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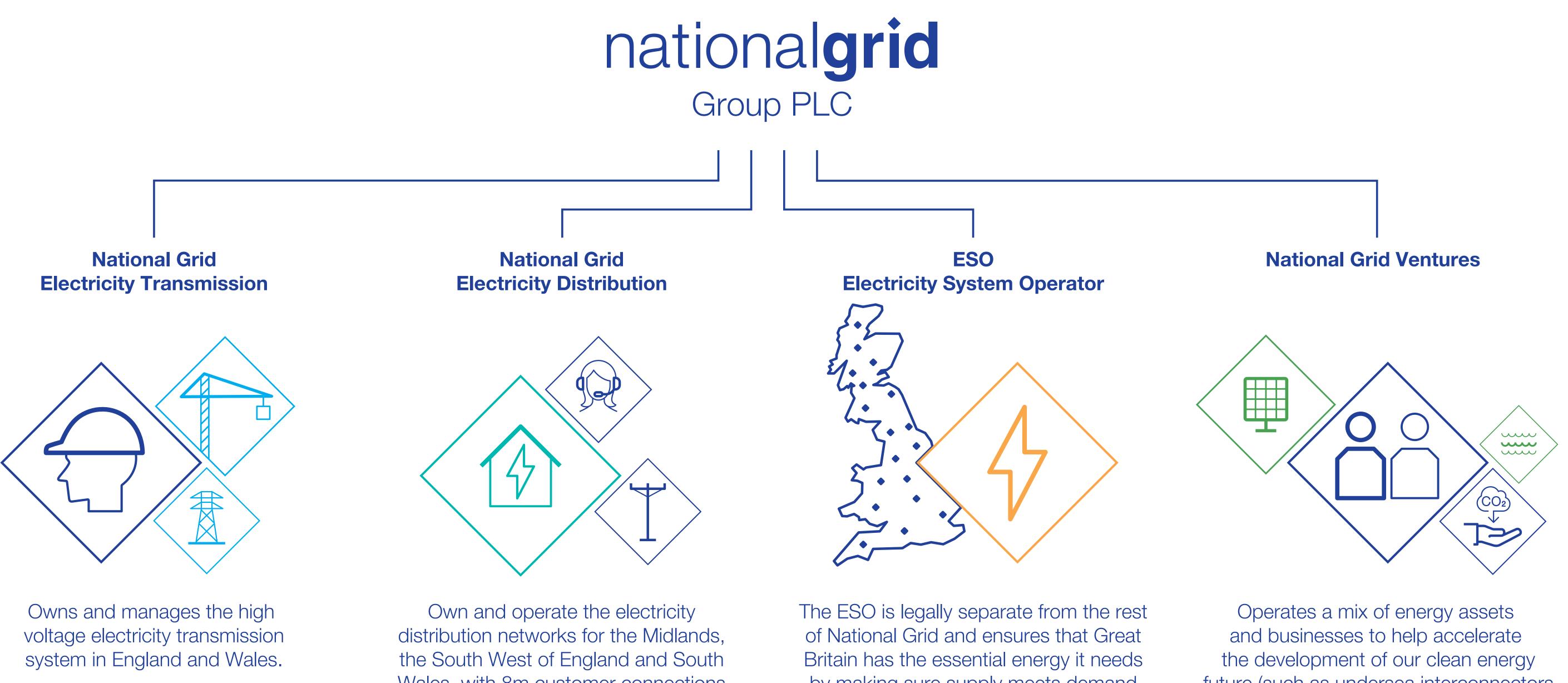
Chesterfield to Willington

National Grid

National Grid delivers electricity safely, reliably, and efficiently to the customers and communities we serve – all while

working towards building a cleaner, fairer energy system for the future.

The parts of National Grid involved to ensure we all have the essential electricity supplies we need are shown in the diagram below. Each is a separate legal entity with its own role and responsibilities across England and Wales.



Wales, with 8m customer connections serving a population of over 18m people. by making sure supply meets demand every second of every day.

future (such as undersea interconnectors that allow the UK to share energy with other European countries).



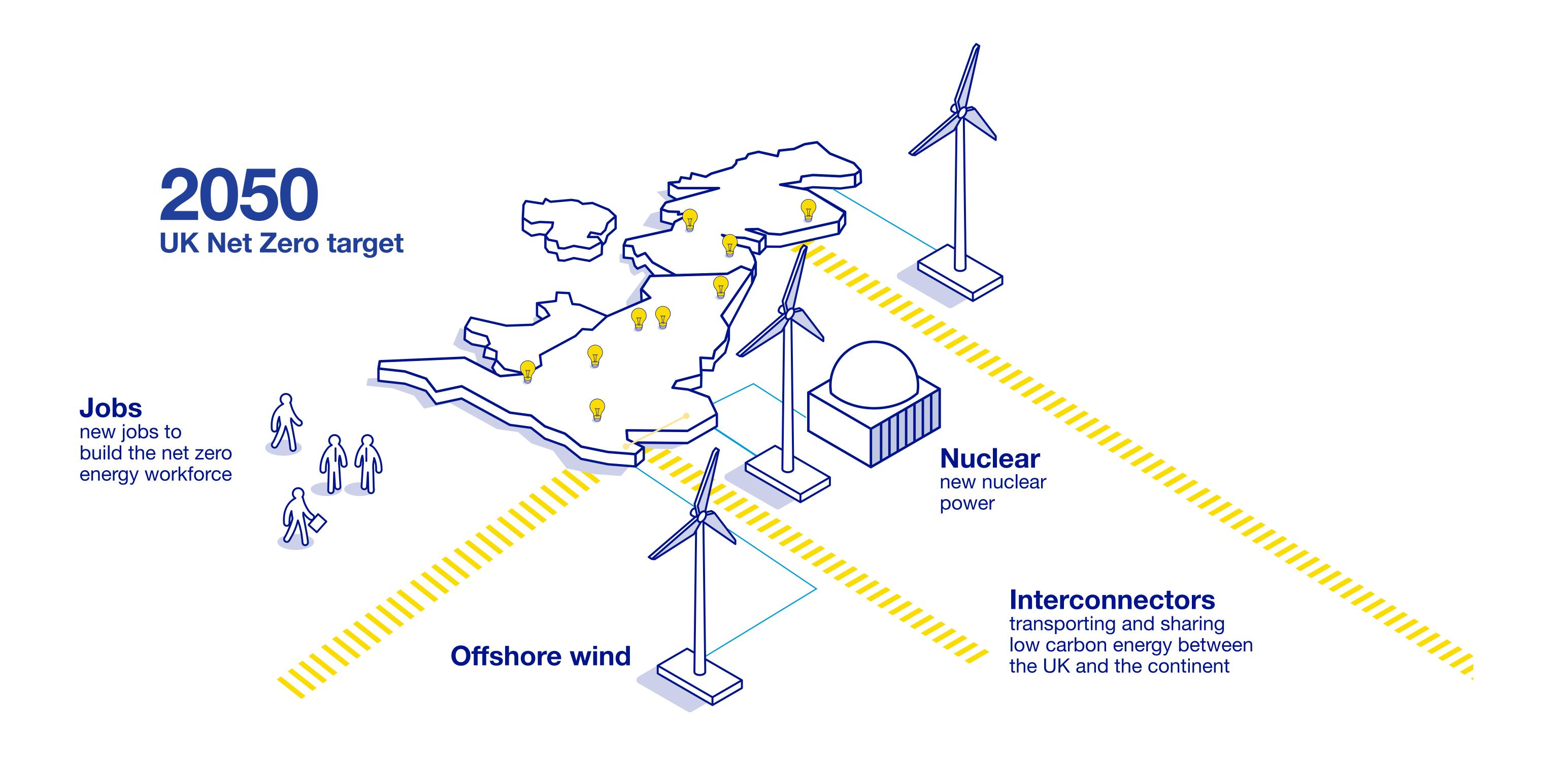
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Noving to net zero

The UK has set a world-leading target for tackling climate change: to achieve net zero carbon emissions by 2050.

The UK Government has committed to reach net zero emissions by 2050. This means achieving a balance between the greenhouse gases put into the atmosphere and those taken out. Decarbonising the energy system is vital to this aim.

