses, but a pumping station is typically a single storey building around 7 metres by 8 metres. You can find out more about pumping stations on pages 28 and 29.



New water storage

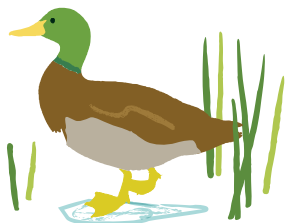
At the new water storage site, we'll store water abstracted from the canal before it's treated at the new water treatment works, located on the same site or a site nearby.

Why is storage needed?

We'll store five days worth of water before it goes through the treatment process. This will allow the transfer to be more resilient, allowing an additional buffer between water in the canal and the water reaching the new water treatment works. This means that, should there be any issues with transferring water in the canal, we'll have a number of days to implement other options to ensure we maintain supply for customers.

What will the new storage look like?

We don't yet have designs for the new water storage, however, it's likely to consist of an earth embankment up to a maximum height of around 6 metres and a likely surface area of around 28 acres. However the actual footprint will depend on the topography and features of the site that is selected.



We'll try to ensure the final location of the storage has as little visual impact as possible on the surrounding area. During the option review process, described on pages 41 to 46, we've considered several factors, including site geology and proximity of residential properties, to ensure suitable locations have been presented as part of this consultation.

The water storage may offer opportunities to provide wider benefits for local communities as well as contributing to Biodiversity Net Gain as part of the whole site.

Water Treatment Works

What will be built?

A new water treatment works will take water from the storage site and treat it to drinking water standards.

We'll need to develop detailed designs of the water treatment works but at this stage but we expect the entire footprint of the site will be around 200 metres by 100 metres. Within this area we'll need to site buildings, pipelines and storage equipment. The tallest equipment will be a maximum height of 12 metres, but most of our equipment will be lower than this. We'll provide detailed designs of the site at our next consultation but at this stage we would like any information you have that could help us select a preferred site.

The local environment, landscape and visual impact of whichever site is progressed following consultation, will be carefully considered during our development of the scheme's design. Any proposals would likely include new landscape planting that will be designed to be sympathetic to the surroundings and complement the environment as much as possible.

Have your say!

We'd like you to provide any information you think is important to inform the development of a detailed design for the site, including ways we can mitigate any potential impacts to the nearby communities.

Example of water storage at Daventry



Getting water to Affinity customers

What will we build?

A new underground pipeline, potentially up to 30km in length, depending on where the water treatment works and water storage are located, will transfer treated water from the new water treatment works to an existing covered reservoir near Luton.

Water will then be transferred as clean drinking water into Affinity Water's supply network for customers.

Where will we locate the pipeline within the corridor?

Using the three sites which may have greater potential, we identified a number of broad corridors that we could potentially use to transfer water from the new water treatment works to an existing reservoir near Luton.

We carried out early assessment work on a number of these corridors, and discounted several for reasons of constructability. You can view all of the corridors we identified on page 50 and the potential pipeline corridors we are consulting on can be seen on pages 51 and 52.

To read more about how we identified potential pipeline corridors, please see our [Site and Route Evaluation Report](#).



