Uisce Éireann
Irish Water

Landowner Handbook

Water Supply Project,
Eastern and Midlands Region

Contents

OVERVIEW

CONSTRUCTION

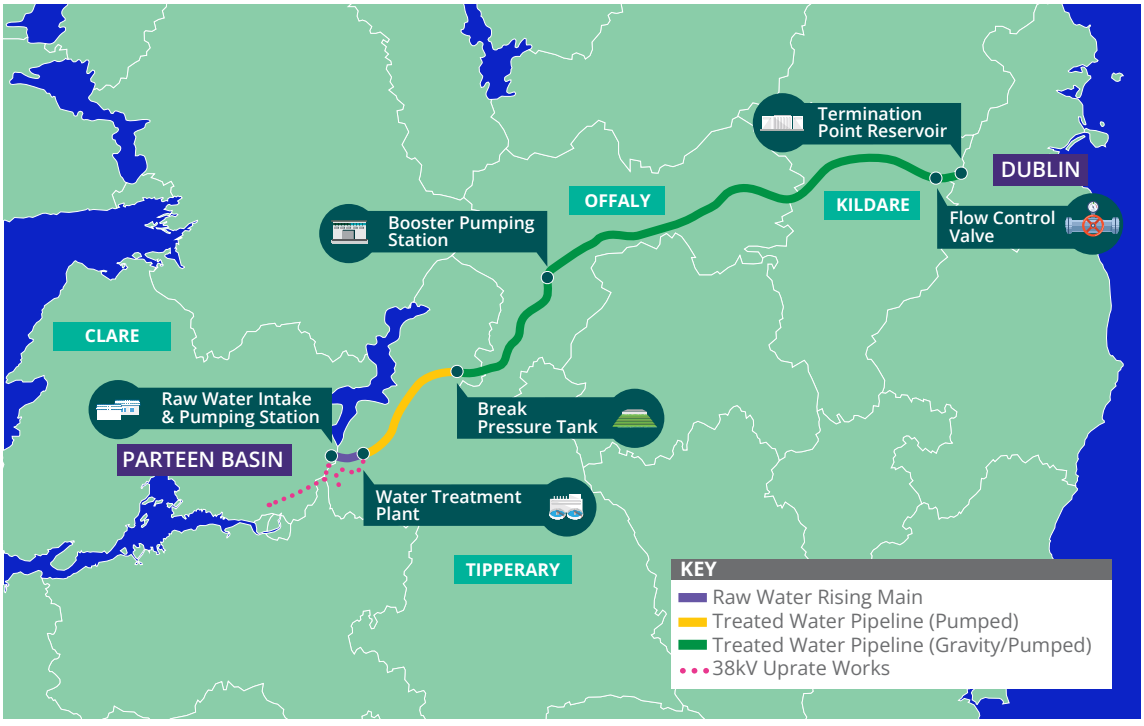
POST CONSTRUCTION

Overview of the Water Supply Project, Eastern and Midlands Region

Uisce Éireann has a remit to deliver secure, reliable and sustainable long-term water supplies which facilitate economic and population growth, including the demand for housing. For the Eastern and Midlands Region, rising to this challenge requires a new water source. The proposed Water Supply Project Eastern and Midlands Region (WSP) forms part of the National Water Resources Plan, our 25-year strategic plan for the public water supply in Ireland. WSP is a critical national infrastructure project which will have capacity to support the water supply needs for up to 50% of our population.

WSP will provide a resilient and sustainable interconnected supply of treated water for the Greater Dublin Area, consisting of Dublin, and parts of Meath, Kildare and Wicklow, with a new supply of water and will have the capacity for future offtakes to supply communities in Tipperary, Offaly and Westmeath along the route. It will also enable supplies currently serving Dublin to be redirected back locally in Carlow, Wicklow, Meath and Louth. The project will abstract water from the lower River Shannon at Parteen Basin in County Tipperary, which will then be treated at a new water treatment plant at Birdhill. Treated water will then be piped 170 km across the midlands to the Termination Point Reservoir at Peamount in South County Dublin.

The construction works for the WSP are proposed to commence during 2028, subject to planning approval from An Bord Pleanála. Works on the full project are expected to take around 5 years in total, with each parcel of land affected by the works expected to be out of production for 18-24 months.



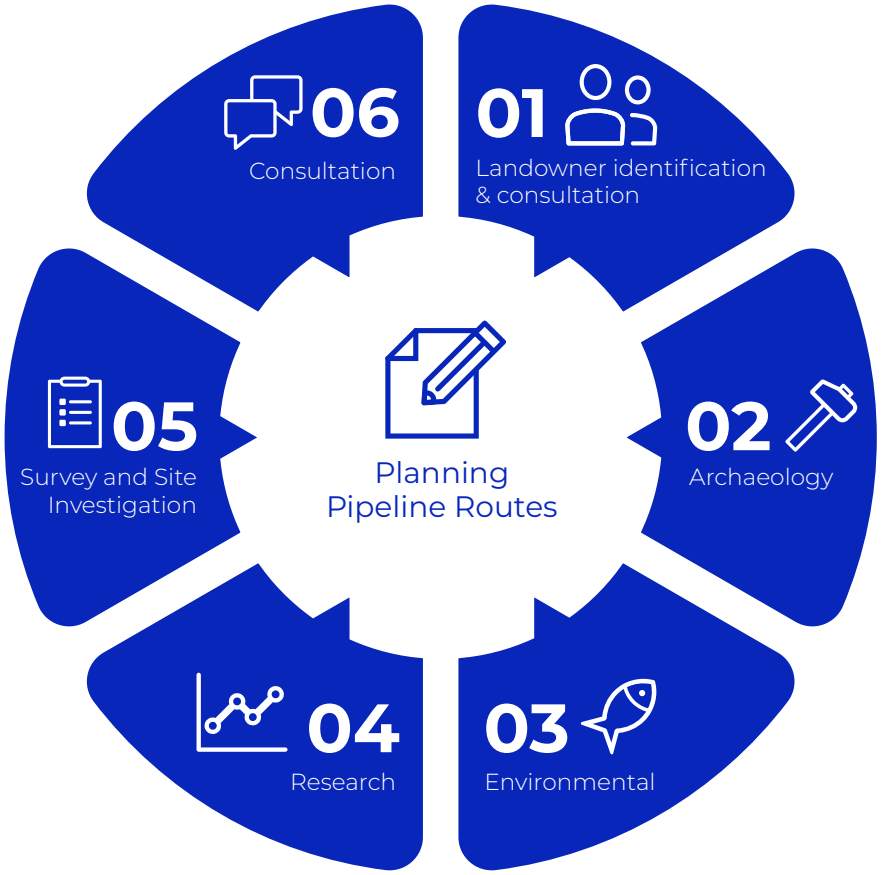
Planning Pipeline Routes

In developing the project, we have undertaken detailed routing studies and environmental assessments and are committed to preserving the built and natural heritage along the pipeline route. We commit to engaging with those who might be affected by construction and operation at every stage of the process and we understand the impact our activities might have on our stakeholders and communities.

Landowner Liaison Officers (LLOs) have been appointed during the planning phase, and will remain in place throughout construction, reinstatement and handover to liaise directly with landowners, address any queries they may have throughout the lifecycle of the project and act as the interface between the landowner and the construction team.

