

# The Vyrnwy Aqueduct Modernisation Programme

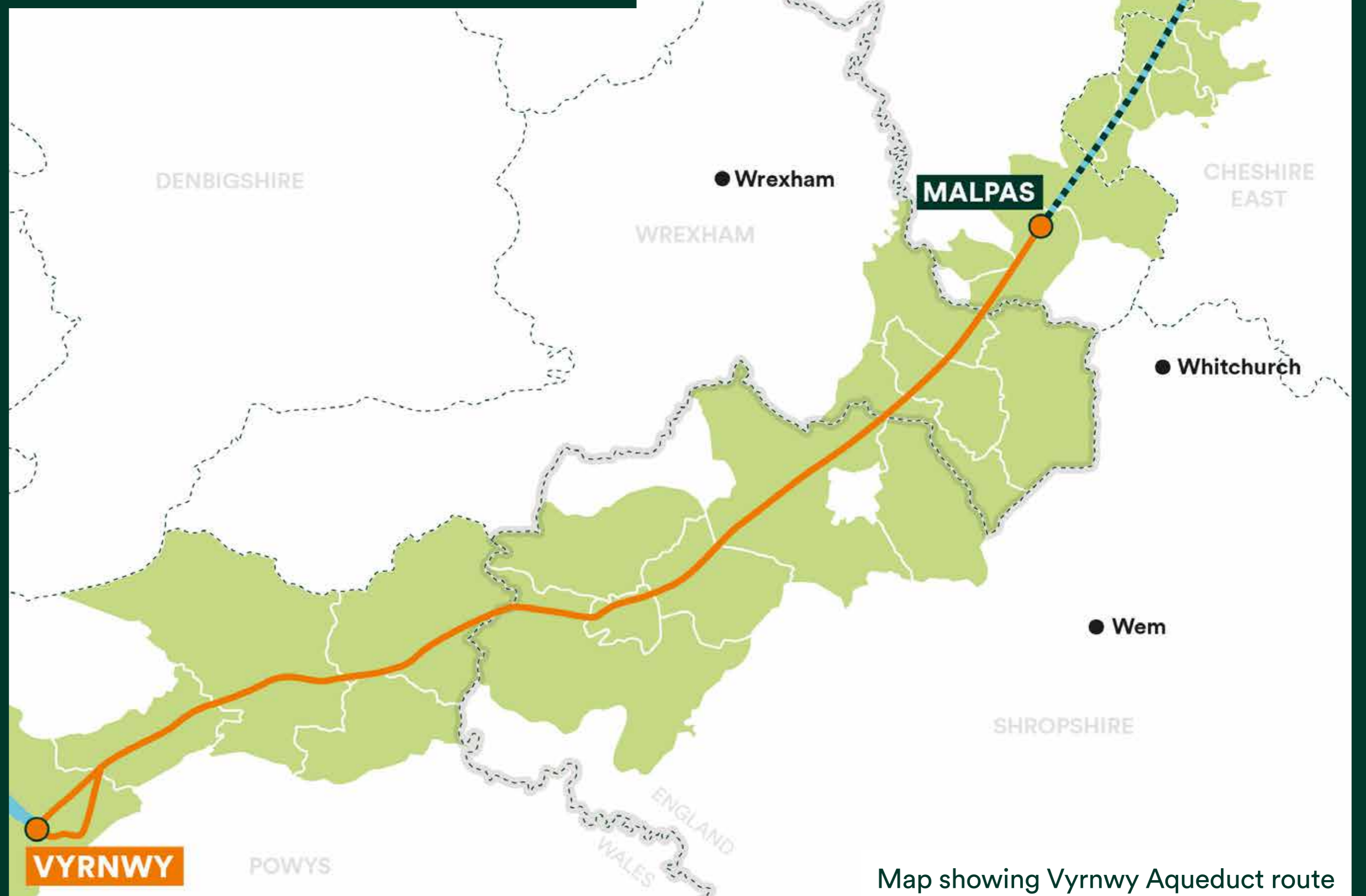
Welcome to our exhibition on the proposals for the Vyrnwy Aqueduct Modernisation Programme

## About the Vyrnwy Aqueduct

The Vyrnwy Aqueduct runs from Lake Vyrnwy through to Merseyside. It was first installed in 1892 and has helped deliver clean, wholesome drinking water to customers and communities across Cheshire, Merseyside and the wider North West region. The aqueduct system comprises of three parallel pipelines, referred to as Lines 1, 2 and 3. Each line is 42 inches (over 1 metre) in diameter and has a combined distance of 110km in length.

- Line 1 is made of cast iron and was constructed between 1881 and 1892
- Line 2 is made of cast iron and was constructed between 1902 and 1905
- Line 3 is made of steel and was constructed between 1926 and 1938

We now need to carry out some work on the three pipelines to ensure the quality of the drinking water for those currently supplied by the Vyrnwy aqueduct.



Construction of the aqueduct in the late 1920s

## Why do we need to do this work?

We have a duty to work with our regulators to ensure the drinking water supplies in the North West are the highest quality.

Over time, a build up of sediment can occur within the aqueduct pipelines. This historical sediment doesn't pose any health risks but can result in discolouration of the water and be detrimental to the internal condition of the pipe.

## What have we done so far?

We've already carried out upgrades at our water treatment works and refurbished around 40% of the pipeline which runs south of Malpas. We're now planning work for the remaining sections of the aqueduct.