At National Grid Electricity Transmission, we're investing around £1.3bn each year to adapt and develop our network - of pylons, overhead lines, cables and substations - to connect new sources of low carbon energy to homes and businesses. We're investing for the future, connecting more and more low carbon electricity to our network and playing a crucial role in turning the UK's ambitions into reality. The UK Government has set targets of 50 GW of offshore wind generation by 2030 and up to 140 GW by 2050. There is increased growth forecast in offshore wind capacity in Scotland and the North East of England, as well as increasing power flows to and from European power grids. The Chesterfield to Willington project will support the UK's net zero target by adding capacity to accommodate increasing power flows of energy generated mostly from offshore wind, in Scotland and North East England, which is expected to double within the next ten years, to areas of demand south to the Midlands and beyond. By reinforcing the network in the centre of the country, the project will facilitate the connection of more renewable and low carbon electricity, to allow clean green energy to be carried around the network.





Chesterfield to Willington

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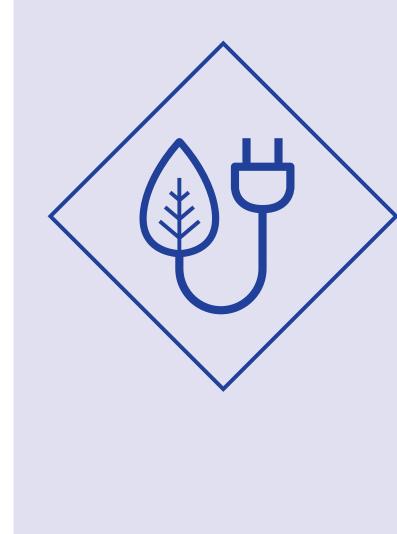
The Great Grid Upgrade

The way we are powering the things we love is changing. In the years ahead, more of our energy will come from renewables as

part of the transition to a cleaner, greener future.

This means we need to build new infrastructure, as well as upgrade the existing electricity grid, to bring this clean, green energy from where it is produced to where it is needed by homes and businesses.

The Great Grid Upgrade is the largest overhaul of the grid in generations.



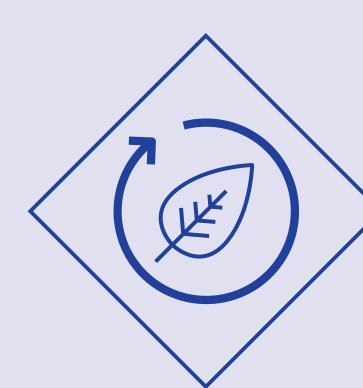
More clean energy for all

The Great Grid Upgrade will enable the electricity grid to carry more clean energy to communities in every part of England and Wales, helping us all reach net zero faster.



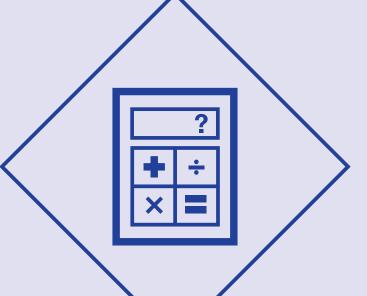
Energy security

The Great Grid Upgrade will connect clean energy that's produced right here in the UK, increasing the self-sufficiency of our energy supplies.



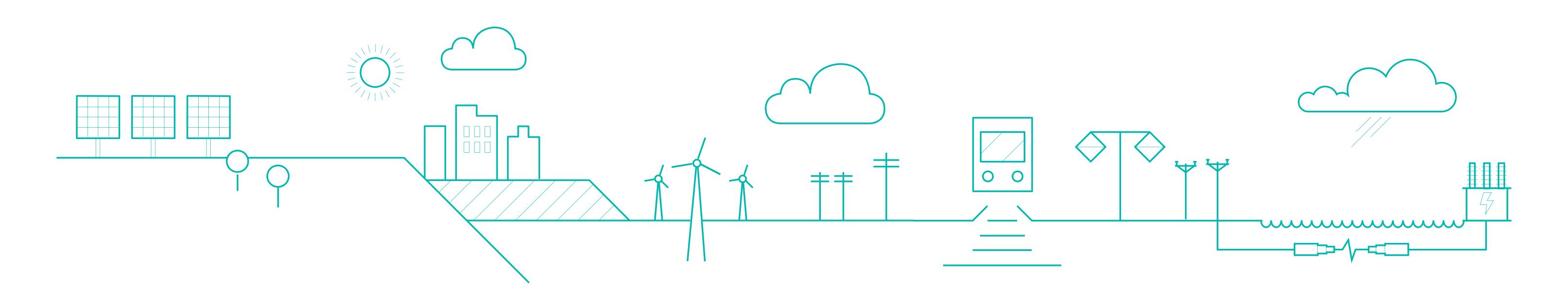
A grid that's fit for the future

As we continue to reduce our reliance on fossil fuels and increase clean energy generation, we'll be using more electricity than ever. That means we'll need a grid that's able to carry all of this extra electricity to wherever we might need it.



Investment in our economy

As well as helping to reach net zero, the UK Government suggests that investment in onshore network infrastructure could support up to 130,000 jobs and contribute an estimated £4–11 billion of GVA (gross value added) to the United Kingdom economy in 2050.





Chesterfield to Willington

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The need for Chesterfield to Willington

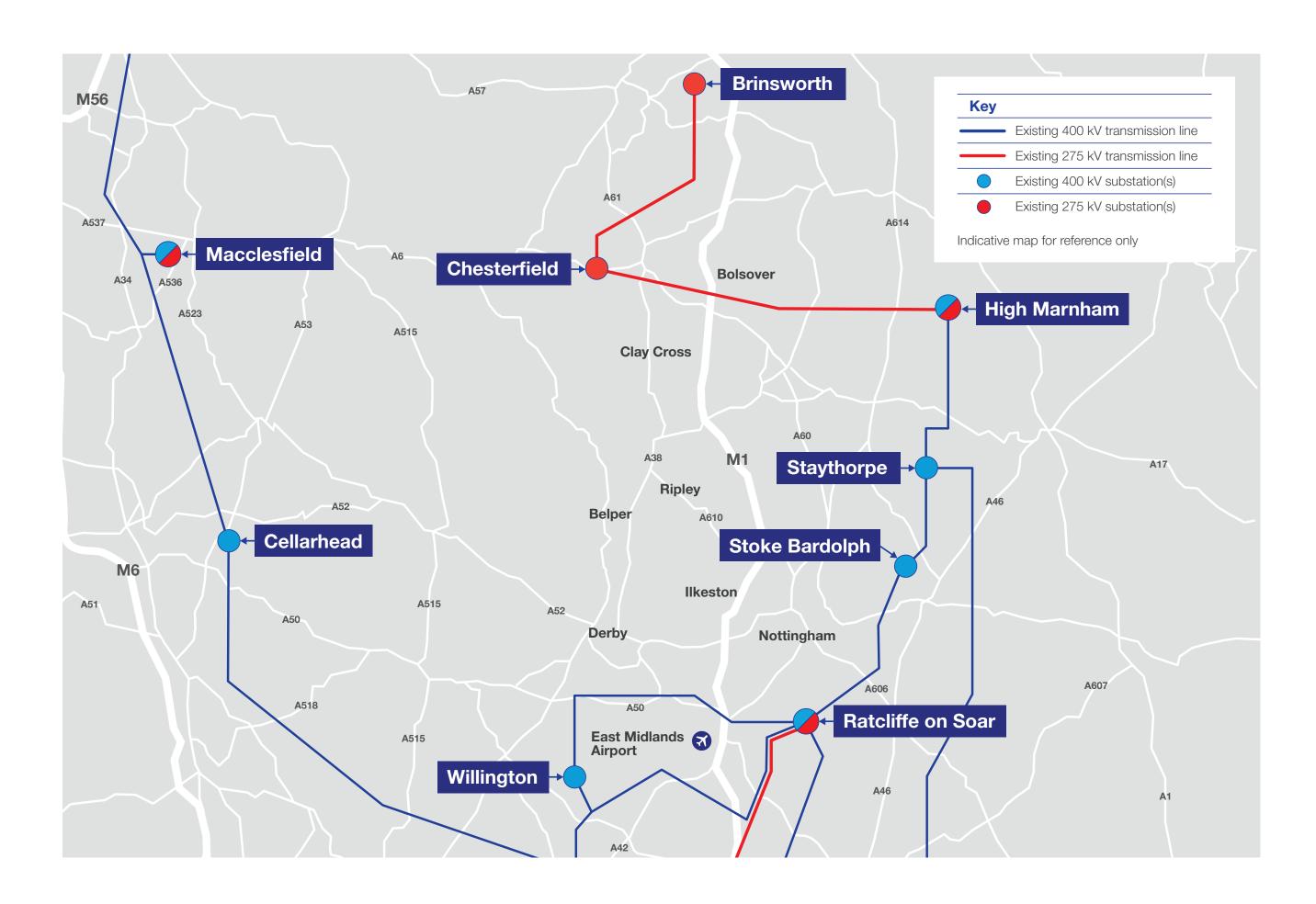
The Chesterfield to Willington project will reinforce the electricity transmission network and help to provide

increased capacity between the North and the Midlands.