Surveys

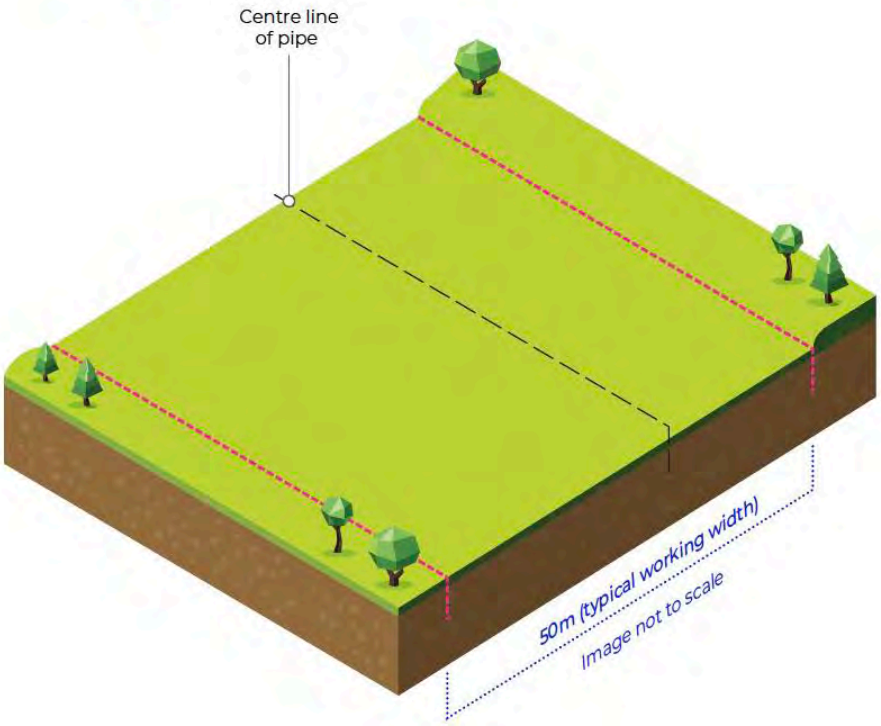
When selecting the proposed pipeline route, we carried out a number of desktop studies and environmental walkover surveys. We will continue to carry out a variety of surveys, such as topographical, archaeological, environmental and geological surveys along the proposed pipeline route, up to the start of construction. These are required to provide certainty of design and will be carried out in consultation with landowners.



Wayleaves, Landowner and Occupier Agreements

Our approach for this project has been to enter into discussions with landowner representative organisations at an early stage. The aim of these discussions is to describe the pipeline construction method as outlined in a Code of Practice and to agree financial compensation terms, which will be offered to the landowner, in return for voluntary acceptance of a wayleave through their lands. A wayleave is a right enjoyed over the lands of another. In the case of the WSP, the right being acquired from a landowner is the right to lay, inspect and maintain a water pipeline and any other associated items such as valves, chambers and kiosks that are connected with the pipeline.

Planning



Working with Landowners

Items to be discussed and agreed with landowners before any work starts may include but are not limited to:

- Particular access requirements for livestock and vehicles to ensure suitable access is maintained for the duration of the works;
- Fencing requirements, to ensure the appropriate temporary fencing and gates are used during construction;
- Presence of any existing drainage and utilities, to ensure connections are maintained, or temporary solutions implemented, during construction works (appropriate permanent solutions will be put in place when the works are completed); and
- Any local ecology the landowner is aware of, including invasive species, and issues which may be relevant to the construction works.

You are in receipt of a "Wayleave Package" comprising a Letter of Offer, a Consent Form, a Wayleave Map showing the proposed pipeline route, the Code of Practice, an Owner/Tenant Form and a draft Deed of Easement.

Compensation will be paid to consenting landowners as outlined in the Letter of Offer and Code of Practice. We will also pay advance compensation for losses and disturbance. This is payable on the issue of a Notice of Entry, which marks the beginning of the construction phase of the project. This payment will be taken into consideration when losses and disturbance compensation is calculated by the Landowner Agronomist.

On completion of the pipeline, the 20-metre-wide permanent wayleave along the pipeline route will be documented by a Deed of Easement.

As a landowner, you have rights under these agreements and we are bound by these. Uisce Éireann has a statutory obligation to develop and maintain the pipeline system in a safe and efficient manner.

Indicative 18 month Construction Programme
Agree landowner requirements, complete condition surveys and take possession of land
Installation of temporary fencing, access gates, signage. Removal of hedgerows and tree felling
Topsoil and Subsoil Stripping. Installation of Construction Road
Pipe Haulage and Distribution - haulage of pipe lengths and stringing along Construction Working Width
Trench excavation
Pipe Installation including laying the pipe in the trench
Pressure test the pipeline
Backfill of the trench and installation of valve chambers
Reinstatement of drainage, subsoil, topsoil, existing ground contours, hedgerows, permanent fencing
Reseed the land and growth period
Return the land

Indicative 24 month Construction Programme
Agree landowner requirements, complete condition surveys and take possession of land
Installation of temporary fencing, access gates, signage. Removal of hedgerows and tree felling
Topsoil and Subsoil Stripping. Installation of Construction Road
Pipe Haulage and Distribution - haulage of pipe lengths and stringing along Construction Working Width
Trench excavation
Pipe Installation including laying the pipe in the trench
Pressure test the pipeline
Backfill of the trench and installation of valve chambers
Reinstatement of drainage, subsoil, topsoil, existing ground contours, hedgerows, permanent fencing
Reseed the land and growth period
Return the land

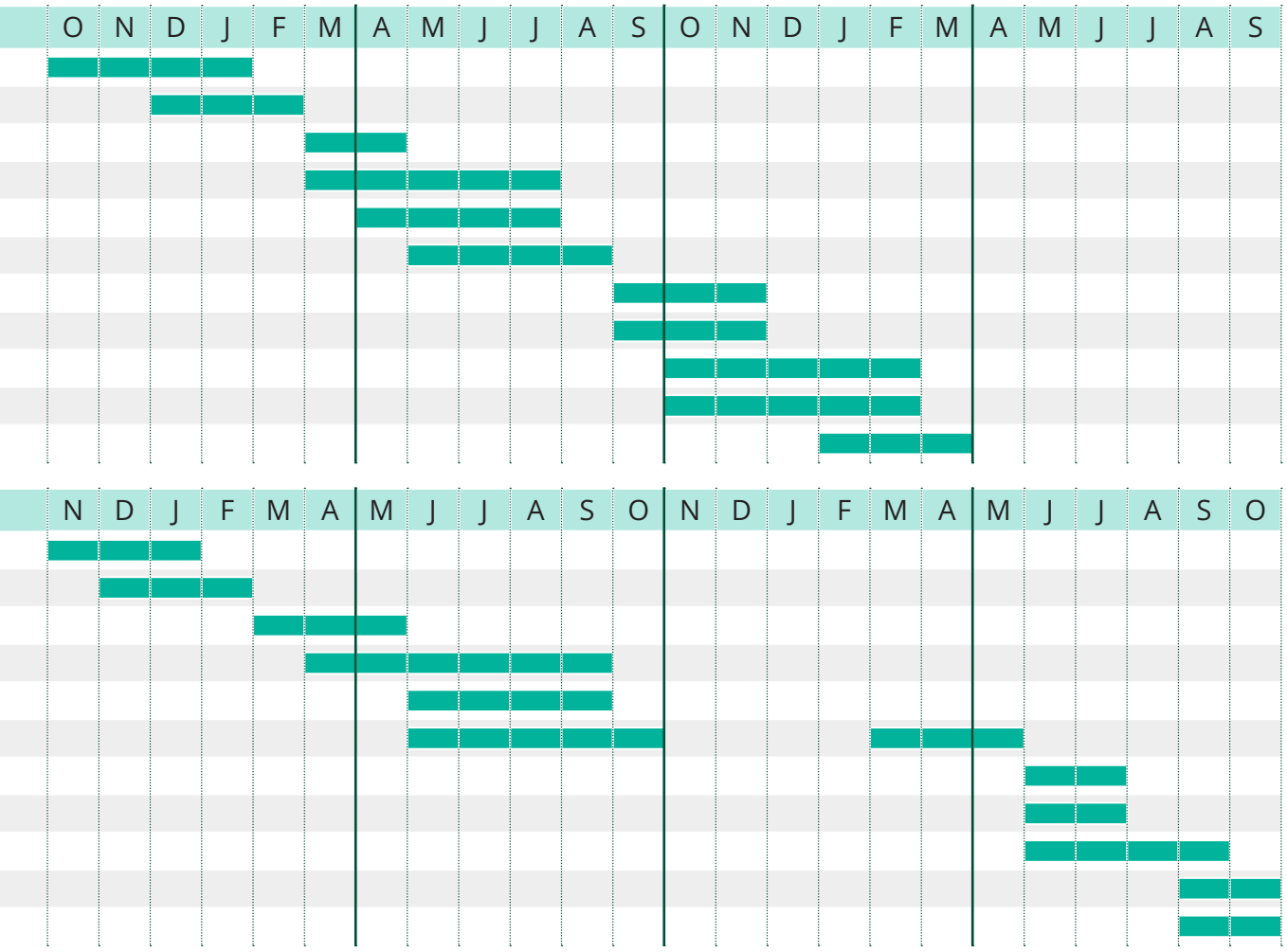
NOTE: 1 Pipeline commissioning will take place at the end of the overall construction programme, when all sections have been installed and tested.