An aerial view of Luton

Some information about the pipeline

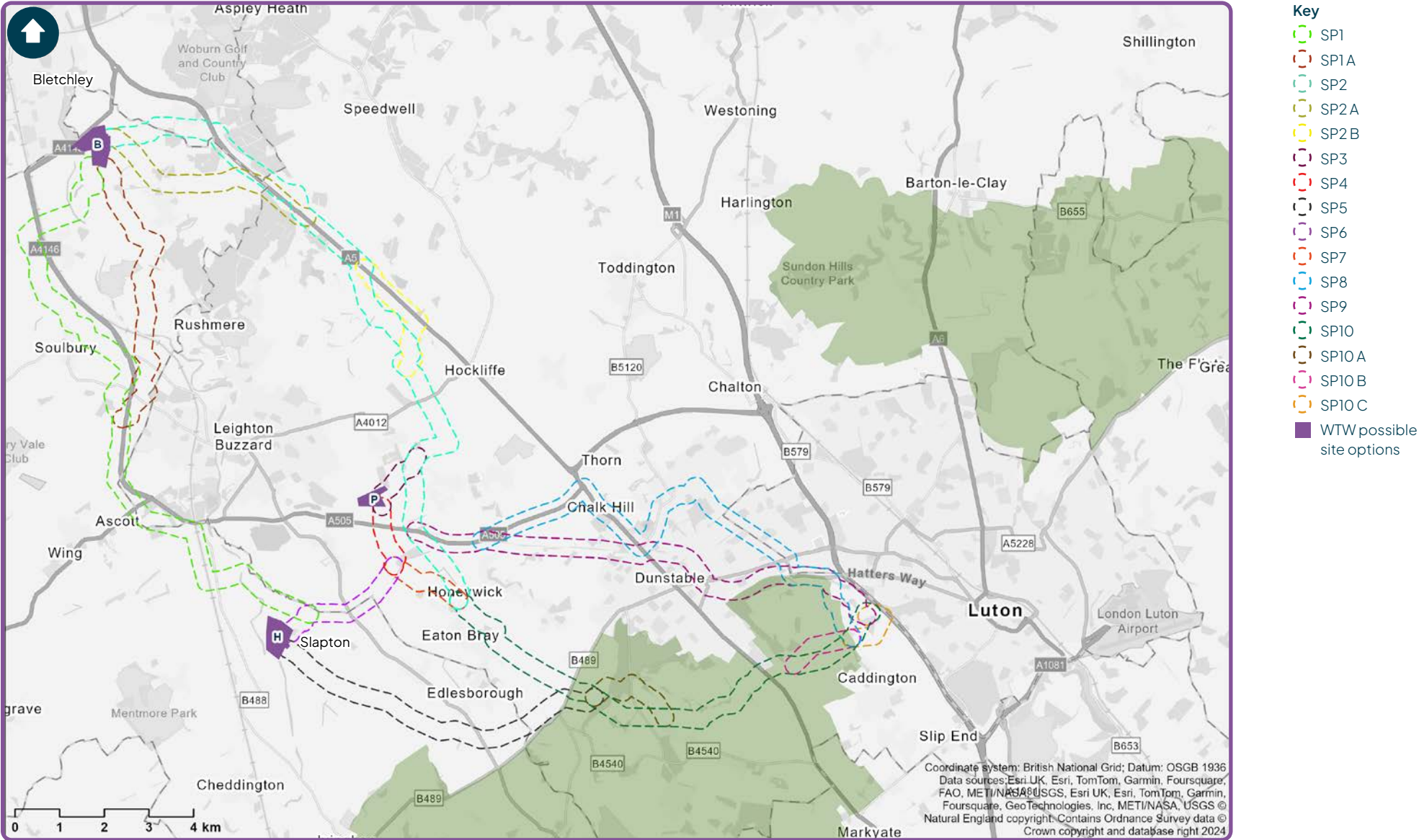


The pipeline will be approximately one metre in diameter and at this stage, we expect it will be made from steel. Typically, it will be buried to a minimum depth of 1.2 metres from the top of the pipe. **You can read more about how we'd construct a pipeline on pages 58 to 60.**

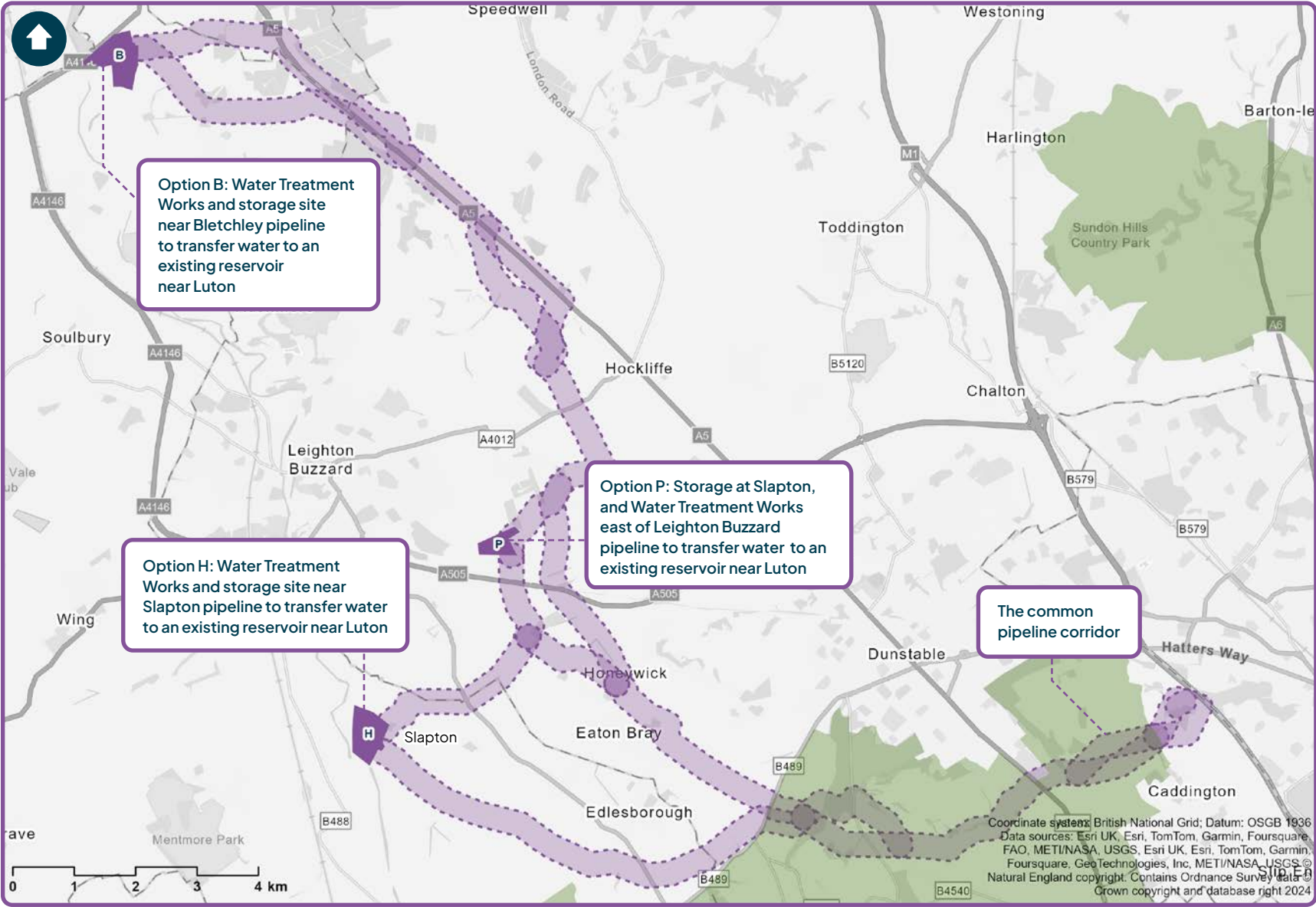


We propose to construct the pipeline within our preferred corridor, which varies in width. As the project develops, and we come back to communities for further consultation, we'll have defined a narrower route that will represent more closely where we expect the pipe to run.