## What these proposals mean for the region

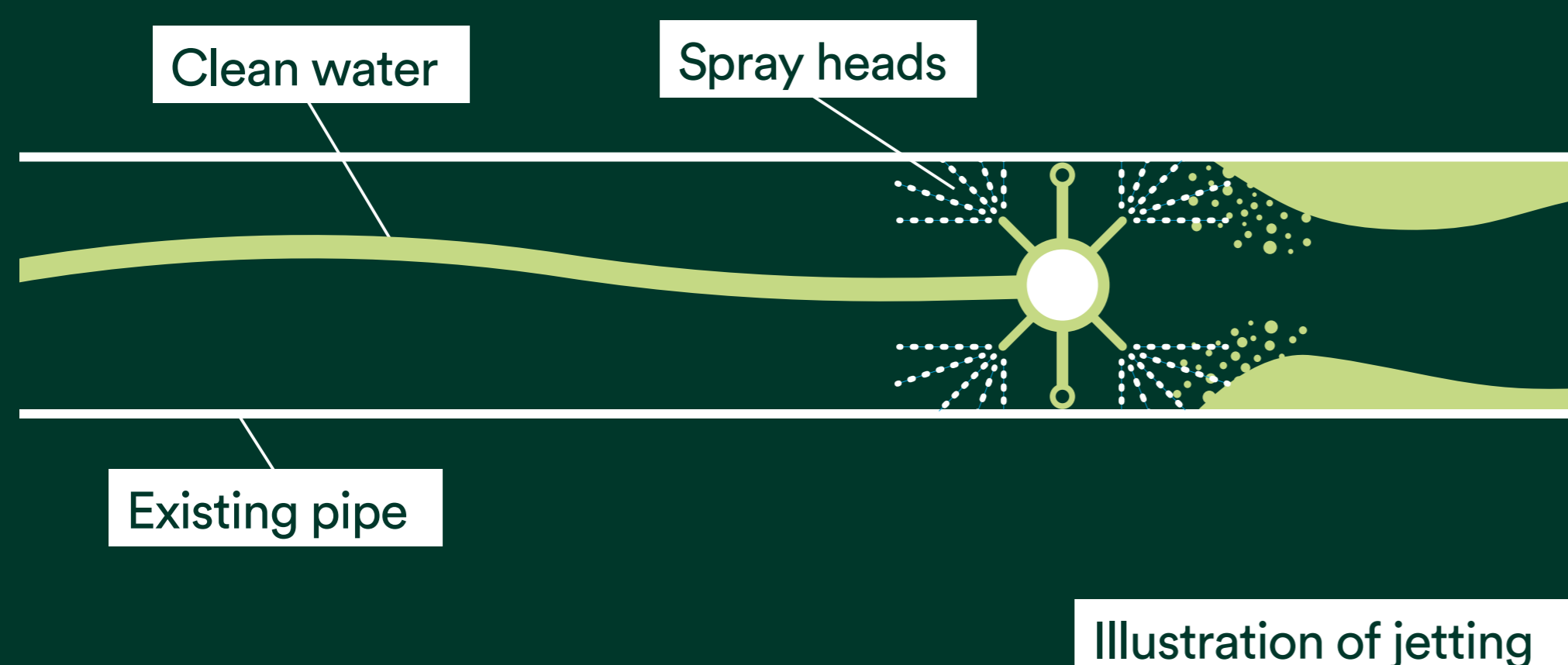
- Securing a long-term, fresh drinking water supply for the North West
- The creation of jobs locally across the North West
- Huge investment into the local and regional economy
- Opportunities to improve your local area and engage local communities