The Construction Process

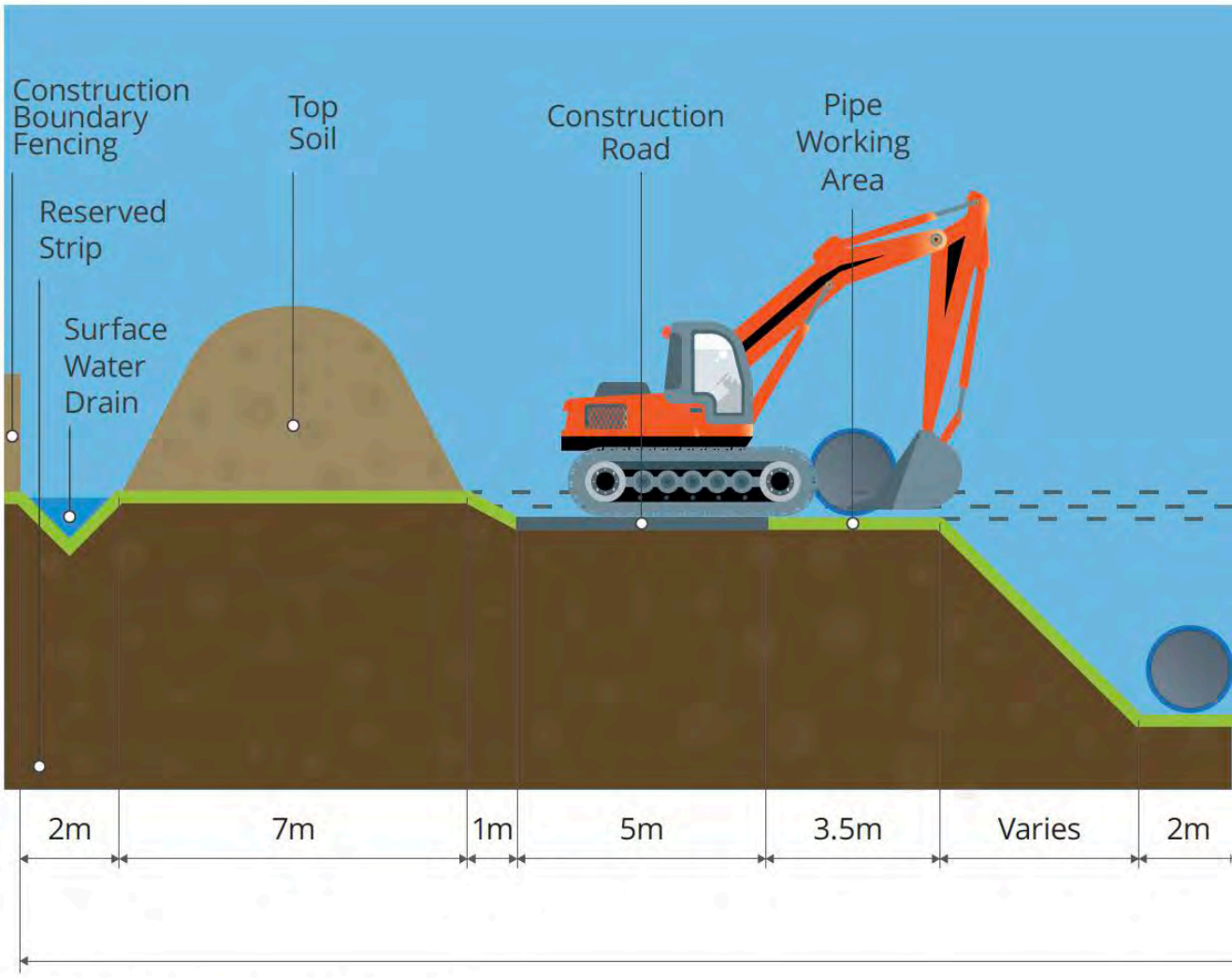
Our LLOs will complete a "pre-entry" agreement with each landowner, before construction starts. The agreement will record the condition of the lands, the type of permanent and temporary fencing necessary and access required to the remaining lands outside the working width. The agreement will also contain specific details of how the land will be reinstated when the works are finished. The advance compensation for crop loss and disturbance will be paid before entry to the land.

Throughout the planning and construction phase of the project, landowners will be kept informed by the LLOs of the planned construction activities and schedule for the start and finish of construction on their land. LLOs will be available to answer any queries that landowners may have with regard to construction activities for the full duration of the project.

Uisce Éireann will appoint suitably qualified contractors to carry out pipeline construction activities. The pipeline which is 1.6m in diameter, will be constructed in steel and will be built, operated and maintained to the highest national and international safety standards. Safety is our priority at all stages of pipeline construction and operation.



2 Subject to the provisions of the Code of Practice certain activities, within appropriate sections of pipeline, may progress concurrently/simultaneously.