Identified potential pipeline corridors



Indicative pipeline corridor options



The pipeline corridors

We've identified potential corridors for our buried pipeline to connect the scheme to our existing reservoir near Luton. The current corridors are the widest possible areas we would route the pipe within and are typically around 200 metres wide. This is to help us route around any constraints we haven't yet identified as we refine our route.

Once we know which of the potential sites presented in this brochure we'll progress to the next stage of design, we'll do more detailed assessments and studies to refine the pipeline corridor further. The pipeline routes will be consulted on during our next consultation once a preferred location for the water treatment works and storage has been identified.

We'll also conduct extensive surveys to consider local wildlife and the local area it'll be placed in. We'll consider any constraints along the corridor, such as other utilities, environmental sites or existing buildings which may determine where we can or can't route the pipeline. This will allow us to strike a balance between the competing factors we have to consider.

Common pipeline corridor

Our existing reservoir where we need to transfer the water to, is southeast of Dunstable, near Luton and we looked at several routes through or around the town. This area is heavily constrained – either by the existing development at Dunstable or by the Chiltern Hills National Landscape (Area of Outstanding Natural Beauty). Routes through Dunstable have not been progressed due to engineering challenges and impacts on residential and business properties.

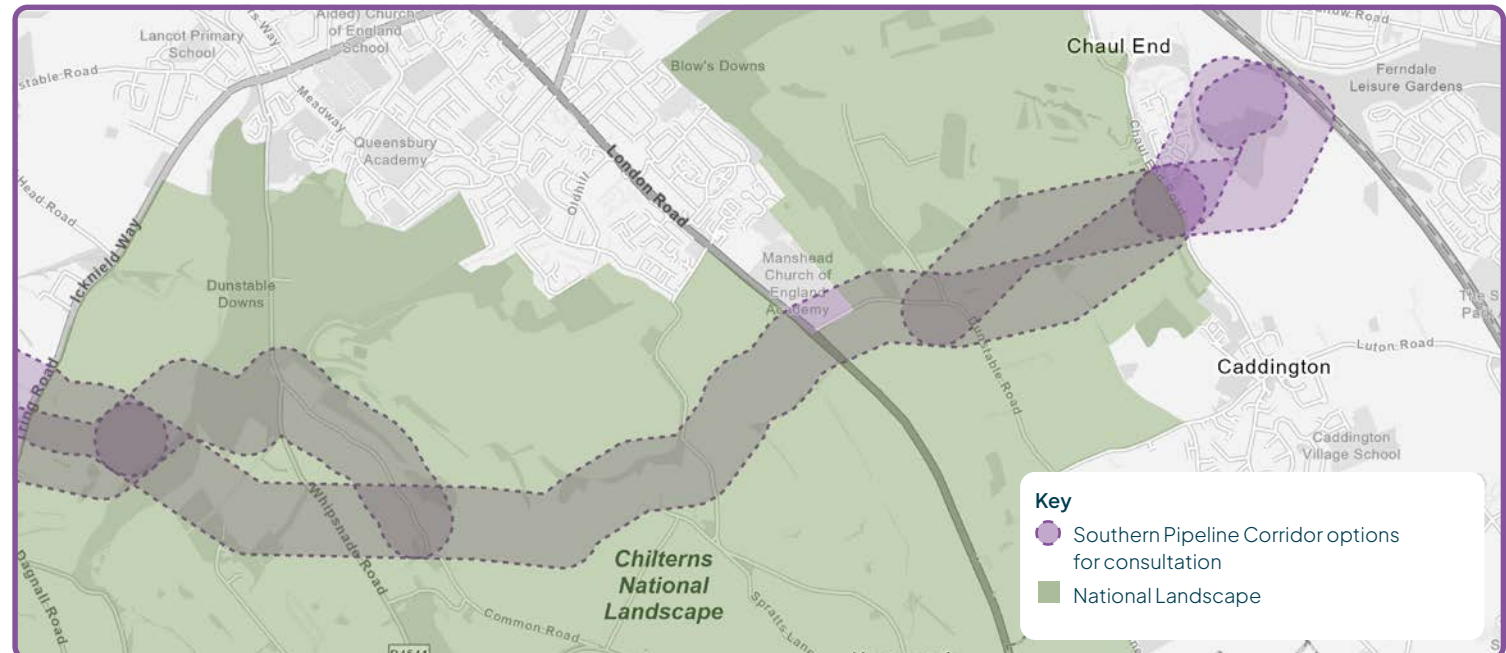
The common pipeline route corridor therefore passes through the Chiltern Hills National Landscape. We recognise the sensitivities of working within the national landscape and this will be an important part of our ongoing design work, as well as engaging with stakeholders in the area.

After construction we will reinstate land to its previous use. In areas of sensitivity, we also expect to use trenchless construction techniques to reduce disruption (you can read more about these on pages 58 to 60).

Have your say!

To make our decision as to where we place the pipeline within the corridor options, we want to find out your views, as well as local communities' and landowners' input. We'd like you to let us know your comments on the options outlined above, to help us determine which to take forward to detailed design.

The common pipeline corridor



Chapter 6

Our commitment to the environment



Our commitment to protecting the environment

How will we help to protect the environment?

We're committed to doing all we can to avoid, reduce and mitigate the impact our scheme will have on people and the environment.