# What our work will involve

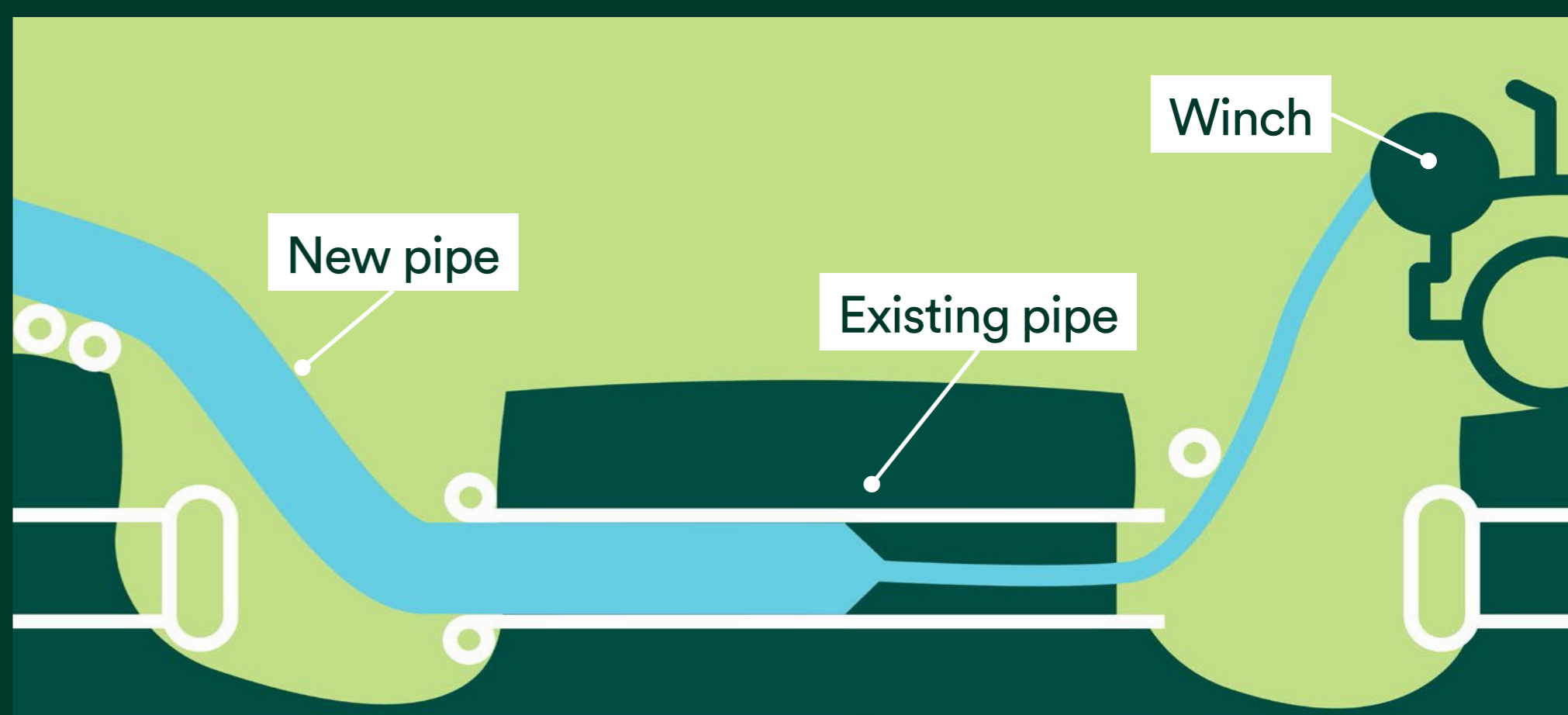
As the pipes are constructed of different materials, and some sections are newer than others, we will use two methods of refurbishment; cleaning and lining.

The more modern line 3 which is made of steel will be cleaned to remove the minerals that have built up over time.

Below is an illustration of a cleaning method we may use.



Due to the ages of line 1 and line 2, we will need to reline these pipelines which will require inserting a new, slightly smaller diameter plastic pipe inside the old main, creating a brand new pipe. This process is called sliplining.



In order to maintain the water supply to our customers throughout the refurbishment programme we will not work on all three lines of the aqueduct at the same time.

## Working areas

The work will be concentrated along the pipeline route and both methods, cleaning and sliplining, will involve digging holes so that we can open up the pipework at multiple locations. At each of these locations we will create securely fenced working areas to accommodate our machinery and equipment.

Though the locations that we need to open up the pipework is based on the distance the equipment can travel inside the existing pipeline and the location of existing valves and connection points, each working area will be set up taking into consideration the impact on the environment, landowners and the local community.

## What will our cleaning working areas look like?

We will require an area up to around 30 metres by 30 metres to allow us to expose and access the pipe and insert the equipment to clean the pipe.

These sites would typically contain:

- An excavated hole, referred to as a pit, which is around 2 metres wide and 6 metres long to provide access to the existing pipework.
- An access track for vehicles to move safely around site. This may be created by laying either aluminium or plastic mats or by placing material such as crushed stone which will be removed when the work is complete.
- Environmental protection measures such as ground water control systems and specialist ecological fencing.
- Separated areas of topsoil and subsoil storage.
- Cleaning equipment such as jetting hose, jetting vehicle with water pumps, water recycling system and a winch.
- Staff welfare areas and space for parking.

The sliplining method will require larger sized working areas, some the size of two football pitches positioned end to end. We will share more information about these in future updates.



# What will our lining working areas look like?

## Working areas

The majority of our work will be carried out in private land at various locations along the pipeline route. Both methods, cleaning and sliplining, will involve digging holes at regular intervals so that we can access our underground pipes.

At each location we will create a secure working area to accommodate the necessary machinery, plant, equipment and staff.

The size of our working areas will be dictated by the work required at each location.

To carry out this work, we will have 3 main types of working areas:

- Launch site
- Winch site
- Intermediate site

## Launch site

Launch sites will be our largest working area where the new pipe will be delivered to site and stored. Once prepared, sections of new prefabricated pipe will be welded together before they are inserted into the existing aqueduct.

In most locations, our launch sites are 100 metres long to accommodate our working area. However, in some locations, the launch site could be used to insert the pipe in two directions making a working area up to 200 metres long, similar to the length of two football pitches.

### These sites would typically contain:

1. Digging a hole in the ground to create an opening and provide access to the existing aqueduct.
2. Topsoil strip and storage.
3. New welded pipes ready to be inserted into the aqueduct.
4. Welding unit to join the new 12 metre pipes together.
5. Storage area for new pipe lining sections ready to be welded together.
6. Staff welfare areas and parking.

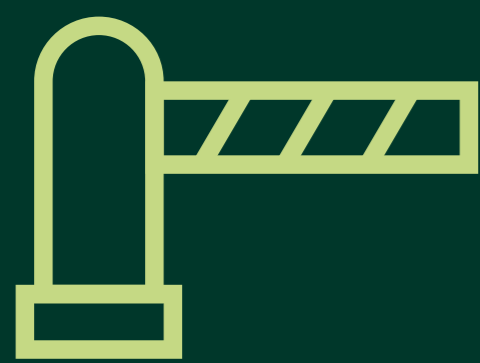


## Winch site

Winch working areas will be used to help pull and guide the new pipe that has been inserted from a launch pit, which could be from up to 800m away. This site will need a 50 metre long by 25 metre wide working area, similar to the size of an olympic swimming pool.