Like much of the high voltage electricity transmission network across the country, the transmission network was largely built in the 1960s, with little or no transmission infrastructure constructed in some areas. It was designed to connect the inland coal-fired power stations in the North and Midland areas of England, with changes occurring in the later parts of the century to connect gas-fired power stations in the Humber region.

Demand for electricity is expected to rise as the way we power our homes, businesses and transport changes. As the nation moves towards net zero, the fossil fuels that once powered our economy will be replaced with sources of low-carbon electricity.

Forecast growth in offshore wind to meet the UK Government's targets of connecting 50 GW by 2030, as well as increasing power flows to and from European power grids, will put pressure on the existing network. As such, reinforcement of the network in the Midlands region has been identified as necessary to secure the operation of the transmission system and ensure reliable, economic long-term supply. The Chesterfield to Willington project will support the UK's net zero targets by adding capacity to accommodate increasing power flows of energy. This energy is generated mostly from from offshore wind in Scotland and North East England, to areas of demand south to the Midlands and beyond. By reinforcing the network in the centre of the country, the project will facilitate the connection of more renewable and low carbon electricity, to allow clean green energy to be carried around the network.



Existing transmission system in the East Midlands region



Chesterfield to Willington

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Shaping our proposals

This is our first stage of consultation about our early proposals. Your views will help shape our plans and develop

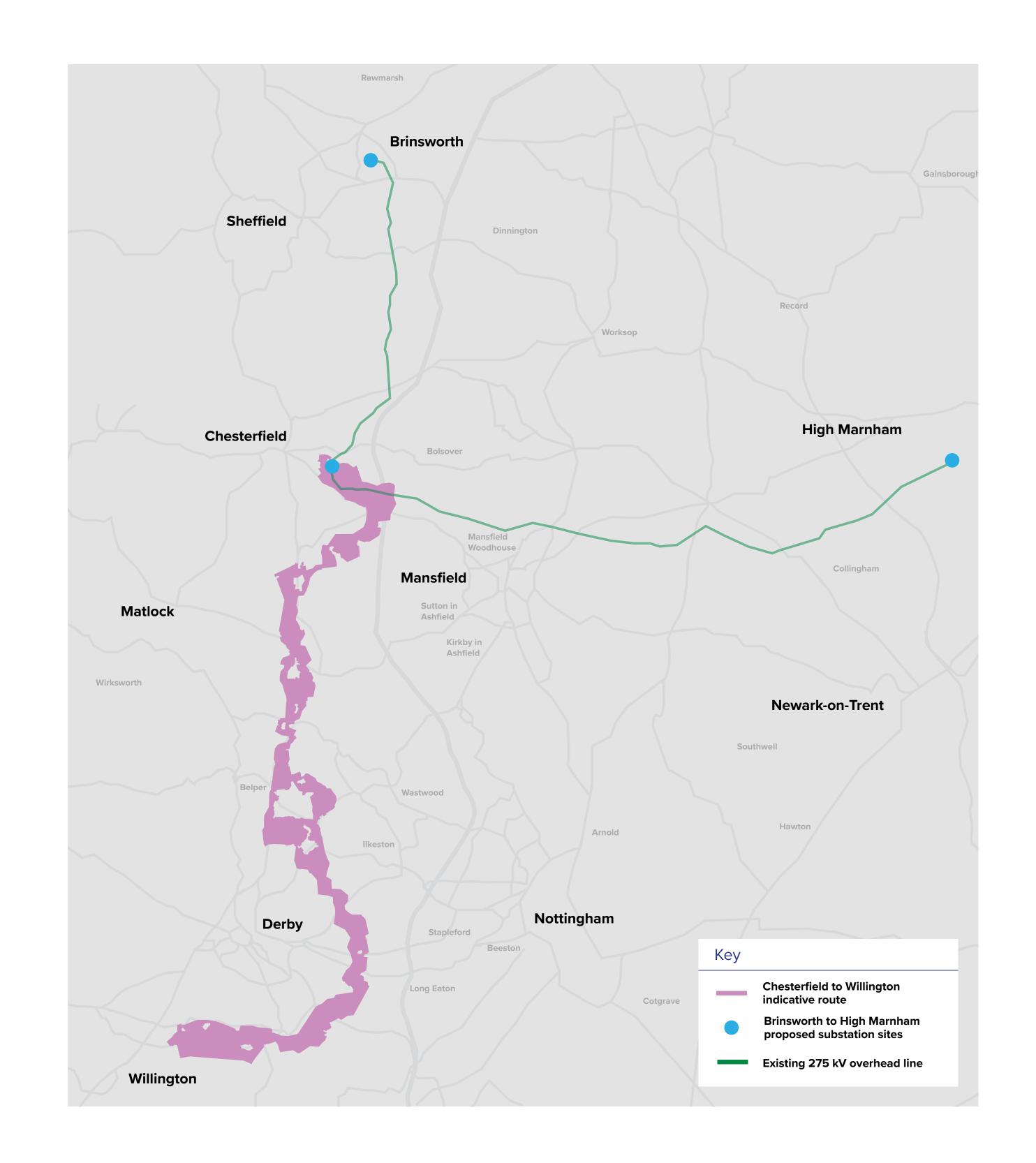
more detailed proposals.

Chesterfield to Willington is classified as a Nationally Significant Infrastructure Project under the Planning Act 2008. It will require a Development Consent Order (DCO) to build and operate the new Chesterfield to Willington line. Consultation is an important part of the DCO process, enabling everyone to provide feedback.

Feedback at each stage of consultation – along with technical assessments and environmental surveys – helps inform the development of our proposals before we submit a DCO application to the Planning Inspectorate in 2026. During this consultation, we are seeking opinions and local knowledge about the proposed area within which the pylons could be routed. We will consider all the feedback we receive which, along with the outputs from the technical assessments and environmental surveys, will shape the development of our proposals.

Coordination with Brinsworth to High Marnham

Brinsworth to High Marnham is a separate project to reinforce the network in this area through new substations and upgrading (known as uprating) some of the existing circuits to 400 kV as part of The Great



Grid Upgrade.

The Chesterfield to Willington project will connect into the proposed substation at Chesterfield.

With two projects simultaneously underway in the same area, we will strive to coordinate activities where possible. We are working closely with the Brinsworth to High Marnham team to identify opportunities to ensure coordination and reduce disruption where possible.

Consultation for the Brinsworth to High Marnham project is taking place from Spring 2024. The Town and Country Planning Application is due to be submitted in early 2025 and, if approved, construction is expected to start in 2026.



Chesterfield to Willington

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Our proposals for Chesterfield to Willington

We are proposing to build approximately 60 km of new 400 kV overhead electricity line between Chesterfield and Willington

to allow us to carry more energy between the North of England and the Midlands.

The proposed overhead line would connect between a new substation at Chesterfield (being developed and consented as part of the Brinsworth to High Marnham proposals) and the existing Willington substation in Derbyshire.

How we identified connecting at Chesterfield and Willington

National Grid only develops new infrastructure where the existing transmission system cannot be further upgraded to meet systems security standards, where increase in demand can't be satisfied by other means or where customer connections are required.

We also consider our duties under the Electricity Act 1989, which require us to develop proposals that are efficient, coordinated and economical, and which have regard to people, the location, and the environment. We evaluated ten potential options that could provide additional transmission capability – our substation connection points. Our Strategic Options Report (SOR) explains in detail how we have considered a range of technical, environmental, community, programme and cost factors to determine the most suitable strategic connection point options to take forward.

How we identified the Emerging Preferred Corridor

The Emerging Preferred Corridor is the proposed area within which the proposed infrastructure could be located between the connection substations.