As we develop our plans, we'll carry out surveys and assessments across many environmental topics (e.g. water environment, air quality, noise, climate, heritage, landscape, and visual impacts) to help us balance the work we need to do to provide a sustainable and reliable water supply while protecting our environment. This will help us to design our proposals and how we'll build them as considerately as possible.

Have your say!

We want to hear your views about how we can manage and mitigate the environmental effects of our scheme, and any opportunities it could unlock.

We're working to identify opportunities to enable the scheme to allow the Grand Union Canal Transfer to deliver Biodiversity Net Gain, which is a way of creating and improving natural habitats whilst ensuring existing wildlife and vulnerable species such as water voles are protected. It also ensures development has a measurably positive impact ('net gain') on biodiversity, compared to what was there before the development began. Opportunities could include:

- Creating additional wetland habitats that'll introduce rare plants and reedbeds, increasing the biodiversity of the local environment
- Considering how we can protect and restore habitats, such as wetland ponds and open mosaic habitats (manmade vegetation)
- Additional planting of vegetation in existing habitats
- Introducing bird and bat boxes along the route



How will we manage and mitigate the effects of the scheme?

While the scheme will bring many benefits, all major infrastructure inevitably brings with it some impacts. We aim to avoid, reduce, and mitigate these impacts and we'll be gathering extensive environmental information to identify and assess the likely significant environmental effects of the scheme. This process is known as an Environmental Impact Assessment (EIA).

The stages of an Environmental Impact Assessment



Stage 1:

The first stage of the EIA for the project is 'scoping' where we'll present and agree the anticipated scope and methodology of the EIA, based on field and desk studies of the existing environment, analysis of the proposals and consultation with key stakeholders.

Stage 2:

Once scoping is complete, we'll prepare a Preliminary Environmental Information Report which presents early information of the assessments to allow stakeholders and the local community to develop an informed view of the likely impacts of the development before the EIA is complete. We'll publish outcomes from this work in the next formal stage of consultation.

Stage 3:

The EIA will then be presented in an Environmental Statement submitted as part of our application for development consent in 2026.



The EIA will be undertaken alongside our design work and our consultation and engagement, so its findings and conclusions help shape our proposals in a positive way. Through this process we'll identify any "significant effects" and explore opportunities to avoid, reduce and mitigate them.

We'll carry out surveys as part of this process to help us better understand the local environment, such as the habitats, biodiversity, and wildlife around the sites. You may see our surveyors out and about in the area over the coming months. While along the canal we'll try to carry out surveys on the Trust's land, wherever possible, however, we'll have

to access other land in the area too. We'll also need to access and survey land for the pipelines and other infrastructure and we'll be in touch with any landowners in advance of surveys to gain the necessary permission and access to carry these out in a discreet manner.

The preliminary findings of our assessments will be published in a report at our next consultation, and the full EIA forms an important part of our application.

You can find out more detail about the application process on pages 61 to 62.

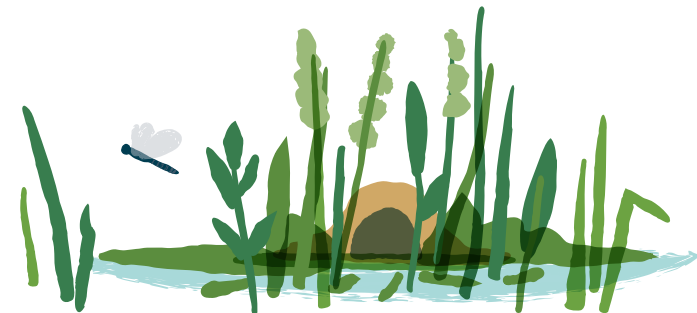
Rivers Tame and Trent

How will the scheme affect the River Tame and River Trent and surrounding areas?

Our Wastewater Recycling Centre at Minworth currently puts 430 million litres of recycled water per day (Mld) in dry weather conditions, with more under normal weather conditions, into the River Tame. Our proposals for the Grand Union Canal Transfer scheme mean up to 115 Mld of this flow of water will be treated and transferred through the canal network instead - that's the equivalent of approximately 380,000 baths.

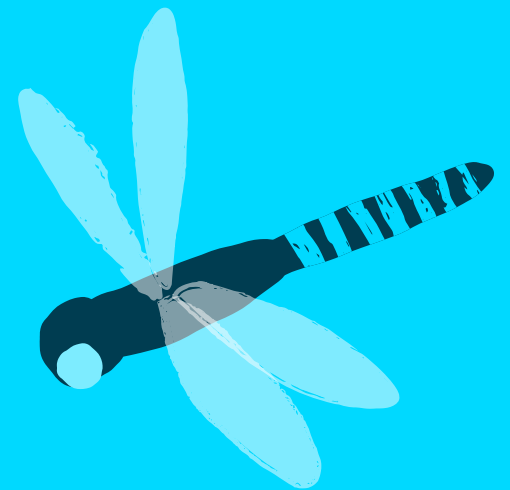
We understand how unique the River Tame and River Trent environments are, and we've been carrying out some early work to help build a detailed understanding of what the work we carry out for our scheme might mean for the rivers and the surrounding areas.

We've been carrying out surveys in and near to the rivers for several years to better understand how this project may impact the river system, as well as undertaking detailed modelling to understand more about the river system's typical flow, and how and why it fluctuates. This will help us to assess the potential impacts of the scheme so we can avoid or mitigate them.