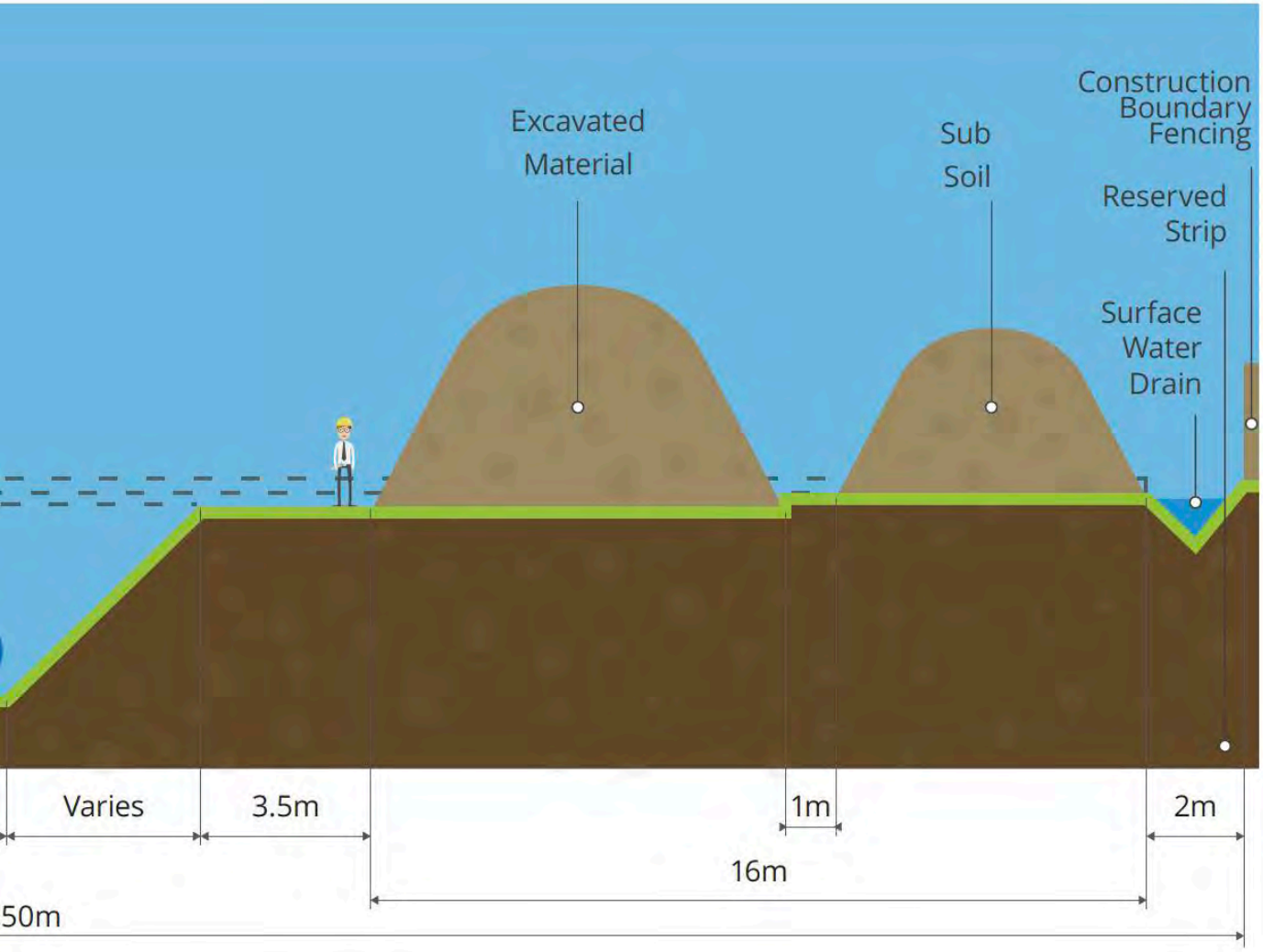


INDICATIVE CONSTRUCTION WORKING WIDTH

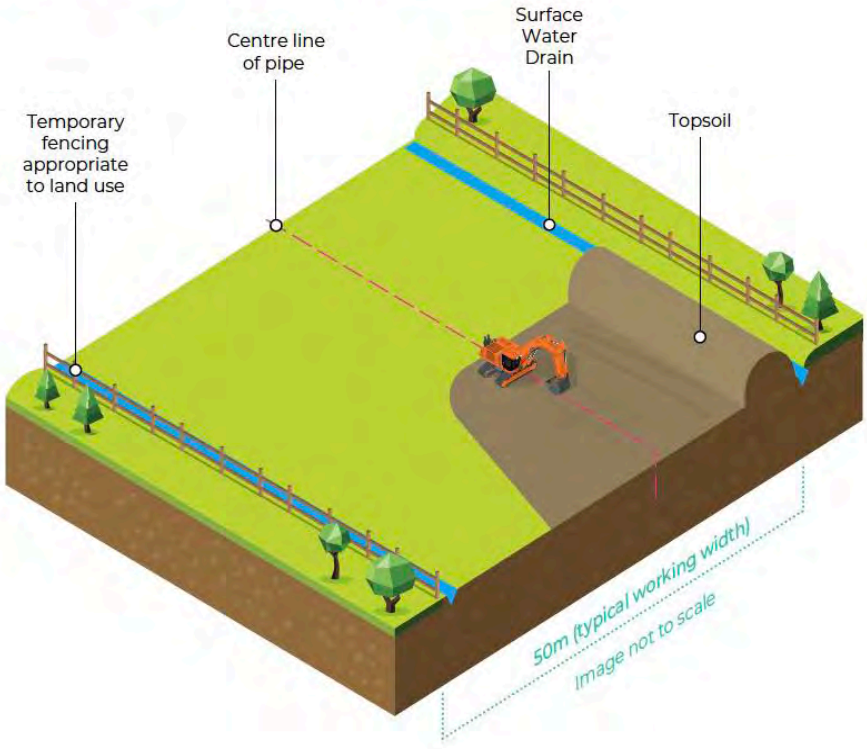
Preparation of the working width

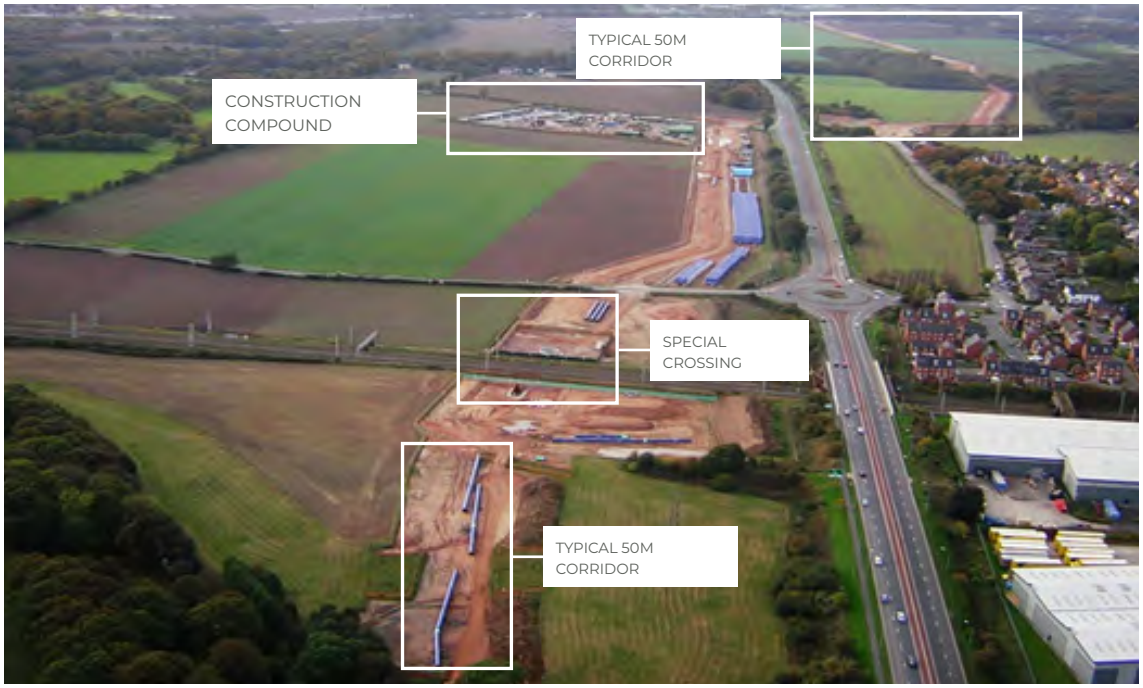
To begin, the route will be surveyed to ensure the pipeline route is accurately marked out as per the design shown in the mapping. Temporary construction fencing will then be erected at both sides of the working area and field boundaries cleared, where required, to allow access for site vehicles.

The type of fencing used will depend on the particular farming enterprise and our LLOs will agree this with landowners in advance of the works. Fencing will be put in place before construction starts and will be removed following reinstatement of the land.



The Construction Process
Preparation of the working width

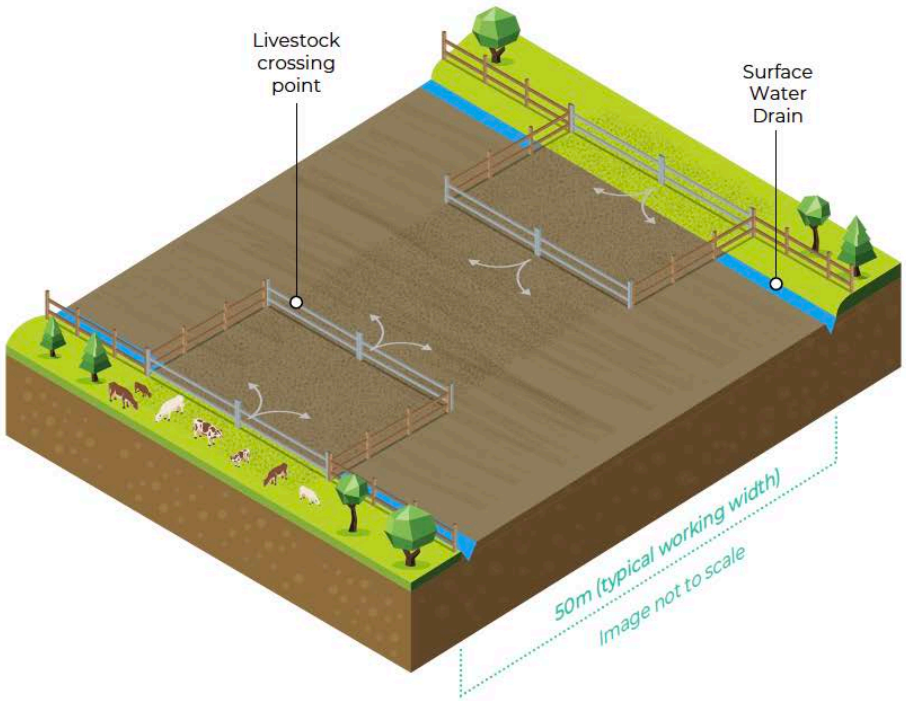




AERIAL VIEW OF A TYPICAL PIPELINE OPERATION WITH A 50M WORKING WIDTH

The working width is envisaged to be typically 50 metres, however there can be situations where additional areas will be required, such as at road, river or rail crossings and to accommodate more complex construction such as tunnelling. Access across the working width may be required to facilitate activities on the lands. This can be accommodated in most instances or alternative arrangements will be provided. Where necessary, the working area will incorporate access gates for livestock and boundary gates at road crossings. Water supplies and water troughs, where affected by the fenced-off area, will be provided outside the working width.