We have carried out environmental and technical assessments to identify areas that may be sensitive to the introduction of new infrastructure within our initial study area. This also helps us to inform the routeing of the Emerging Preferred Corridor, as presented at this stage of consultation. This was achieved by:

- avoiding settlements of various sizes;
- routeing around parks, Sites of Special Scientific Interest, ancient woodland, nature reserves and heritage sites;
- designing the route to ensure infrastructure is in the lowest areas of flood risk possible in accordance with national planning policy;

- allowing for space to accommodate reasonable lengths of straight alignments;
- following existing infrastructure corridors like the M1 motorway;
- maintaining appropriate distances from community facilities and tourist attractions; and
- allowing flexibility to address future constraints identified through consultation.

Whilst the above factors have guided us to produce proposals that seek to cause the least impact, we do recognise that there will still be an impact on some communities. Throughout the development of this project, we want to work closely with those who live in the closest proximity to gain an understanding of how we could minimise and mitigate further.



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The Great Grid Upgrade

Chesterfield to Willington

What 45 Hac UGEG n our proposals

To build the Chesterfield to Willington project there are several features that make up our proposals.

Overhead electricity lines and pylons

Pylons are structures which carry electrical conductors (the overhead electricity lines), insulators and fittings. These transmission networks form most system circuits in Great Britain and worldwide.

We are proposing to build approximately 60 km overhead line of steel lattice pylons in accordance with National Grid's guidance and national planning policy.



Like most overhead lines owned and maintained by NGET, the project will carry a voltage of 400 kV. These are typically around 50 metres in height, with approximately three pylons per kilometre on a straight section of corridor, potentially slightly more in places. In some locations, specific constraints such as navigable river crossings, can require considerably taller pylons to ensure safe electrical clearance from the overhead lines to the activities below them.

Connection substations

Substations are an essential component in the energy network that connect sources of generation, such as wind farms and power stations. They connect overhead and underground circuits and nearby utility systems and are critical in maintaining an efficient energy network.



The separate Brinsworth to High Marnham project includes a proposal to build and operate a new 400 kV substation in

Chesterfield. This new substation would be the northern connection point for Chesterfield to Willington. The substation does not form part of this project, however it will be considered during the ongoing design studies and when assessing cumulative effects. The existing 400 kV Willington substation forms the project's southern connection point.

Modifications to existing overhead lines

Modifications to the wider transmission system and local electricity distribution networks operated by NGET and National Grid Electricity Distribution Plc (NGED) would be required to facilitate construction of the new transmission connection where it crosses existing lower voltage overhead lines.

At these locations it may be more cost-effective and have reduced environmental impacts to permanently divert or replace a length of the lower voltage overhead lines with underground cables.

As the project design evolves, we will develop and assess mitigation measures on a case-by-case basis.

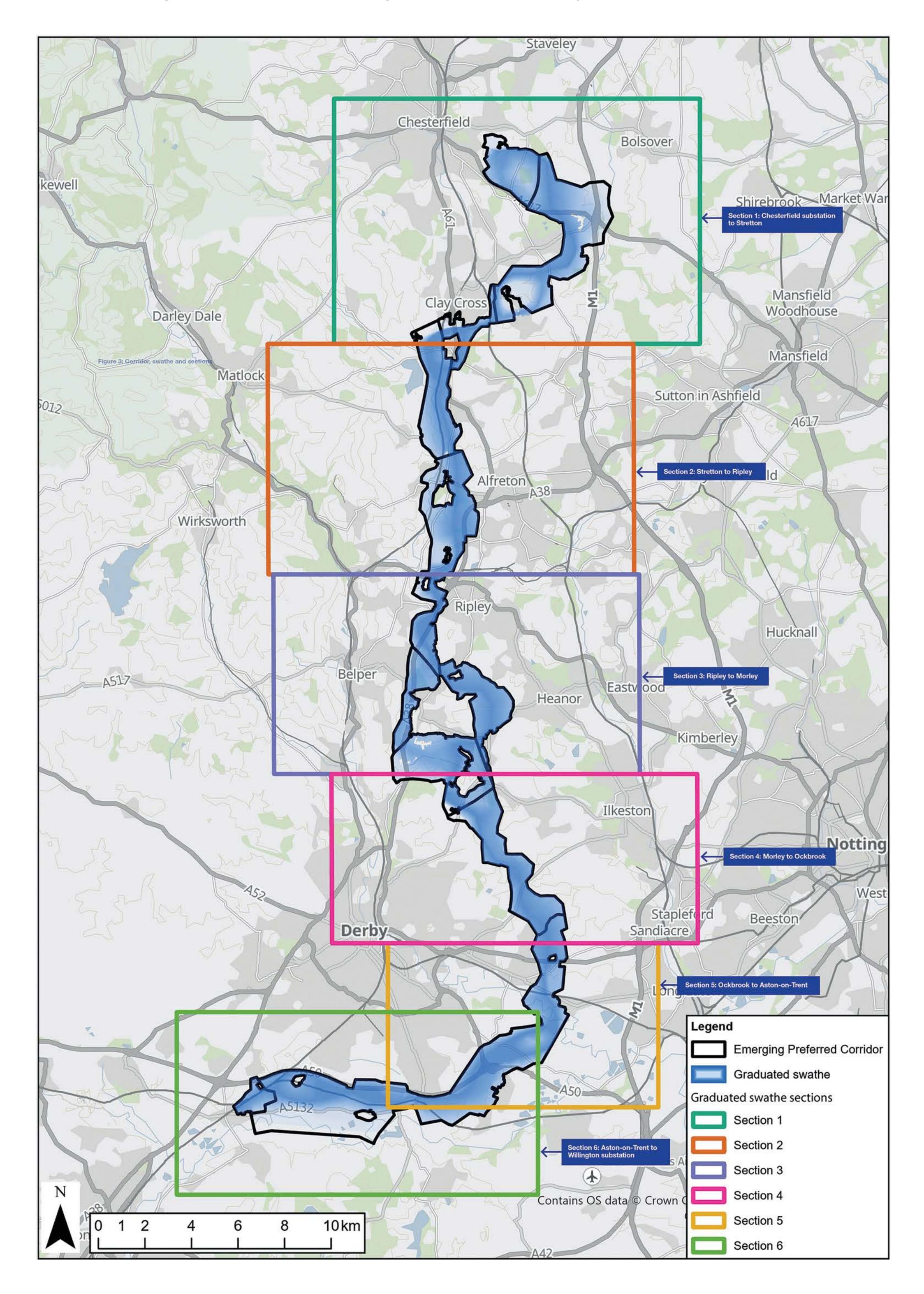


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The Emerging Preferrec Corricor and graduated swathe

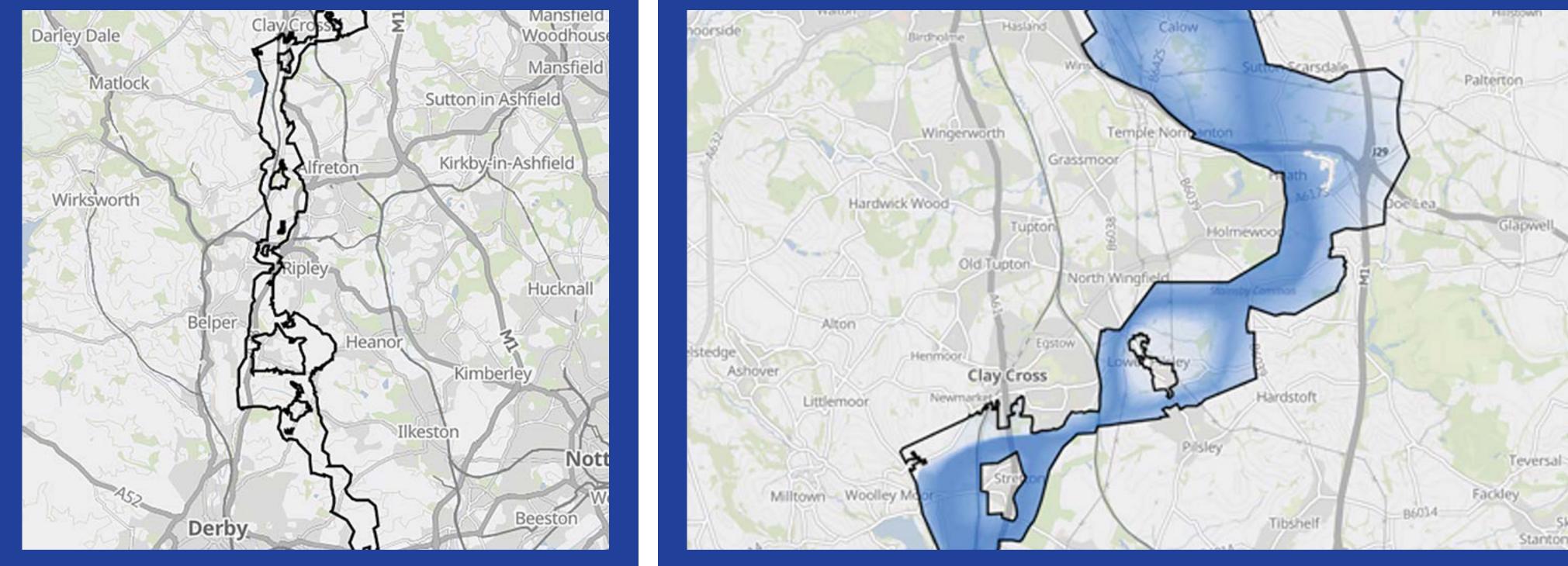
Our 'Emerging Preferred Corridor' is the area of land in which the overhead line could be built.