# More about our cleaning work...

## Site access points



When our working areas are in private land, we will need to make use of access points from the local road network. We propose to use existing accesses where possible though for the safety of road users, some will need to be temporarily widened and visibility at the access may need to be increased. This could involve the trimming or removal of hedgerows and trees. We will keep changes to a minimum, and where appropriate we'll use the same single access point to reach multiple working areas.

## Work in the road



For the locations where we need to work in the road to access the pipe, the road working areas for cleaning may be in place for several months at a time. To keep our teams and other road users safe we will have traffic management in place which could include lane closures or traffic lights, and in some instances we may need to create a one-way system or close the road. We recognise the disruption this can cause and will be continually working with the local highways authority and those who could be affected.

More information on the proposed locations of site access points and work in the road as well as an opportunity to provide your feedback can be found on the following pages. We would be happy to hear your views.

## What else can you expect

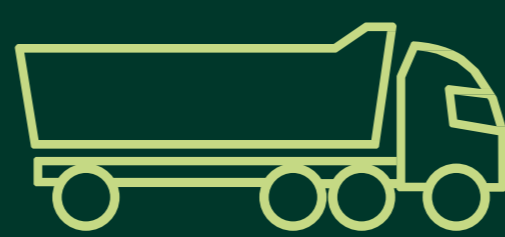
### Construction traffic

There will be an increase in construction vehicles travelling on the roads to, and between our sites, transporting machinery, material and people while we carry out this work. The vehicle types and numbers will vary as our work progresses and it is dependent on the type of working area. Information about the typical vehicle sizes and numbers are below.

### Typical vehicle movements: 10 - 40 Per Day



**85%** Light vehicles



**15%** HGV

We'll make sure that traffic management plans are in place to minimise disruption for the community and the local road network.

### Other traffic management

Where we have site access points, we may require minor traffic management to create a safe access.

We will inform those who will be affected in advance.

## Tree and hedgerow removal



We'll do everything we can to minimise the impact on trees, hedgerows and the environment while setting up our working areas and access points. As part of our modernisation programme we will aim to enhance the local environment where feasible in-line with evolving Biodiversity Net Gain policy.

## Visual and noise impact



This is a large construction project so you will notice and hear our teams as the work takes place. We will be considerate to the local communities around our working areas, providing advance notice of any particularly disruptive elements of work which will all take place during normal working hours. If there are any problems you can contact us anytime of the day or night, 365 days a year.

# Area 04

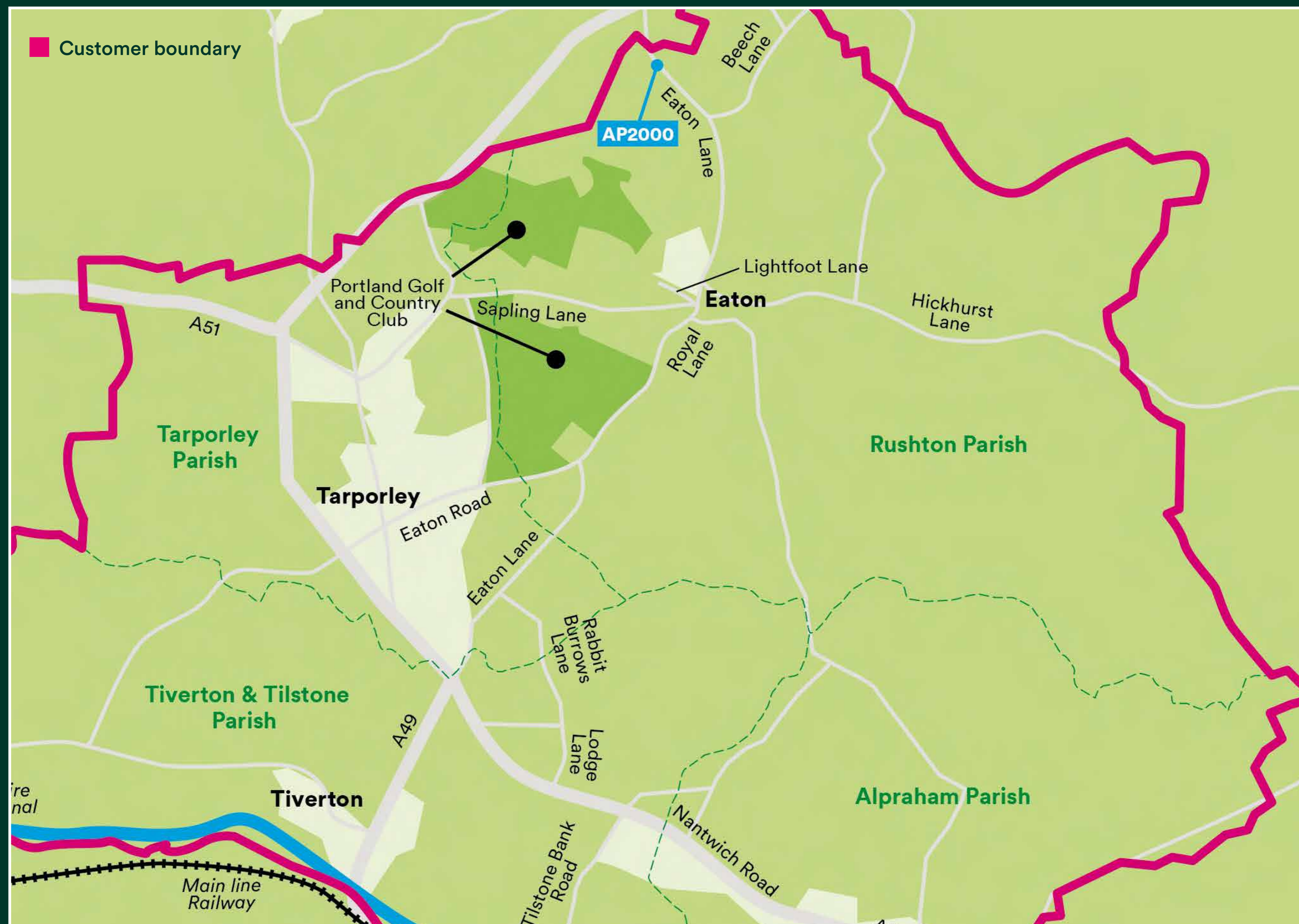
Our work in this area is located within Rushton Parish in Tarporley Ward.