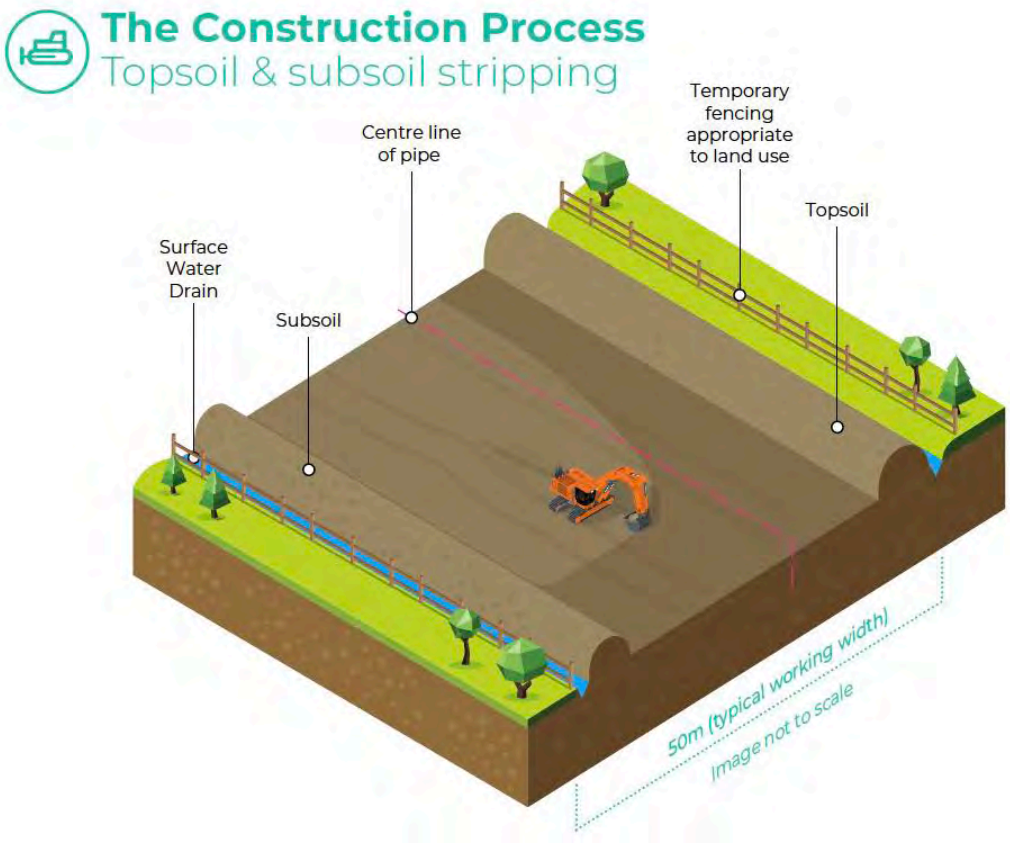
The Construction Process
Crossing points



Topsoil and subsoil stripping

Topsoil will be stripped and stockpiled at one side of the working area, and the depth of topsoil stripped will be recorded for each parcel of land.

A portion of the top layer of subsoil will also be stripped and stockpiled separately to the topsoil. This portion of subsoil will also be stored until it is used to assist in the proper reinstatement of the corridor at the end of the works.



The remaining subsoil surface forms the common work area and travel lane for all pipeline construction traffic. Care will be taken to ensure that material which is excavated at a later stage does not mix with the stockpiled topsoil or subsoil which will be used during reinstatement.

All ditches, open drains or watercourses interfered with by the works will be maintained in effective condition during construction and finally restored to as good a condition as before the start of the works.

Particular care shall be taken to ensure that the minimum amount of damage or disturbance to land drains is caused, and where practicable the pipeline shall be laid to run below the level of the land drains.

Temporary settlement ponds will be used to manage excess surface water flows. These ponds will either soak away to the ground or provide controlled discharge to watercourses.

Archaeology

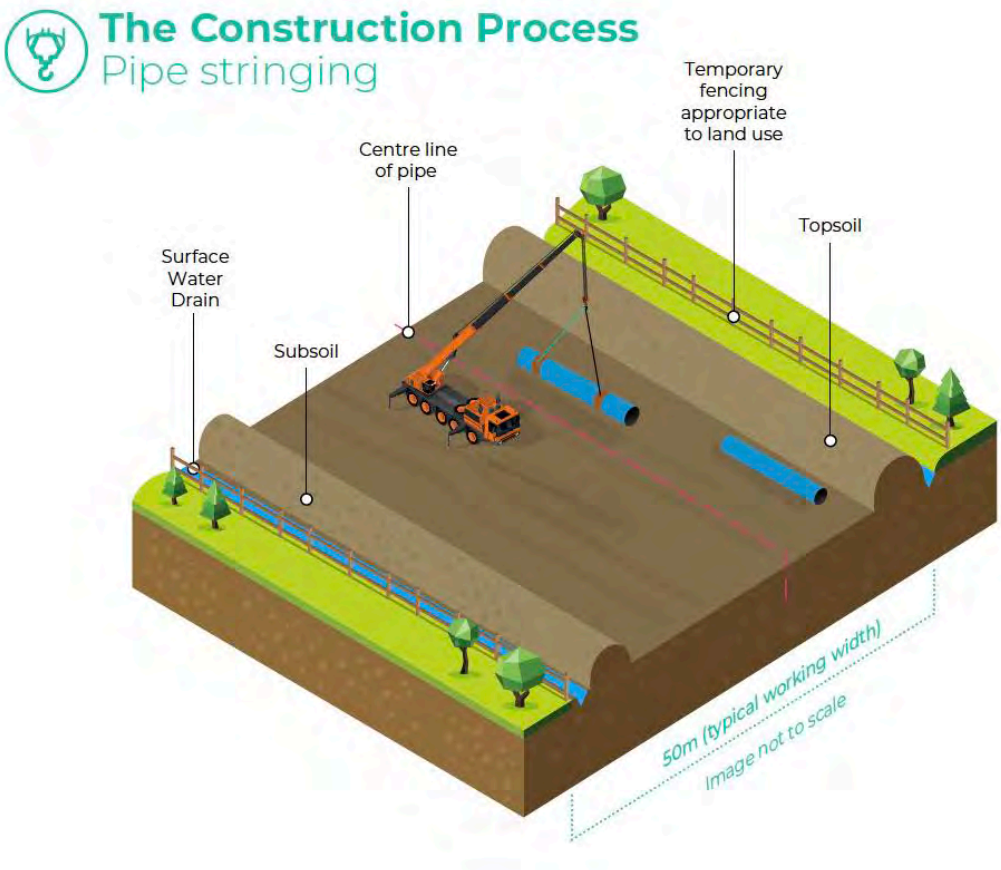
Archaeologists will be present during topsoil stripping activities should any items of interest be found. In the case of an archaeological find, detailed examination, recording of data and possible protective measures will be put in place, before works continue in that area. Major finds will be documented and recorded.

DOCUMENTING ITEMS OF INTEREST

Pipeline stringing and assembly

Pipes will be stored temporarily in site compounds or pipe storage depots before being transported to the pipe laying area for unloading. Pipes will be transported to site by lorry, or tractor and trailer, in individual lengths. The pipe lengths will then be unloaded and placed along the corridor adjacent to the pipe trench in which they will be laid. This process is known as pipe stringing.