We are seeking views and local knowledge about the Emerging Preferred Corridor and location within it where we could route the new line during this consultation. We have split it into six sections so you can more easily comment on specific areas within it.



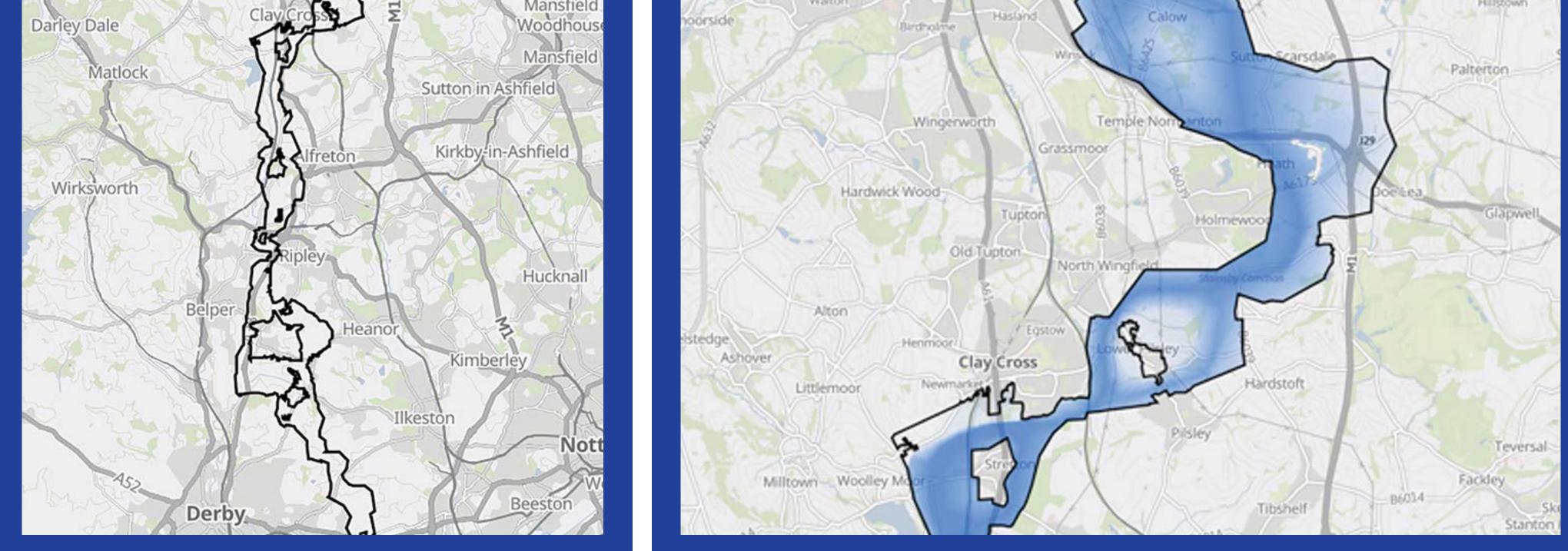
Emerging Preferred Corridor

This is indicated by the black line boundary and outlines the proposed area within which the transmission system (overhead electricity line and pylons) could be routed. This is referenced as the 'Emerging Preferred Corridor' or 'corridor'.



Graduated swathe

The shaded areas within the Emerging Preferred Corridor show where the transmission system (overhead electricity line and pylons) could be situated when taking into account environmental factors and constraints. Darker shaded areas signify where infrastructure placement could potentially be more appropriate within the corridor. The shaded area is referenced as the 'graduated swathe' or 'swathe'.





Chesterfield to Willington

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Section 1 - our proposals from Chesterfield substation to Stretton

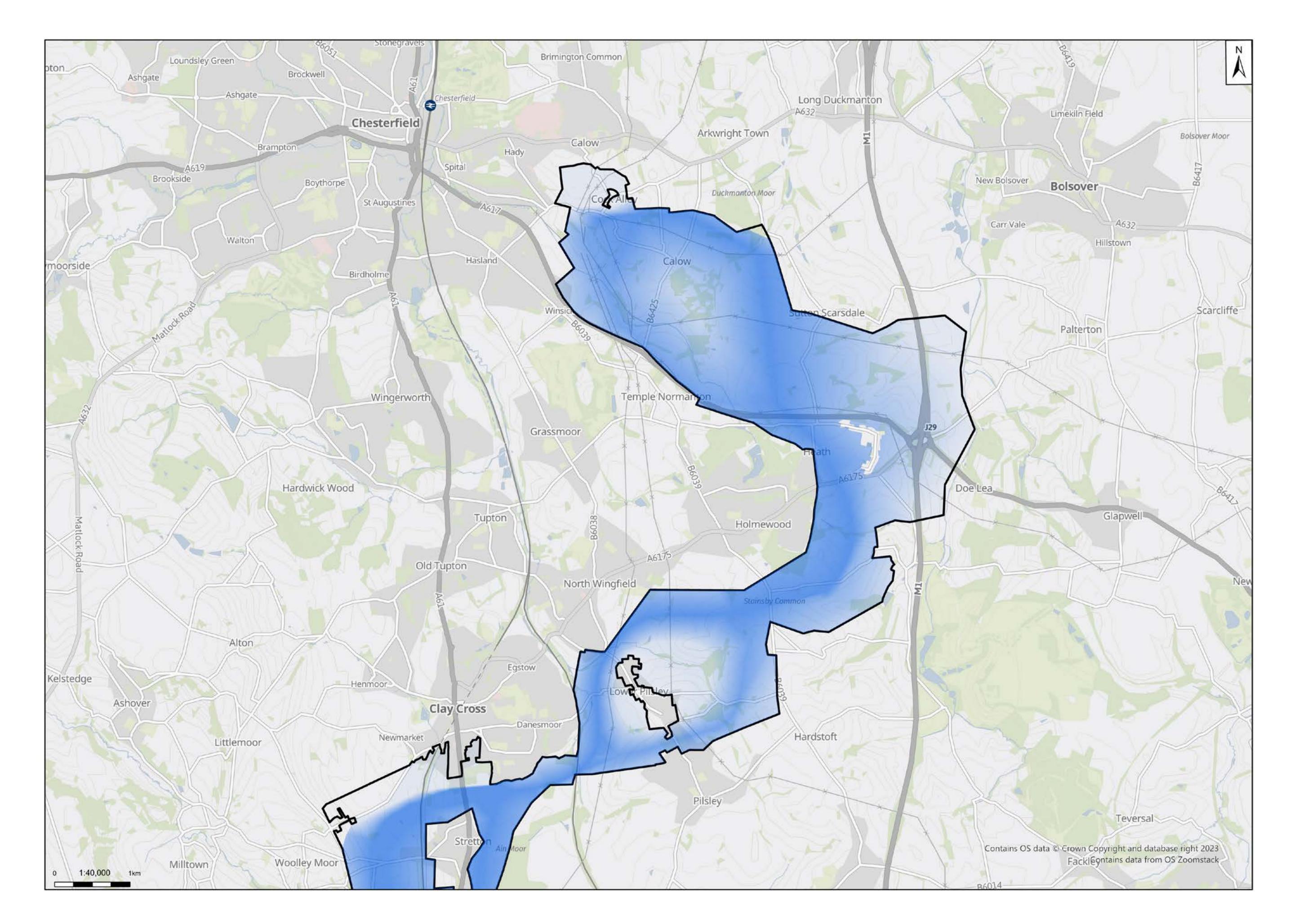
This section of the Emerging Preferred Corridor runs from the proposed new Chesterfield substation (where the new

overhead line would connect into) to a point north of Stretton.