Local authority: Cheshire West and Chester

Parliamentary constituency: Chester South and Eddisbury

Area 04 has work proposed for two sections of the Vyrnwy Aqueduct Modernisation Programme; the Malpas to Tarporley section, and Tarporley to Norton section. The information here relates to proposals for work between Tarporley and Norton. You can find information on the Malpas to Tarporley section at [www.uuhub.co.uk/vyrnwy/malpas-to-tarporley/](http://www.uuhub.co.uk/vyrnwy/malpas-to-tarporley/) which can also be accessed from the home page.

Within the map and table below, we have provided information on the access point required within Rushton to support the Tarporley to Norton section of work. This access point will be the designated point of entry off the highway to our working areas during construction.



Reference	Ward	Parish	Road	Access requirements for line 3 cleaning work
AP2000	Tarporley	Rushton	Eaton Lane	This is the same access point as AP1064 for work on the Malpas to Tarporley section. For work in that section the existing access point will be widened. No additional changes to the access will be required for the work between Tarporley and Norton

We'll continue to consult with landowners, businesses, residents and stakeholders as we develop these plans.

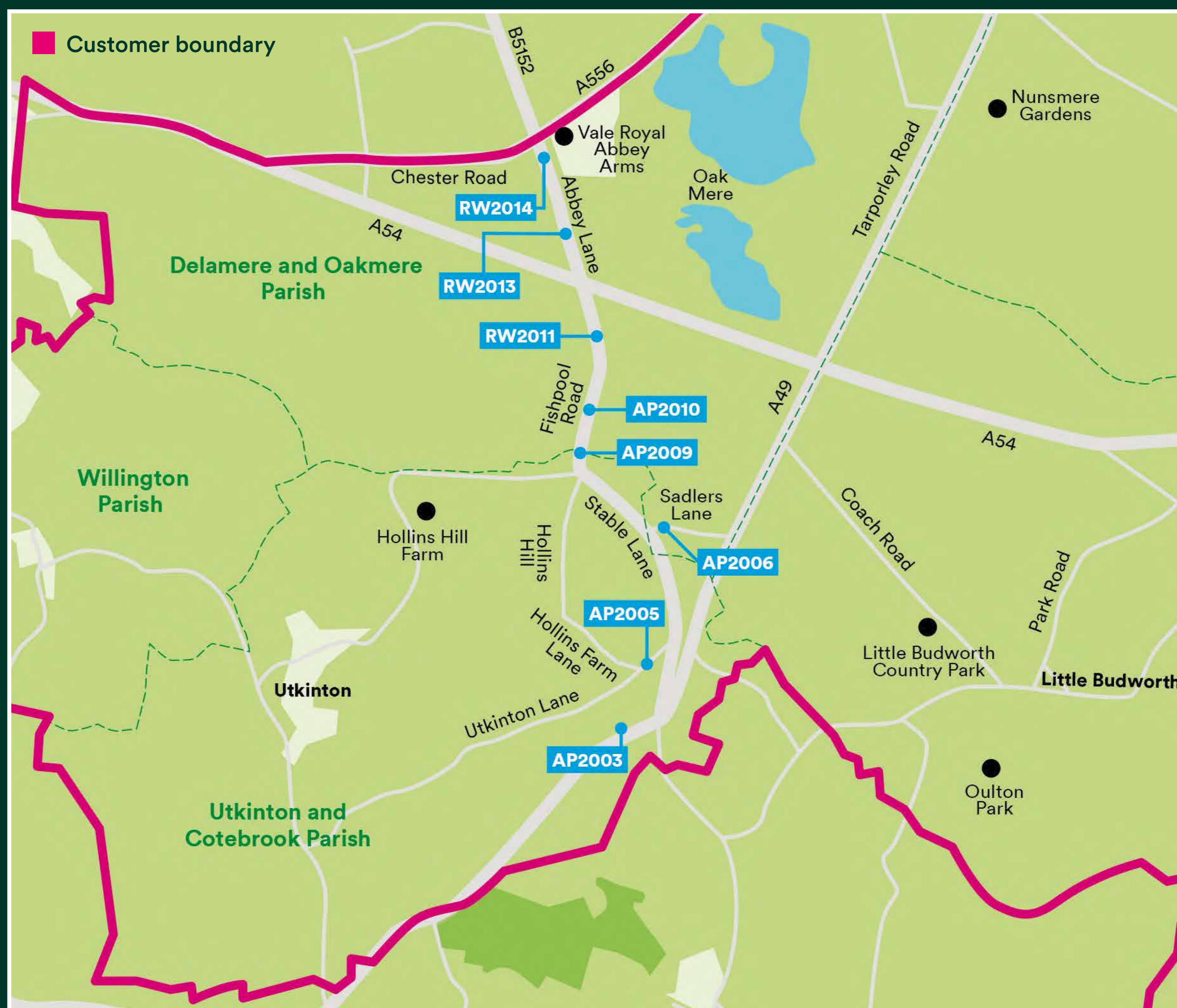
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# Area 05