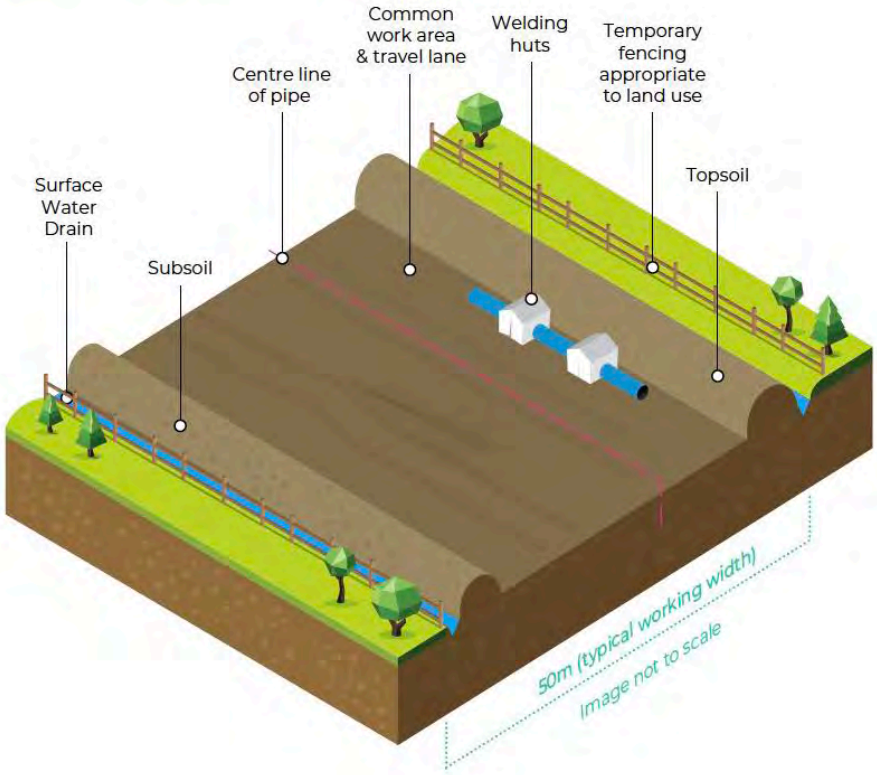
The type of pipe haul vehicles used will be suitable for the condition of the haul road in that location. Pipe lengths will be offloaded by side boom or excavator and laid end-to-end, parallel to where the trench will be excavated. At road and river crossings, the pipe will be stockpiled on one side of the crossing inside the corridor. Where crossings are being made by trench, the pipe lengths will be prepared on one side of the crossing to minimise the duration the trench is open for the full width of the crossing.



The pipe lengths will be cleaned, prepared, and inspected before being lowered into the trench. A welded pipe system will be used where multiple pipes will be joined together at ground level to form the longest continuous sections that are both safe and practical to install given the physical constraints of that location, pipe material, joining method and available plant.

PIPE LENGTHS BEING UNLOADED USING A VACUUM LIFT

The Construction Process
Pipe welding

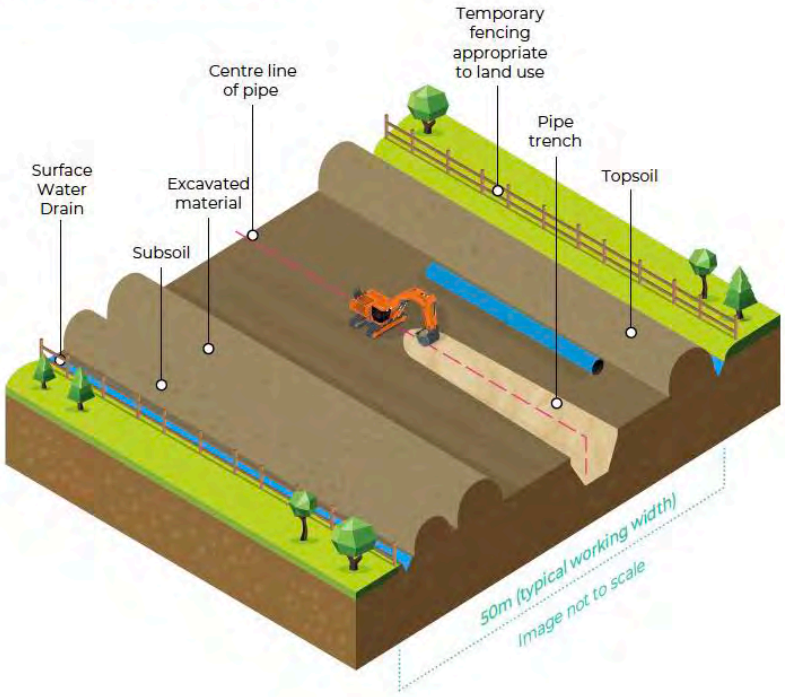


Trenching

The main trench excavation will be predominantly open cut and carried out with plant such as excavators. Excavated material from the trench will be stored at a suitable distance from the trench and on the opposite side of the trench to where topsoil will be stored.

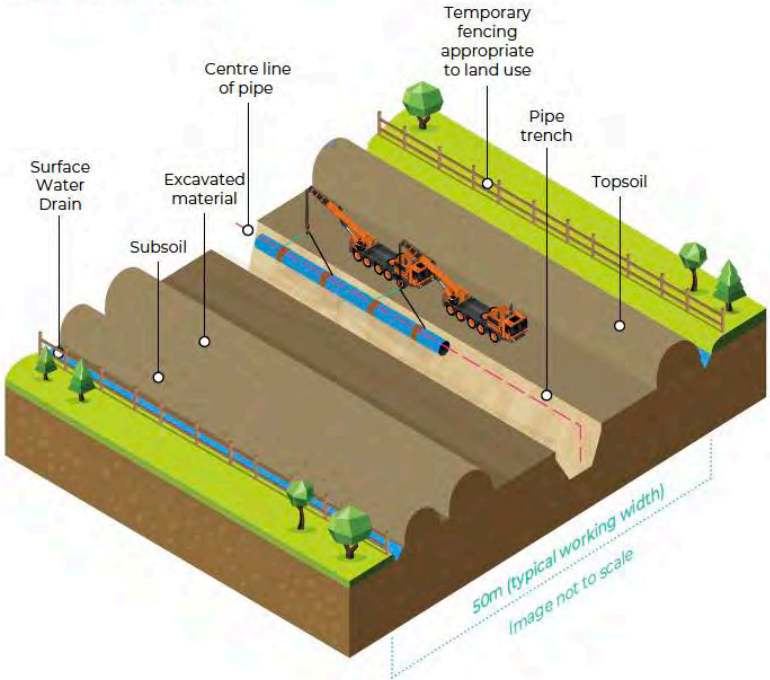
TRENCHING USING EXCAVATORS

The Construction Process
Trench excavation



In order to minimise the duration that the trench is open, the trenching operation will only start once the pipeline installation and backfill crew are ready to install the pipeline in that location. Before trenching starts, dewatering may be required to ensure safe working conditions. This may require the temporary construction of settlement ponds within the temporary working area.

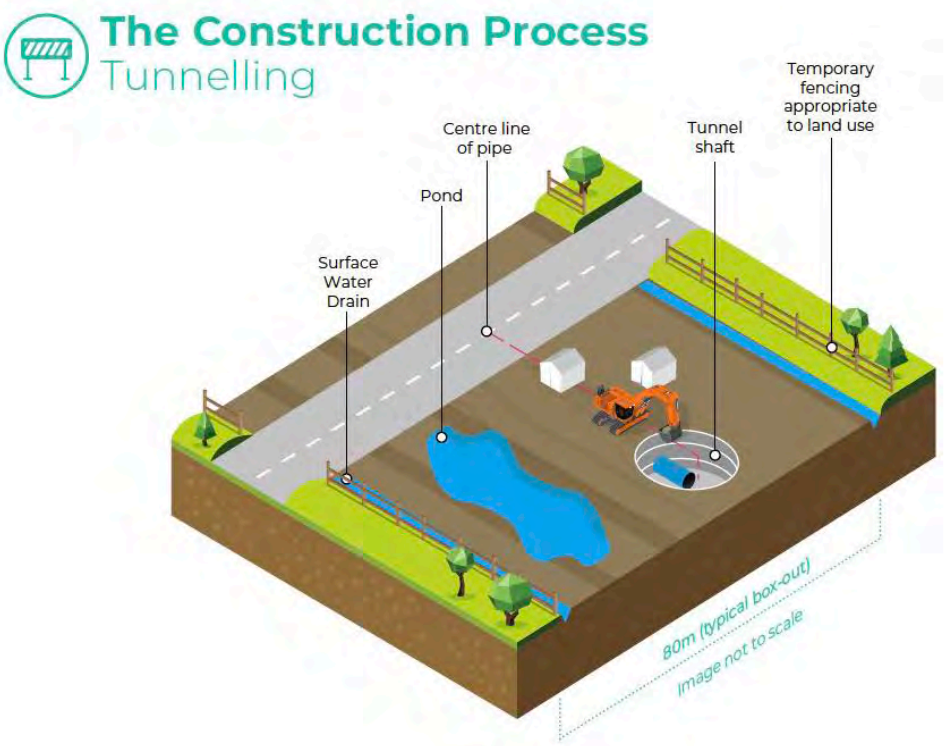
The Construction Process
Pipe installation



In locations where typical "open cut" pipe installation is not practicable then a trenchless installation methodology such as tunnelling may be used.