Exiting from Chesterfield substation, the graduated swathe shows two potential paths which broadly follow the existing 132 kV overhead lines - north of Calow towards Sutton Scarsdale before turning south, or south of Calow towards the A617, before heading in a south-easterly direction.

A potential corridor for a new overhead line in the area is offered by the M1 motorway, although this would require a longer line. A preference is also shown between Holmewood and Heath, which offers the shortest and straightest path. This aims to avoid the Heath Conservation Area and pockets of ancient woodland. South of Holmewood, the preferred path travels towards the western edge of the corridor to create distance from Stainsby and its historic features. Further west, potential paths exist north or south of Lower Pilsley, with preference given to the north due to community amenities and ancient woodland to the south. Reconfiguration or undergrounding of existing 132 kV overhead lines is required in this area to establish the new line.

The corridor then moves around the southern edge of Clay Cross toward Stretton, passing through a relatively narrow gap to avoid features such as existing properties and solar farms.



Section 1 of the Emerging Preferred Corridor



Chesterfield to Willington

Section 2 - our proposals from Stretton to Ripley

This section of the Emerging Preferred Corridor broadly runs from Stretton in a southerly direction towards Ripley,

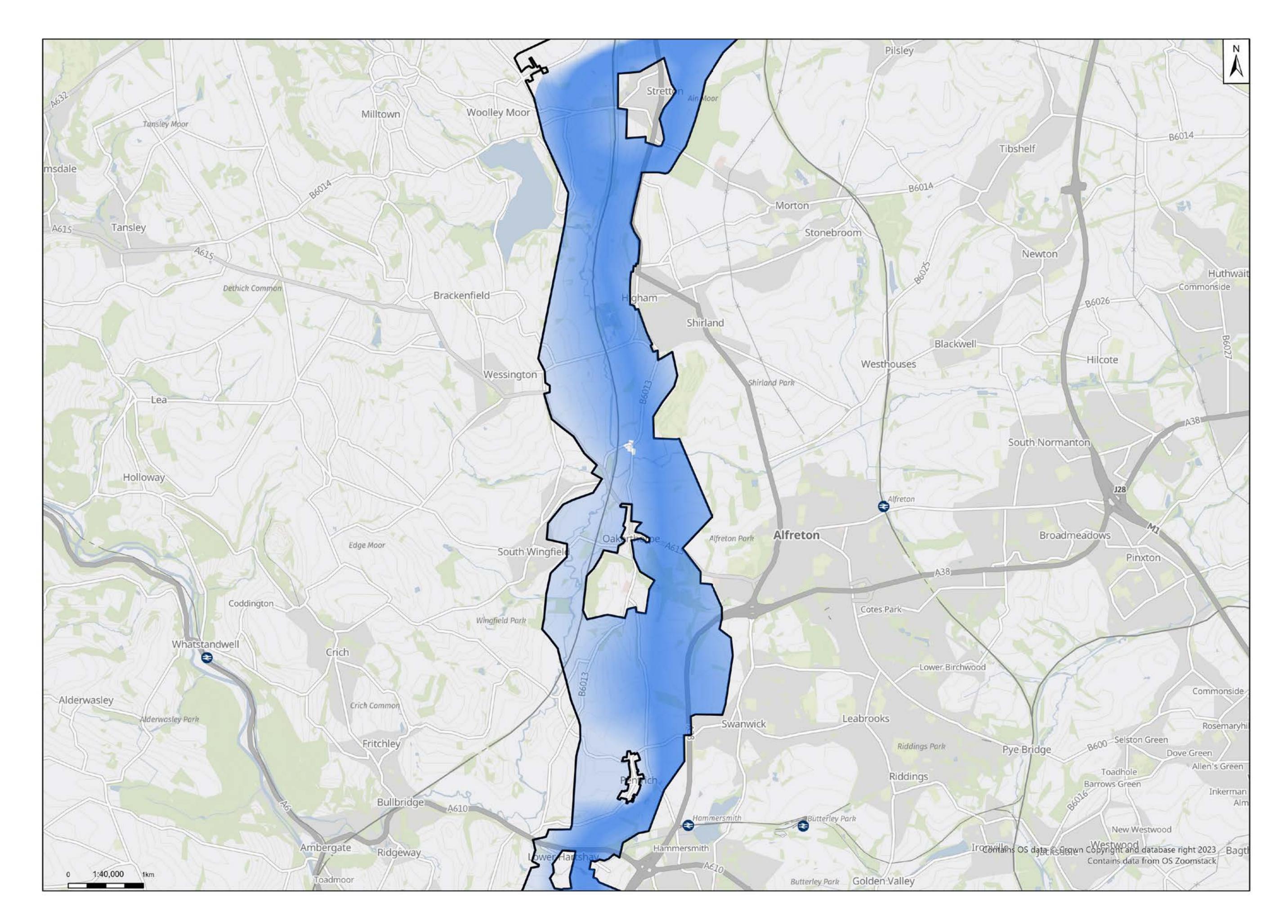
following the River Amber valley.

The graduated swathe indicates a potential path east of Stretton. It offers a more direct route without the need to cross the River Amber and railway line as the corridor heads south toward Oakerthorpe. Alternatively, to the west of Stretton, crossing the River Amber could be avoided, but crossing the railway line would be necessary, potentially requiring two crossings.

As the corridor progresses south toward Oakerthorpe, a preference is shown for a path to the east of the corridor, which aligns with the existing railway line. This benefits from existing trees and field boundary vegetation patterns, providing natural mitigation against potential visual impacts. The corridor offers potential paths on both sides of Oakerthorpe. To the west, numerous features such as Flood Zones 2 and 3 along the River Amber, the South Wingfield Conservation Area and the Castle Hill monument are present, likely requiring crossings. Therefore, a preference is given for the eastern arm, which would require crossing Alfreton Golf Club with the potential to bypass Oakerthorpe Local Nature Reserve through appropriate routeing.

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Around Pentrich and Lower Hartshay, options are shown to the east and west of both settlements. A preference is indicated for the eastern route by the darker swathe, which offers the most direct path.



Section 2 of the Emerging Preferred Corridor



Chesterfield to Willington

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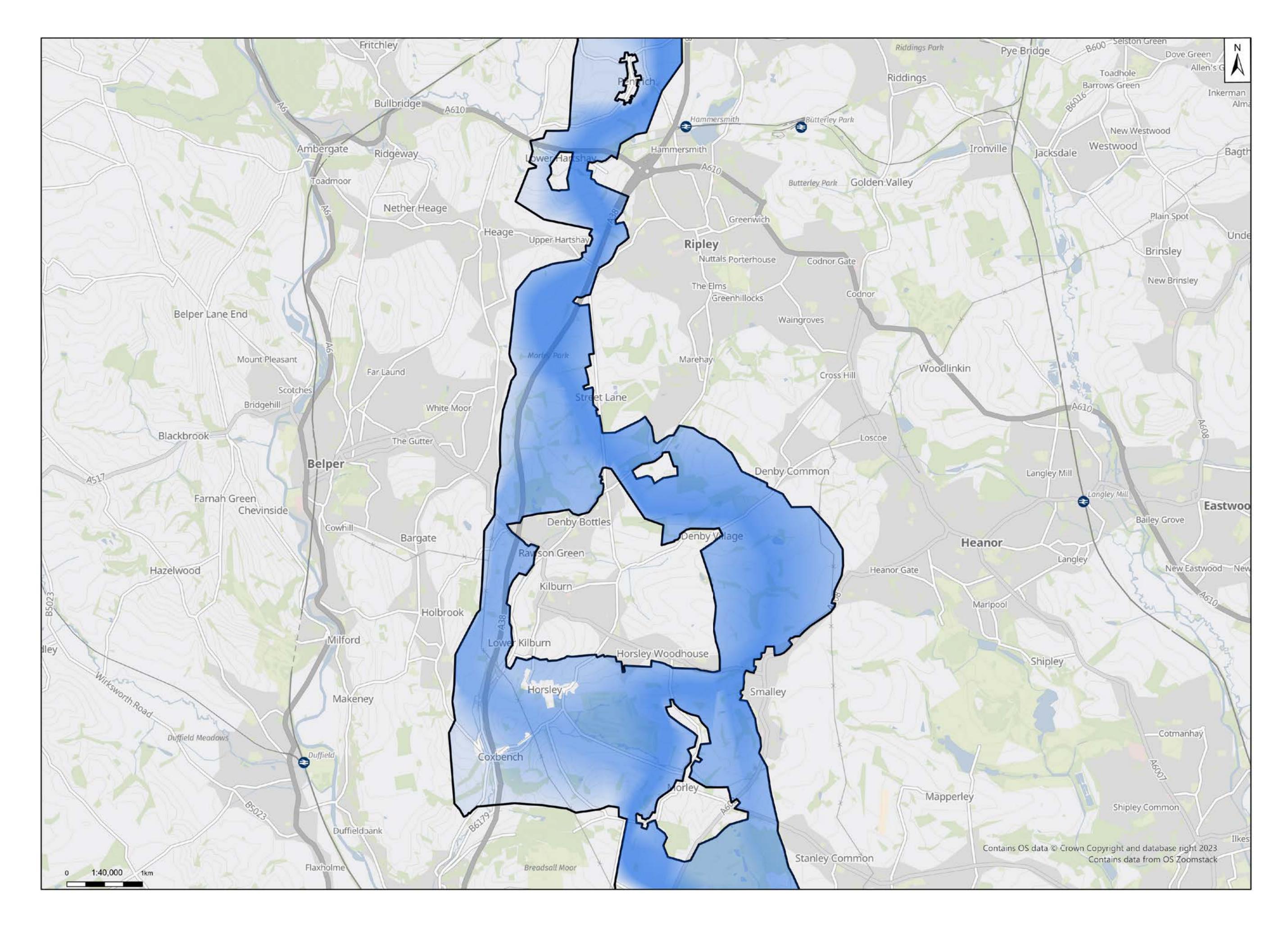
Section 3 - our proposals from Ripley to Morley