Our work in this area is located within Utkinton and Cotebrook Parish in Tarporley Ward, and Delamere and Oakmere Parish in Tarvin and Kelsall Ward.

Local authority: Cheshire West and Chester

Parliamentary constituency: Chester South and Eddisbury



Within the map and table below, references starting with AP relate to where there would be an access point from the public road network and those with RW relate to where we need road works to access the pipe.

Reference	Ward	Parish	Road	Access requirements for line 3 cleaning work
RW2014	Tarvin and Kelsall	Delamere and Oakmere	Abbey Lane	Work within the road with a single lane and footpath closure in place with one-way traffic system between the A54 and A556
RW2013	Tarvin and Kelsall	Delamere and Oakmere	Abbey Lane	Work within the road with a single lane and footpath closure in place with one-way traffic system between the A54 and A556
RW2011	Tarvin and Kelsall	Delamere and Oakmere	Fishpool Road	Work within the road with a single lane closure in place with temporary traffic lights
AP2010	Tarvin and Kelsall	Delamere and Oakmere	Fishpool Road	Use of an existing access
AP2009	Tarporley	Utkinton and Cotebrook	Fishpool Road	Use of an existing access
AP2006	Tarporley	Utkinton and Cotebrook	Sadlers Lane	Widening of an existing access from Sadlers Lane near the junction with Stable Lane with a road closure in place on Sadlers Lane
AP2005	Tarporley	Utkinton and Cotebrook	Utkinton Lane	Use of existing access
AP2003	Tarporley	Utkinton and Cotebrook	Luddington Hill (A49)	Widening of an existing access from Luddington Hill (A49) with minor traffic management

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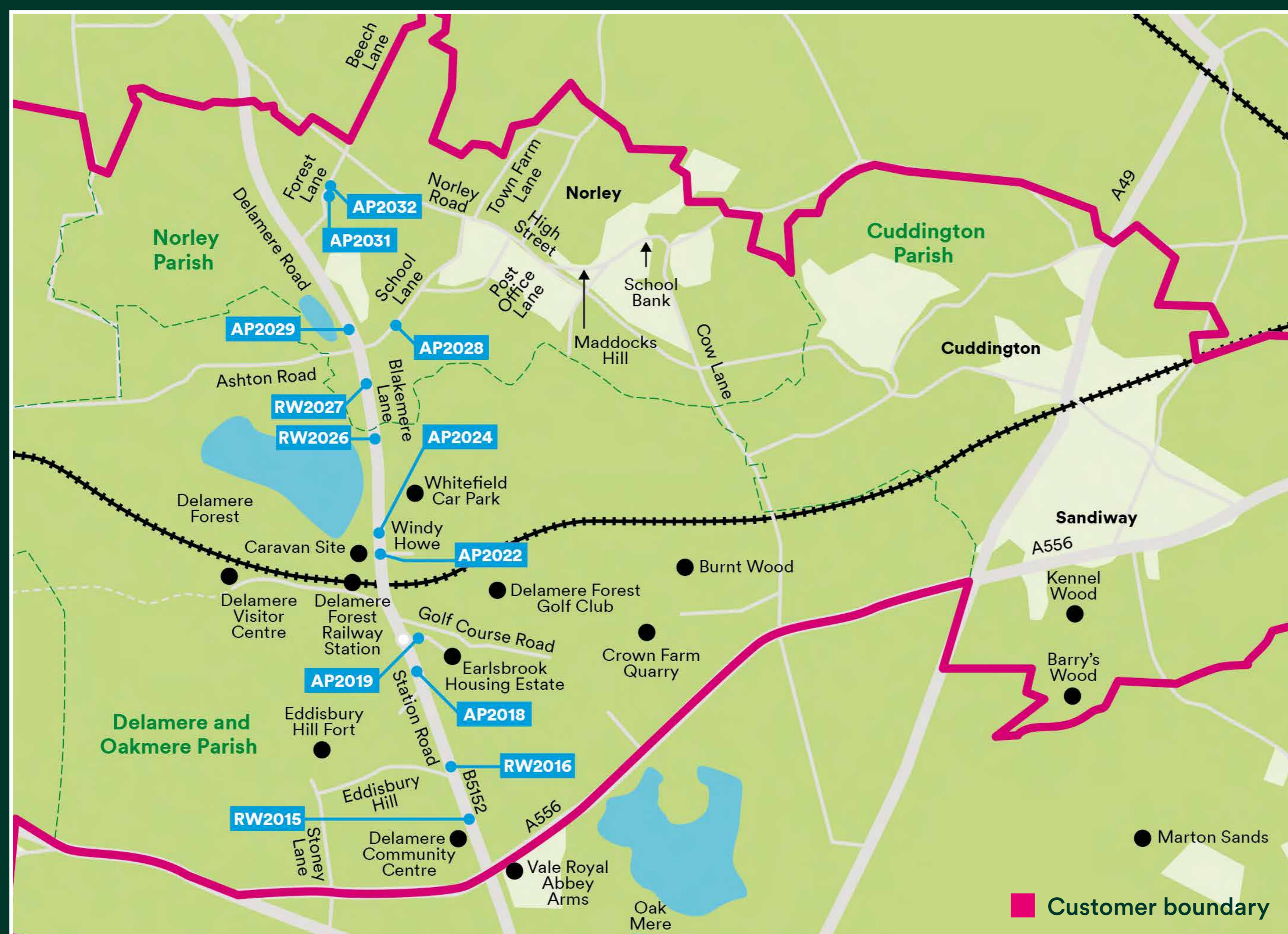
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# Area 06