At each end of tunnel locations, a shaft will be excavated to the required depth and a tunnel boring machine will be used to construct the tunnel between the shafts. Groundwater will be pumped out of the shaft excavations and discharged through a settlement pond to land drainage. The working area will have a larger "box-out" (approximately 80 metres by 80 metres) to accommodate these works. Each trenchless crossing will typically take 6-8 weeks to construct and may be constructed before or after the main pipeline installation works.

Each crossing will need to be assessed on an individual basis to determine the most appropriate method of construction, taking account of ground conditions, environmental and ecological impacts.

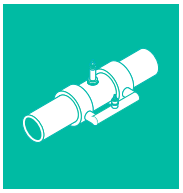


Installation of valves and ancillary infrastructure

Where the design requires ancillary infrastructure such as valves and valve chambers to be installed, the trench will be left open at that location until ancillary infrastructure has been fitted. Timing of these works will be dependent on the detailed construction programme and will be discussed individually with each landowner in advance of works commencing. The excavation will be suitably protected until these works have been completed. The standard completed surface finish for valve chambers will be steel covers set in concrete plinths, which are raised approximately 150mm above the surrounding ground.

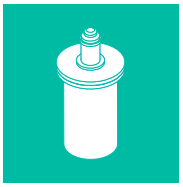
Once backfilled, any above ground infrastructure such as valve chambers and cable termination points will be protected until reinstatement is completed. Some items such as electrical kiosks may not be installed until after reinstatement has been completed.

There will be three kinds of valves used on the WSP pipeline: air valves, washout valves and line valves, which are described in more detail below.



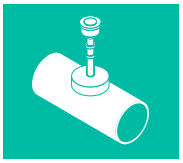
Line valves will allow sections of pipeline to be isolated for maintenance and will be located along the pipeline, typically as buried valves. Electrical power will be required to operate the line valves, in which case surface kiosks will be required. Line valves, wherever possible, will be located close to air or washout valves and will be positioned adjacent to public roads.

Laybys At line valve locations adjacent to roads, Lay-Bys will be constructed to allow safe access for planned maintenance. These will have a cellular type construction that allows grass to grow through and will be completed with suitable fencing and hedging and a gate to access the line valve.



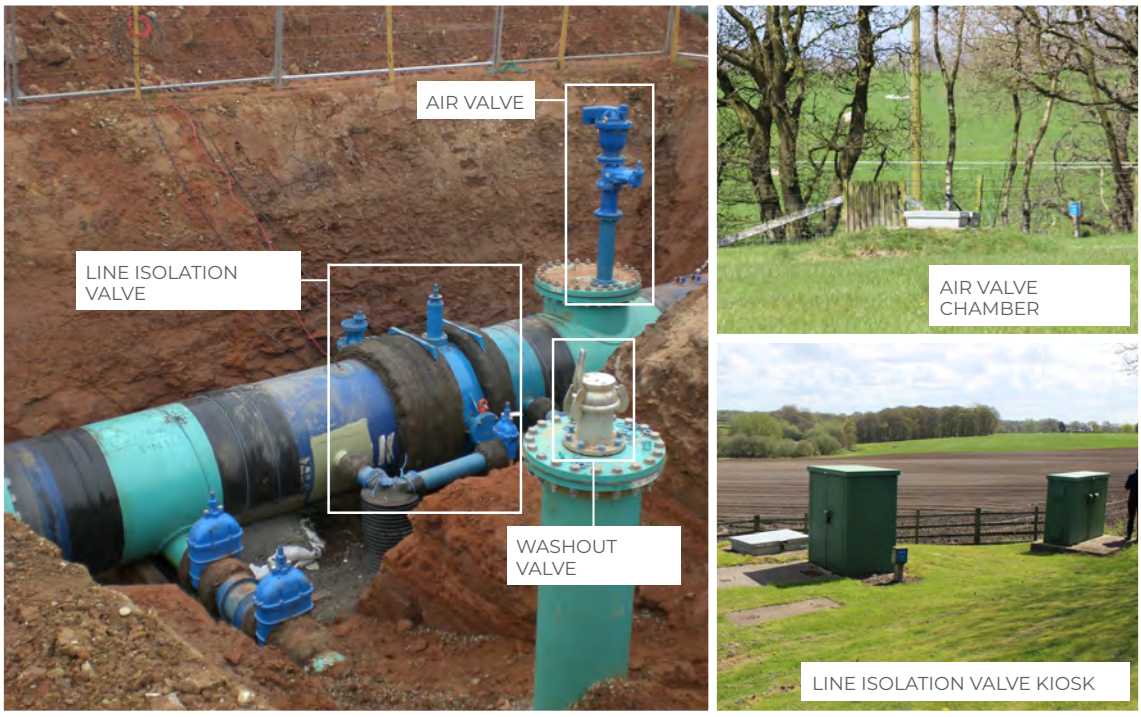
Washout valves allow sections of the pipeline to be emptied and will be located at low points along the pipeline. During commissioning of the pipeline, they are used for removing silt and sediment which may have accumulated during the construction process. It is very rare that these valves are used during pipeline operation.

Outfalls Some washouts will require an outfall, consisting of pipework and a headwall structure, for discharge to watercourses. If part of the outfall is outside the 20-metre permanent wayleave for the pipeline then an additional 10-metre wayleave will be required for installation and maintainence of the outfall.

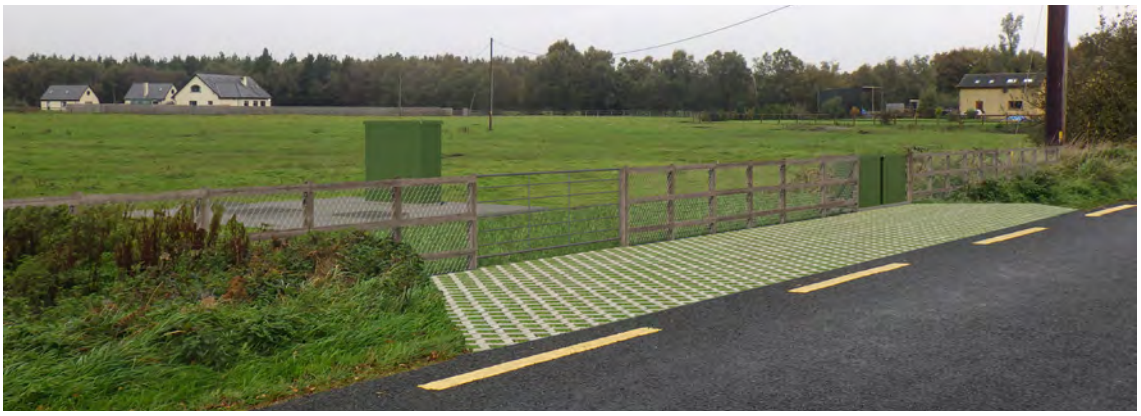


Air valves permit any air in the pipe to be released, and allow air to enter the line to maintain the integrity of the pipeline in the event of a drain down of water. Air valves will be located at intervals of 500m to 800m. Generally, they are placed at high points along the pipeline.

Manways At some locations, manways will be installed on the pipeline. These allow access into the pipeline during commissioning and are unlikely to be used after the pipeline is operational. Manways will be completely buried following commissioning.



EXAMPLES OF VALVE TYPES



LAYBY VISUALISATION

Backfill

The excavated material will be backfilled in layers and compacted to ensure consolidation similar to that of the adjacent subsoil. Large rocks will be removed from the fill material. Field drains will be reinstated across the pipe trench and marked until completion of reinstatement. As a safety measure, warning tape will be positioned within the backfill material. Any excess excavated material that is not used for backfill will be reused elsewhere or disposed of offsite at a suitably licensed facility.