This section of the Emerging Preferred Corridor broadly runs from Ripley in a southerly direction towards Morley.

Immediately adjacent to Ripley, the corridor is narrow to pass between Ripley and Upper Hartshay, but it offers the possibility to follow the A38. Further along, the corridor widens and splits as it skirts east or west around a group of settlements including Denby Bottles, Denby Village, Rawson Green, Kilburn, Lower Kilburn, and Horsley Woodhouse.

On the western side, the A38 remains a potential linear corridor for the overhead line to follow. However, existing features such as Flood Zones 2 and 3, Horsley and Coxbench Conservation Areas and Horsley Castle favour a preference for the eastern arm. An emerging pathway is depicted through a gap between Denby Bottles and Denby Pottery Factory. This avoids higher levels of known ground risks such as mine entries and compressible ground further east.

Where the corridor reconnects, a preference is indicated for a pathway west of Morley, which, through appropriate routing, could bypass Horsley Lodge Golf Course and Morley Brick Pits Sites of Special Scientific Interest (SSSI) to the south. East of Morley, the relatively lighter shaded area of the graduated swathe reflects the presence of ancient woodland and Morley Hayes Golf Club across a significant portion of the corridor in this location.



Section 3 of the Emerging Preferred Corridor



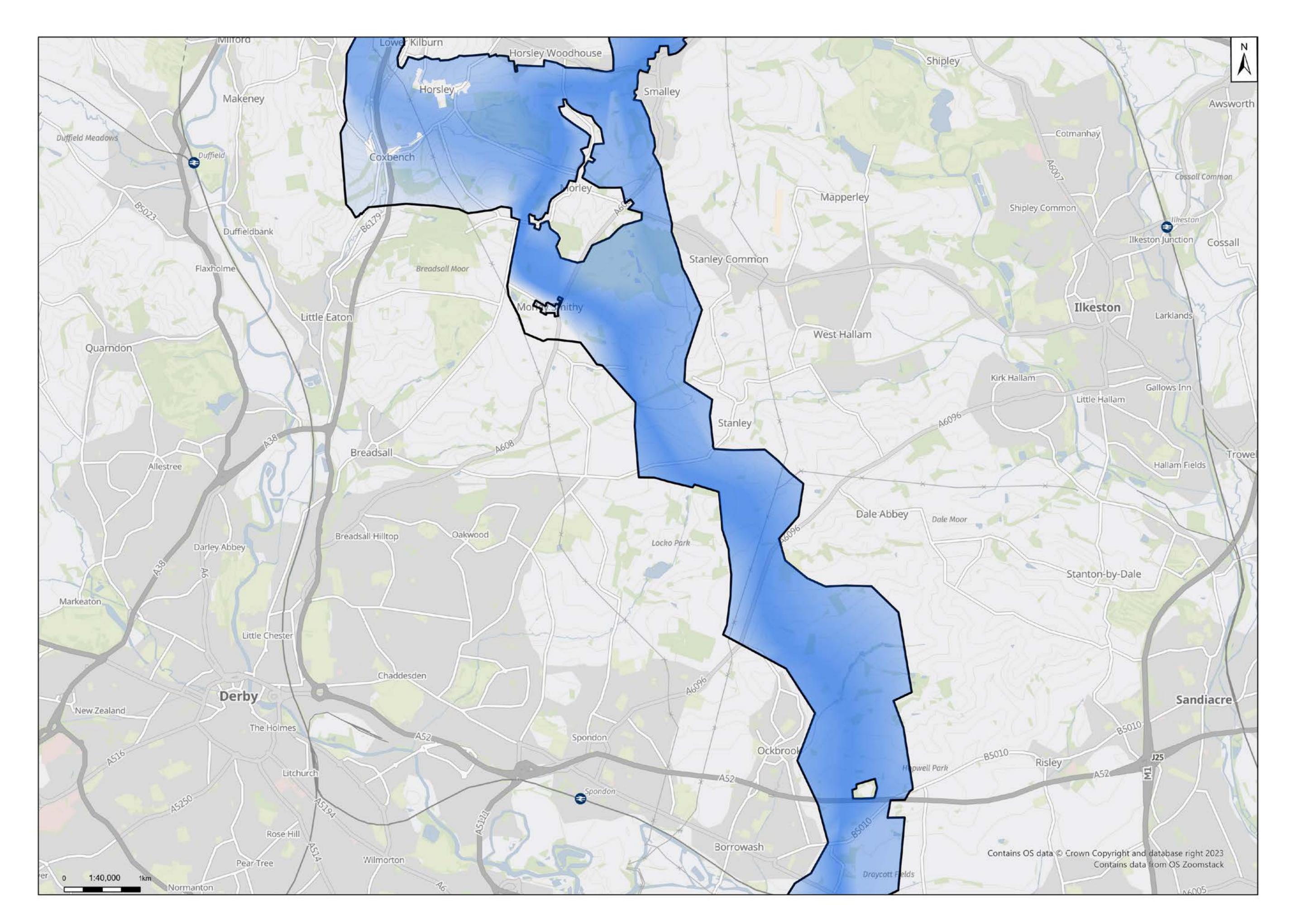
Chesterfield to Willington

Section 4 – our proposals from Morley to Ockbrook

This section of the Emerging Preferred Corridor broadly runs from Morley in a southerly direction towards Ockbrook

around the eastern edge of Derby.

The corridor encounters a relatively unconstrained area, with a preference for a more direct path that aims to avoid local features. The narrowest part of the corridor lies between Locko Park Registered Park and Garden to the west and Dale Hill Natural Burial Ground to the east. An existing 132 kV overhead line crosses the entire width of the corridor, necessitating modifications. Preference is given to the western edge of the corridor toward Ockbrook to maintain a direct path, while also avoiding ancient woodland and maintaining sufficient distance from the village.



Section 4 of the Emerging Preferred Corridor



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Section 5 – our proposals from Ockbrook to Aston-on-Trent

This section of the Emerging Preferred Corridor broadly runs from Ockbrook in a southerly and then south-westerly

direction towards Aston-on-Trent.