Our work in this area is located within Delamere and Oakmere Parish in Tarvin and Kelsall Ward and Norley Parish in Weaver and Cuddington Ward.

Local authority: Cheshire West and Chester

Parliamentary constituency: Chester South and Eddisbury



Within the map and table below, references starting with AP relate to where there would be an access point from the public road network and those with RW relate to where we need road works to access the pipe.

Reference	Ward	Parish	Road	Access requirements for line 3 cleaning work
AP2032	Weaver and Cuddington	Norley	Forest Lane	Use of an existing access
AP2031	Weaver and Cuddington	Norley	Forest Lane	Use of an existing access
AP2029	Weaver and Cuddington	Norley	Delamere Road	Use of existing access. This will also be used to access a temporary construction compound (requires planning permission)
AP2028	Weaver and Cuddington	Norley	School Lane	Use of an existing access
RW2027	Weaver and Cuddington	Norley	Blakemere Lane	Work within the road with a single lane closure in place with temporary traffic light control
RW2026	Tarvin and Kelsall Ward	Delamere and Oakmere	Blakemere Lane	Work within the road with a single lane closure in place with temporary traffic light control
AP2024	Tarvin and Kelsall Ward	Delamere and Oakmere	Station Road	Use of an existing access
AP2022	Tarvin and Kelsall Ward	Delamere and Oakmere	Station Road	Use of an existing access
AP2019	Tarvin and Kelsall Ward	Delamere and Oakmere	Mara Drive	Use of an existing access
AP2018	Tarvin and Kelsall Ward	Delamere and Oakmere	Station Road	Use of an existing access
RW2016	Tarvin and Kelsall Ward	Delamere and Oakmere	Station Road	Work within the road with a single lane and footpath closure in place with temporary traffic light control
RW2015	Tarvin and Kelsall Ward	Delamere and Oakmere	Station Road	Work within the road with a single lane and footpath closure in place with temporary traffic light control

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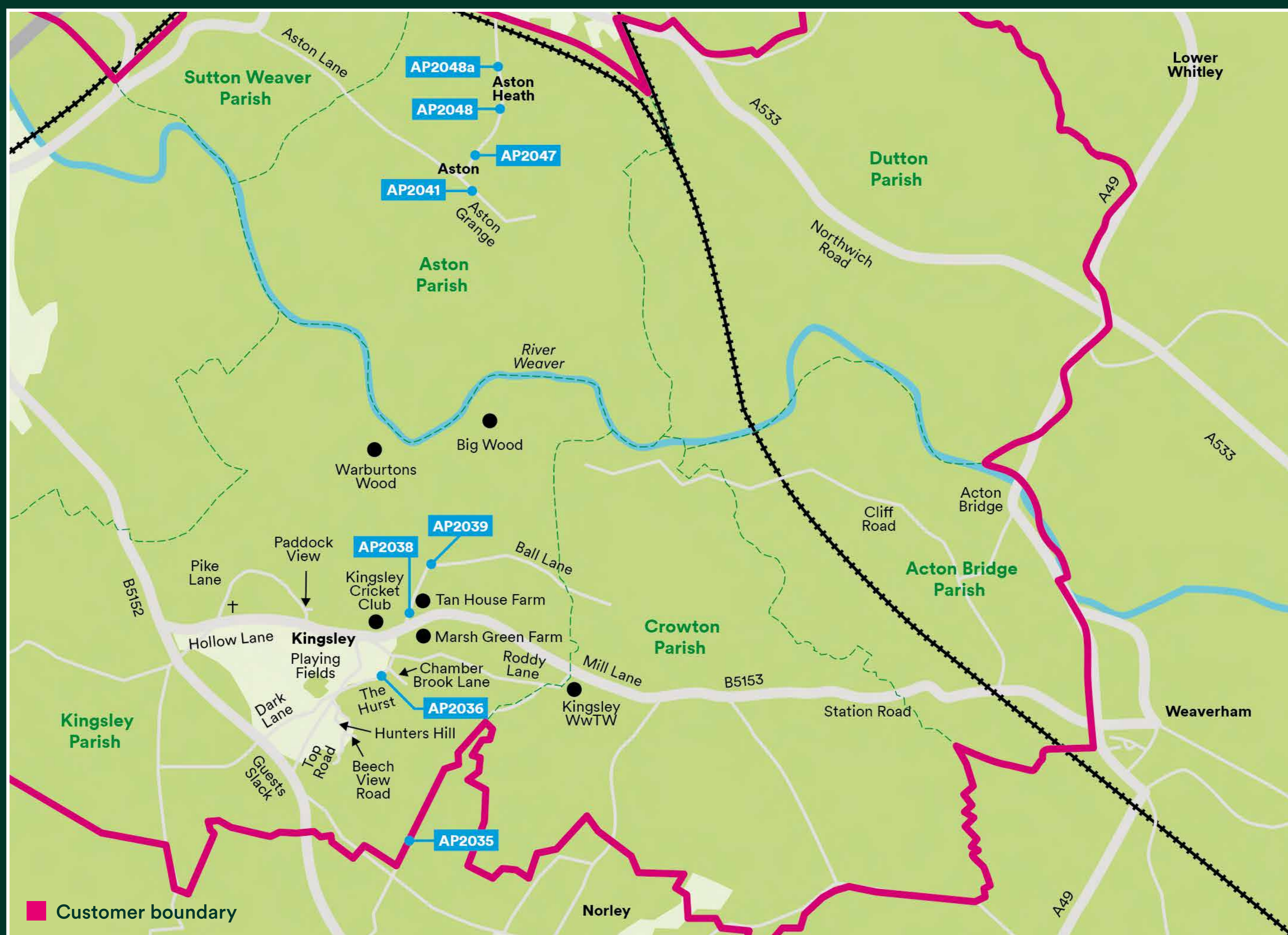
# Area 07