Chapter 7

Constructing the scheme



Construction of the scheme

We're still working out our detailed plans for where and how we'll build the new infrastructure we need and when we'll do this. We'll provide more information about how we'll construct the scheme, and how we'll manage impacts, at our next consultation. We'll let everyone know when this will take place nearer the time.

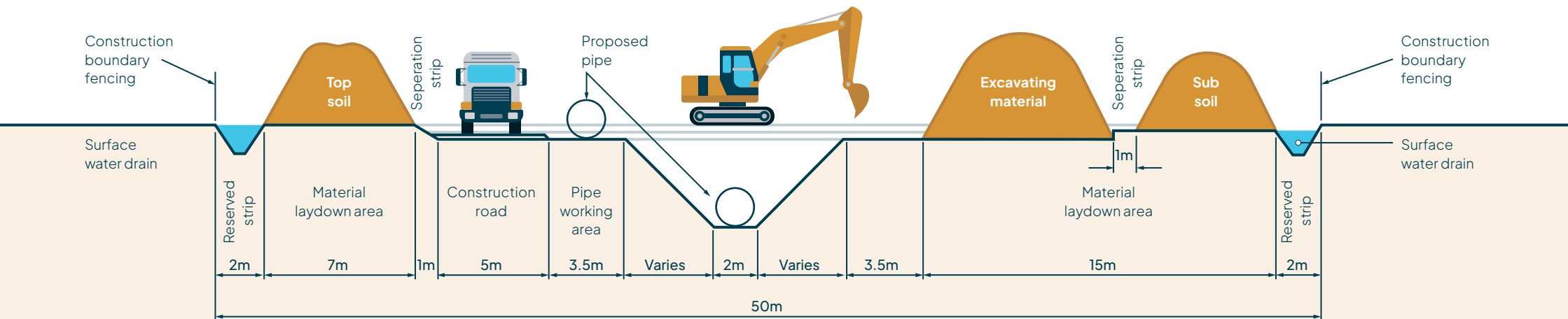
What to expect when we construct new pipelines

Open cut technique

Where we're constructing new sections of pipeline, we'll likely use an 'open cut' construction technique. For this, we typically require a 50-metre working width. Within this working width, we'd:

- Check for buried services and locate/divert them if necessary
- Strip back the topsoil of an area approximately 40m wide
- Dig a trench 2 metres to 6 metres wide (depending on ground conditions and construction method)
- Place the pipeline
- Where possible carefully replace the excavated material from the trench and the layer of topsoil
- Return the land to its previous use, with the pipeline buried below the ground

The diagram below illustrates how we'll normally go about constructing the pipeline for a scheme.



Typical construction working width

Trenchless Techniques

To help reduce disruption during construction, where we need to cross railways and major roads, sensitive landscapes and waterways, we plan to use trenchless techniques instead of open cut trenching.

These techniques involve tunnelling under a constraint, such as a river or major road, to a depth that prevents impacts to channel integrity, habitats, and infrastructure. Exactly where we use trenchless techniques and the specific techniques we use will be informed by our ongoing assessment work, and our engagement with relevant stakeholders, such as local planning authorities and the statutory environmental bodies.

Construction work along the canal

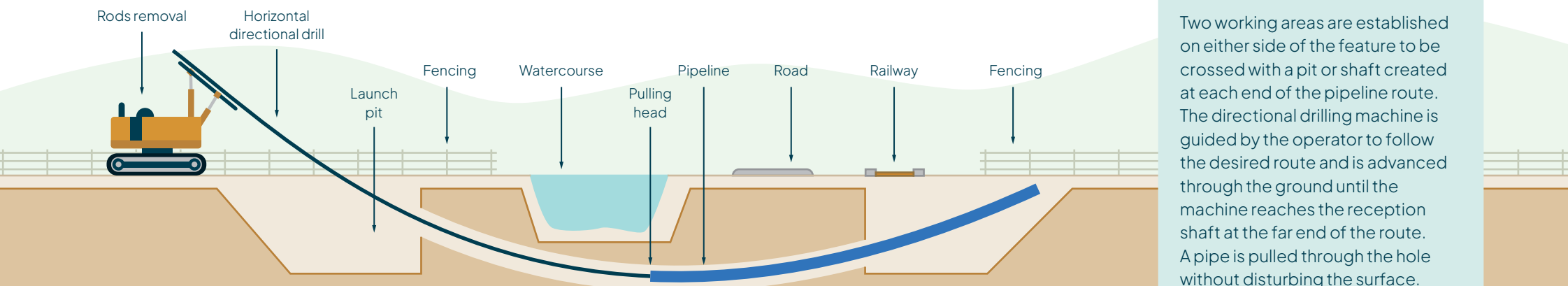
We've already carried out early work to understand the construction requirements along the canal itself, however, further surveys and engagement with stakeholders and canal users along the route will continue to take place to plan this in more detail and to manage impacts from our work to minimise disruption to communities and canal users.

There'll be various factors to consider when planning the construction elements of the scheme:

- Seeking to minimise the impacts of any construction work on existing historic structures close by (e.g. locks, bridges and historic buildings etc.), as well as on nearby housing, gardens and private property.
- Considering temporary access to the sites for construction and any future access for maintenance required.
- Considering the possibility of using canal-based equipment to carry out appropriate work.

- Developing techniques to reduce the time that the canals and/or towpaths need to be closed or restricted in order to carry out the work.
- Managing access to the canal and towpath during construction will be imperative to ensure the safety and wellbeing of both the public and the contractors working on site.

The diagram illustrates how we'll aim to carry out the trenchless techniques.