BACKFILLING EXCAVATED MATERIAL

Testing

Soon after a section of pipeline (typically between 2 line valves) has been installed it will be tested to ensure that there are no leaks in the pipeline. Initially a low pressure air test will be carried out. A subsequent hydrostatic test is then conducted by introducing water into the section of pipeline and then increasing the pressure to the required test pressure and monitoring it to ensure that there are no leaks.

Reinstatement - pipeline

Following the completion of pipeline construction, subsoil ripping and grading will occur to scarify the full working area and to start reinstatement of the pre-existing ground contours. Then the stockpiled subsoil that was stored for reinstatement will be spread.

The spreading of subsoil and subsequently topsoil, will be carried out during favourable weather conditions. Soil handling will be avoided during periods of persistent rainfall. Ditch banks, boundary fences, walls and “hedge mounds” will be replaced as far as possible using an excavator.

REINSTATEMENT

The topsoil will then be given a final inspection, and corrected accordingly, to ensure it is neat and level in appearance. The level of the trench area shall be reinstated to ensure it is the same as that of the undisturbed surrounding ground one year after restoration is completed.

Reinstatement - valves and ancillary infrastructure

Valves and ancillary infrastructure will be utilised during filling and commissioning of the pipeline. When commissioning is completed, a final inspection will take place prior to the backfilling and reinstatement of those locations.

PRE AND POST REINSTATEMENT

Commissioning

Upon satisfactory completion of the installation, testing and subsequent internal cleaning of the whole pipeline, it will then be brought into commission whereby clean treated water is introduced and the pressure is gradually increased to full operating pressure. During commissioning, valves will be inspected and operated and there will be some temporary controlled discharges of dechlorinated water through washouts.

Additional Information

Pipeline security

The contractor will be required to secure the temporary working width and all access to it, during both working and downtime periods. Proper registration and identification of all personnel and vehicles, locking of gates, security inspection of the temporary working width, and close liaison with local Gardaí and Community Watch groups will be part of the security requirements, with which contractors will be required to comply.

Biosecurity

All contractors appointed to carry out work on the project will be required to implement the Construction Environmental Management Plan (CEMP) which will include aspects such as providing adequate training to staff in relation to biosecurity on farms, adhering to disease control protocols and complying with any Department of Agriculture, Food and the Marine regulations pertaining to crops and livestock disease.

All contractors will also be required to take necessary measures to reduce the potential spread of invasive species. Mitigation measures for the control of invasive species will also be set out in the Environmental Impact Assessment Report.

Post construction, operations and maintenance

Once reinstatement is complete, there should be little evidence to show that the pipeline has passed through the land apart from any above ground infrastructure such as valve chamber covers, washout chamber covers, kiosks, and so on.

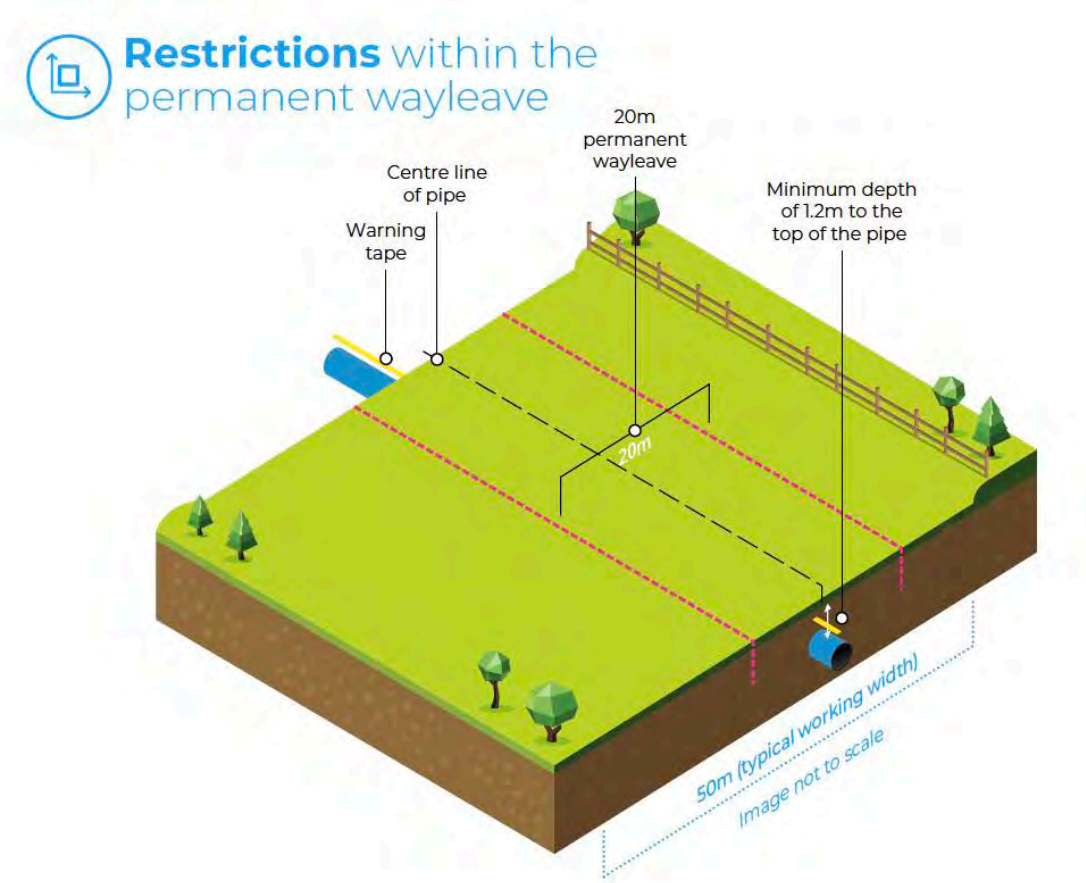
For permanent structures, such as valves, we may require access to the wayleave periodically (once or twice a year) and at any time in the event of an emergency. In the event of access being required, the access route and arrangements can be agreed with the landowner to ensure that disturbance is kept to a minimum.

Walkover inspections and maintenance checks on valves would typically be annually, and for routine inspections the landowner would be notified in advance. A requirement to bring plant or equipment to a valve location would rarely arise.

To minimise the disruption to landowners during and after construction, valves will be located in areas of least interference, such as close to headlands and field boundaries. Kiosks will only be necessary for the line valves, and these will typically be located at road crossings.

Restrictions within the permanent wayleave

Post construction, Uisce Éireann will retain a 20m wide permanent wayleave within which interference with the depth of cover to the pipeline will be restricted.



Activities such as construction and excavations will not be permitted within the wayleave. However, some less invasive activities such as cleaning ditches and erecting fences will be facilitated if certain protective measures are implemented in consultation with Uisce Éireann.

It is not permitted to plant larger species of trees such as poplar and willow due to the potential impact from their roots on the pipeline. The planting of some smaller trees, shrubs or hedges would be permitted, including: Blackthorn, Hawthorn, Privet, Dog Rose, Bramble and Wild Raspberry.

Potential pipeline incidents

Safety is Uisce Éireann's absolute priority. The integrity of the pipeline will be managed through the use of steel as the pipeline material and the specifications for construction, as well as the high degree of quality control and testing that will be undertaken at construction stage. This will ensure that the likelihood of a leak or burst occurring will be extremely remote. The pipeline route has been chosen to allow for a buffer to dwellings, meaning that the impact of such incidents, should they occur, would be minimised.

In the unlikely event that an incident should occur, remotely operated automated line valves will be closed in order to limit the amount of water that can discharge from the affected section of pipe. If required, the section of pipe can then be drained down, water will be de-chlorinated and there will be a controlled discharge to nearby watercourses, at flow rates appropriate to their capacity.

Sensors will be installed to constantly monitor the pressure within the pipe, immediately alerting operations staff of an incident should one occur.

Should a leak occur, it will be assessed by operations staff and a repair will be carried out quickly, ensuring that the impact on landowners is minimised.

Pre-emptive monitoring and inspections will be carried out routinely to allow Uisce Éireeann to identify and address any potential issues before they arise.

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Uisce Éireann
Irish Water