Our work in this area is located within Kingsley Parish in Sandstone Ward and Aston Parish in Marbury Ward.

Local authority: Cheshire West and Chester

Parliamentary constituency: Tatton, Runcorn and Helsby & Chester South and Eddisbury

Within the map and table below, references starting with AP relate to where there would be an access point from the public road network and those with RW relate to where we need road works to access the pipe.



Reference	Ward	Parish	Road	Access requirements for line 3 cleaning work
AP2048a	Marbury Ward	Aston	Aston Lane	Use of an existing access
AP2048	Marbury Ward	Aston	Aston Lane	Use of an existing access
AP2047	Marbury Ward	Aston	Aston Lane	Widening of an existing access
AP2041	Marbury Ward	Aston	Aston Grange	Use of an existing access
AP2039	Sandstone Ward	Kingsley	Ball Lane	Use of an existing access
AP2038	Sandstone Ward	Kingsley	Ball Lane	Widening of an existing access
AP2036	Sandstone Ward	Kingsley	The Hurst	Use of an existing access
AP2035	Sandstone Ward	Kingsley	Beech Lane	Use of an existing access

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# Area 08

Our work in this area is located within Norton South Ward and Norton North Ward.

Local authority: Halton

Parliamentary constituency: Runcorn and Helsby

Within the map and table below, references starting with AP relate to where there would be an access point from the public road network and those with RW relate to where we need road works to access the pipe.



Access Point	Ward	Road	Access requirements for line 3 cleaning
AP2055	Norton North	Holbeck (off Tower Lane)	Creation of a new temporary access point from the highway (requires planning permission)
AP2054	Norton South	Cleethorpes Road	Use of an existing access
RW2052	Norton South	Murdishaw Avenue	Work within the road near to the Murdishaw Avenue/ Barnfield Avenue roundabout with temporary traffic light control on the three junctions off the roundabout
AP2051	Norton South	Stockham Lane	Use of an existing access
AP2050	Norton South	Stockham Lane	Use of an existing access

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# Next Steps

To help us to plan and carry out this important modernisation programme we have already started carrying out some initial preparation work.

## Investigations and surveys

To help us to develop our plans we will be in the area carrying out surveys to; identify and locate existing utility services (such as gas, water and electricity), investigate the ground conditions we will be working in and, to understand ecological constraints local to our working areas.

## Enabling work

We need to carry out some essential upfront work which will involve repairing and installing new underground equipment, setting up compounds and temporary working areas, and installing access points.

## Stakeholder and customer engagement

Early engagement with our customers and other stakeholders including landowners, highways authorities, councillors, businesses and other interested groups and organisations to provide valuable feedback on our plans.

## Submitting planning applications

The temporary working areas and access tracks are required to work on our existing pipe and so do not require a planning application, however we will need to apply for planning permission for the creation of some temporary access points and compound areas.

### Proposed timescales for Tarporley to Norton section

2022	Summer	Begin stakeholder engagement and consultation
		Begin site investigations and surveys
	November	Launch Virtual Exhibition
2023	March	Apply for planning permission for cleaning work
		Public exhibitions and drop-in sessions
	Spring	Begin enabling work including environmental protection measures
	Summer	Develop proposals for sliplining
		Begin cleaning work
	Autumn	Apply for planning permission for sliplining work
	Winter	Begin enabling work for sliplining
2024	Spring	Begin sliplining work
	Winter	Complete cleaning work
2027		Complete sliplining work
2028		Working areas reinstated

### Tell us what you think

Thank you for visiting our virtual exhibition. Please take a moment to complete our feedback form.  
[Your feedback](#) is valuable to us as we plan and prepare to carry out this programme of work.

We will always look for opportunities to make things quicker, less disruptive and cost less for our customers and will keep you regularly updated as our programme progresses.