Typical horizontal drilling representation

Horizontal directional drilling involves the use of a directional drilling machine, and associated attachments, to accurately drill along the chosen bore path and lay the path for the pipe.

Two working areas are established on either side of the feature to be crossed with a pit or shaft created at each end of the pipeline route. The directional drilling machine is guided by the operator to follow the desired route and is advanced through the ground until the machine reaches the reception shaft at the far end of the route. A pipe is pulled through the hole without disturbing the surface.

Construction timeline

We'll provide more details on the potential timing of construction work in the Environmental Impact Assessment (EIA). For details about the scoping of the EIA see page 55.

When developed, we'll let local residents, canal users and businesses know of the planned construction work, including when and where they're due to take place, in advance. This will help reduce the disruption caused by construction work and allow communities to plan ahead accordingly. It's important to note we won't be undertaking work along the entire canal route.

Construction management

We'll seek to avoid and reduce any disruption from our construction work and our plans for doing this will be outlined within a series of management plans that we'll prepare and publish as part of our application for development consent. This will ensure we work in line with best practices and that activities that create disruptive impacts such as noise and dust will be carefully managed and controlled. These plans will also include a traffic management plan to help limit disruption to local roads during construction and also ensure collaboration with emergency services.

During the construction phase some temporary changes may be required in the areas surrounding the work:

- Temporary construction compounds will be needed to provide welfare facilities for construction workers and to store materials and equipment.
- Access tracks may need to be created in some areas where off-road access is required – the land where these tracks are created will be restored once work is complete.
- We'll also agree with the local highways authorities which roads will be available for construction traffic to use.
- It may be necessary to temporarily restrict the use of the canals and towpaths locally, in much the same way as the Canal & River Trust currently undertakes engineering work. This work will be carefully planned to minimise disruption to canal users.

Have your say!

We'd like to hear from you if there's anything you think we need to know to help develop our construction plans.



The Development Consent Order process

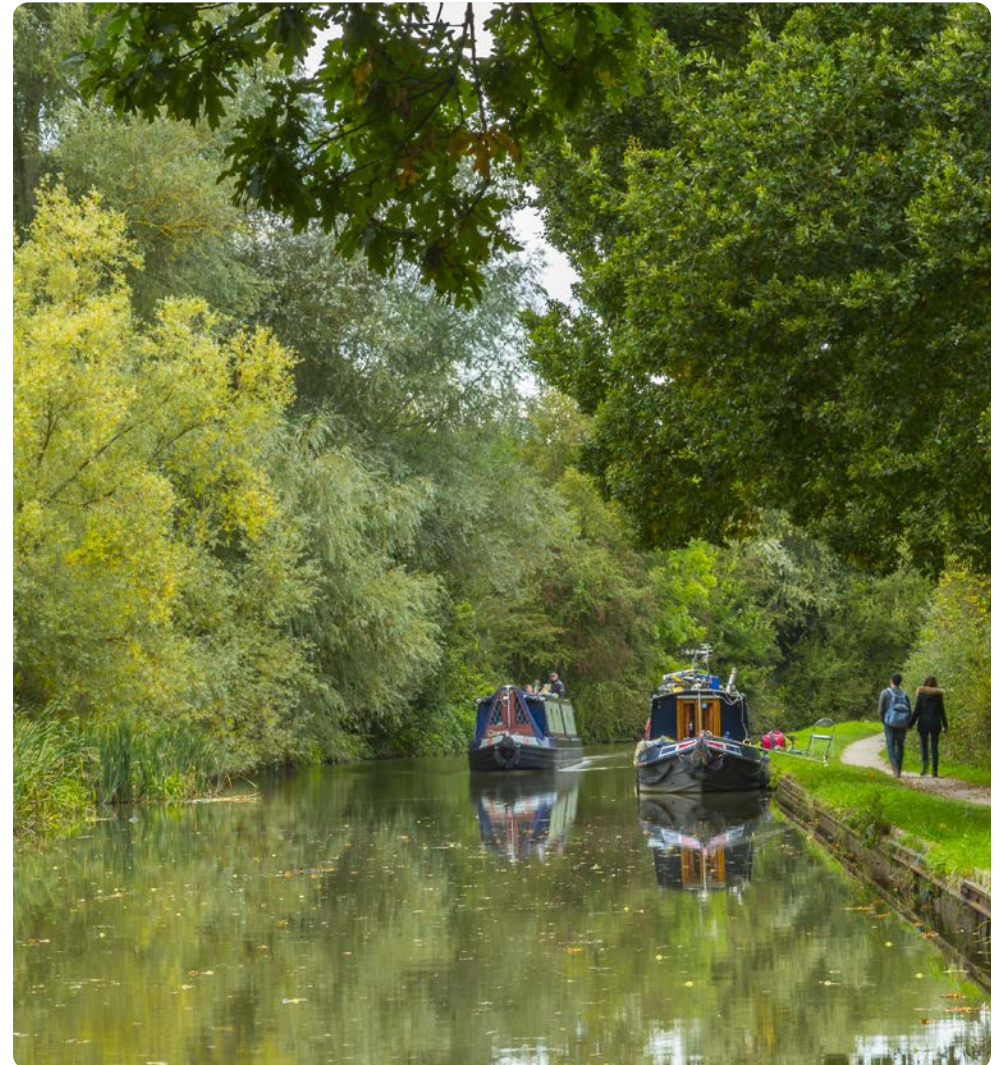
We currently expect we'll need to apply to the government for a Development Consent Order (DCO) under the Planning Act 2008 for permission to build the scheme, and not make planning applications to local councils.

How is planning permission granted?

This means the scheme must apply for a DCO to the Planning Inspectorate, who will appoint a panel of inspectors that will examine the application and make a recommendation to the Secretary of State (SoS) for Environment, Food and Rural Affairs. The SoS will consider the Planning Inspectorate's report and then decide whether to approve or refuse the development consent. This will confirm whether the scheme can continue through to the construction phase. It typically takes around 18 months to go from submitting an application to a decision being made.

Although the ultimate decision whether to approve the scheme will be made by the Secretary of State, local consultation plays an important role in the DCO process. Before we submit an application to the Planning Inspectorate, we'll carry out our consultation with local communities, as well as engaging and consulting with local councils and other stakeholders.

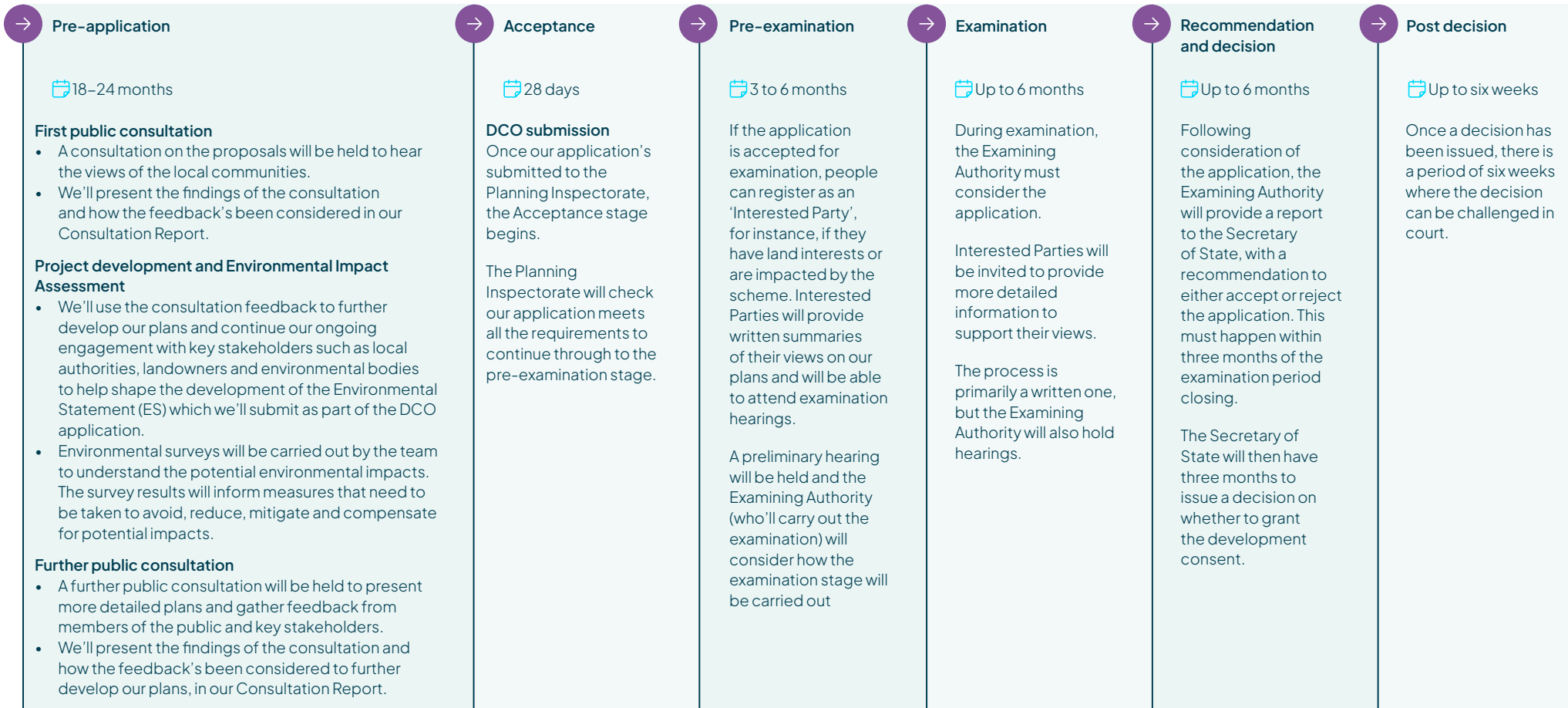
Although we'd apply to the government for permission to build the scheme, local councils and local residents, and landowners can be fully involved in the application process if they'd like to be. If the DCO is approved, then local planning authorities will have a role in approving details of the proposals before construction commences.



DCO timeline



We are
here

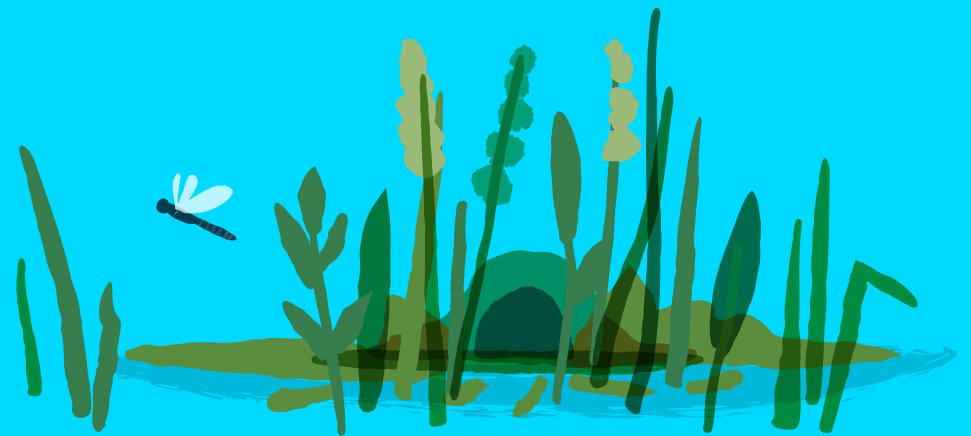


You can find more information on the DCO application process on the Planning Inspectorate's website:

<https://infrastructure.planninginspectorate.gov.uk/application-process/the-process>.

Chapter 8

Next steps



Timeline and next steps

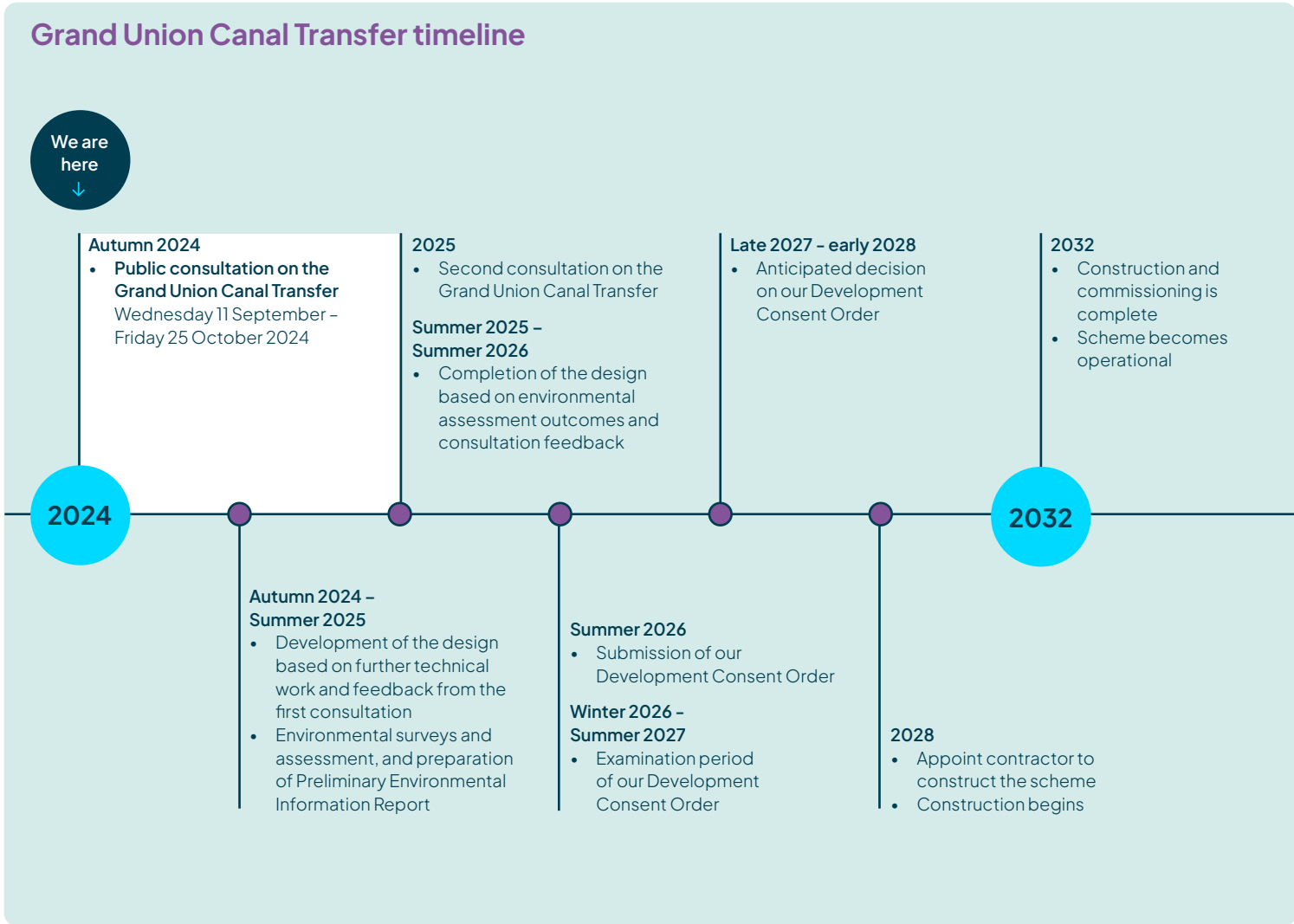
Next steps

This consultation will close on Friday 25 October 2024 at 23:59. We'll then carefully consider all the feedback we've received and review our plans. The feedback will also be summarised in a report that will be published on our website. We'll use community feedback, along with feedback from local authorities, environmental bodies and other local interest groups to further help shape our plans for the Grand Union Canal Transfer. Alongside this, we'll be carrying out lots of environmental assessment work across the scheme area and further technical work.

This will be followed by a further public consultation, allowing plenty of opportunities to have your say and comment as the project progresses. More information on this will be shared on our website closer to the time.

You can sign up to keep up to date at www.guctransfer.co.uk

Grand Union Canal Transfer timeline





Grand Union
Canal Transfer

Speak to the team

If you would like to ask any questions about the scheme, please feel free to get in touch with our engagement team:

 contact@guctransfer.co.uk
 0121 270 5920