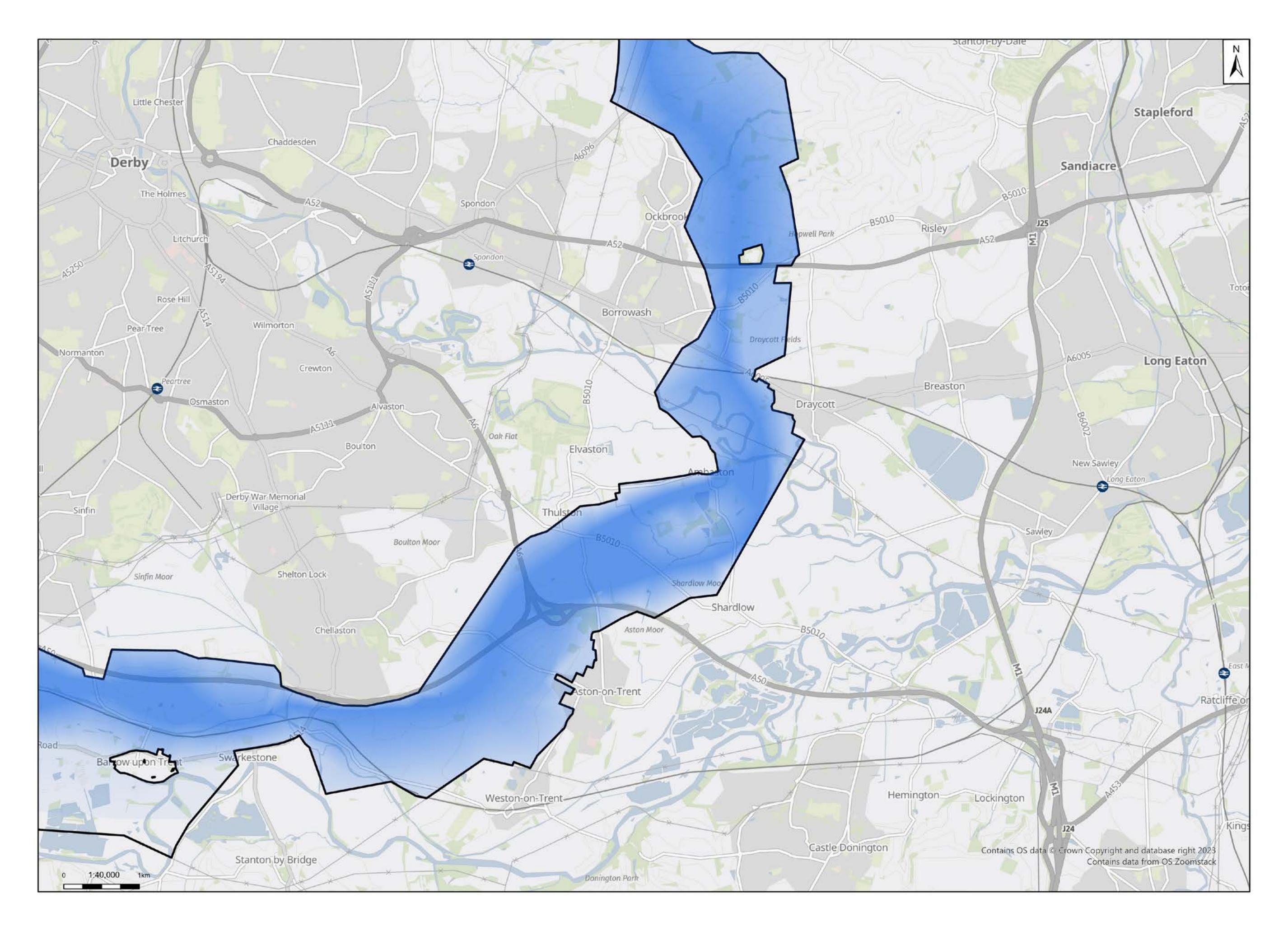
East of Derby, the graduated swathe suggests a continued preference along the western edge of the corridor to preserve a more direct path to ensure sufficient distance from communities at Ockbrook and Manor Farm.

Moving south past Draycott, the River Derwent and associated Flood Zones 2 and 3 are unavoidable in this section. Preference is given to the east, where it may be feasible to avoid potential multiple crossings of the river while also maintaining a distance from Draycott.

South of Ambaston, the lighter shaded swathe indicates the presence of a tarmac

quarry and mortar plant, with potential paths to the north or south shown by darker shading. Further assessment is necessary to determine the optimal path within the corridor to cross the A50/A6 road network junction north of Aston-on-Trent. The graduated swathe suggests a relatively broad area for consideration, while aiming to avoid landmarks such as Elvaston Castle Country Park.

Outside the northern edge of the corridor are features such as the Trent Valley Crematorium. Inside, features like the Aston Brickyard Plantation Local Nature Reserve and edges of Aston-on-Trent are depicted within the lighter shaded area.



Section 5 of the Emerging Preferred Corridor



Chesterfield to Willington

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Section 6 – our proposals from Aston-on-Trent to Willington substation

This section of the Emerging Preferred Corridor broadly runs from Aston-on-Trent in a westerly direction towards its

connection point at Willington substation.

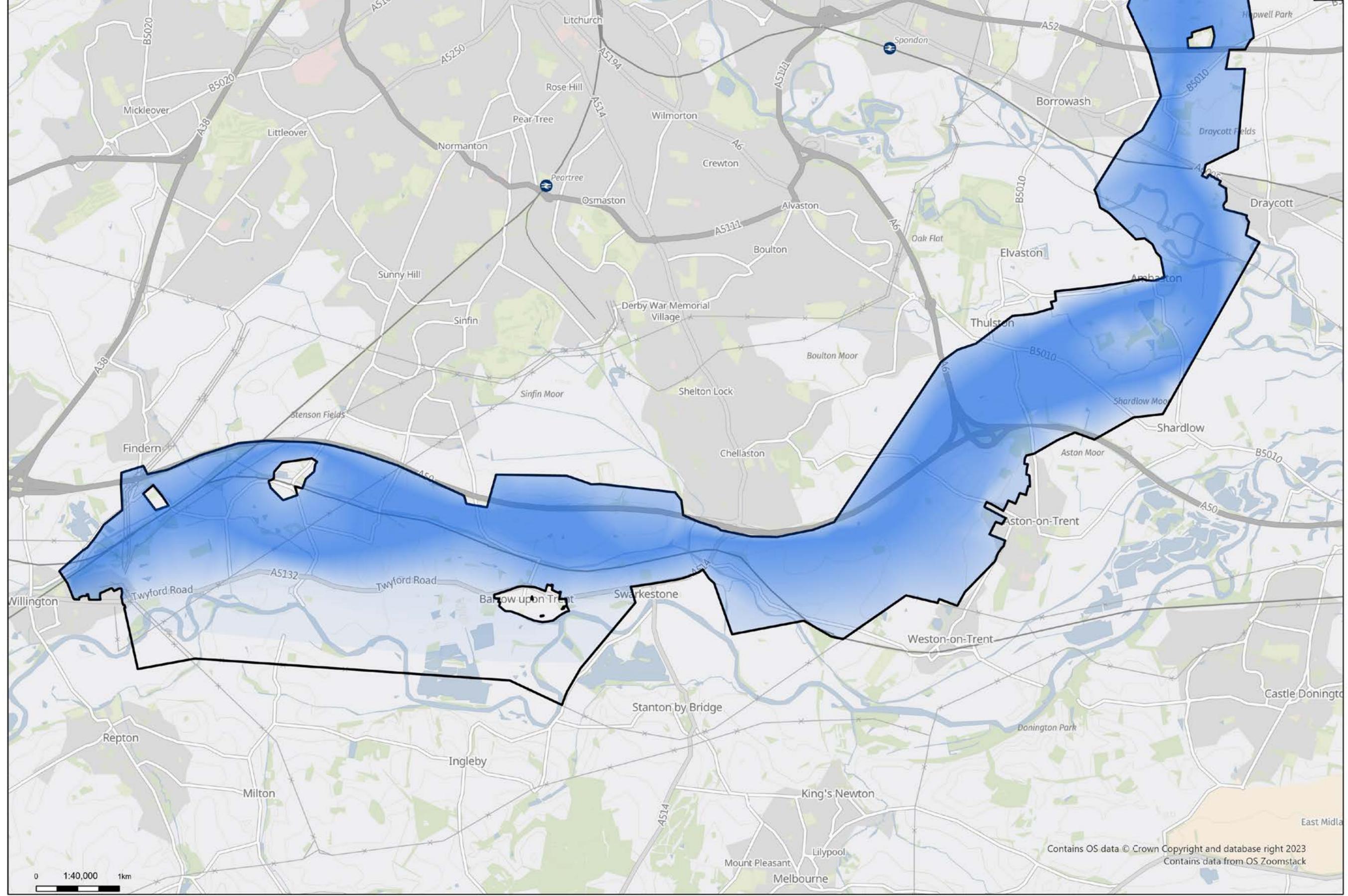
Travelling from Aston-on-Trent toward Swarkestone, a preference is indicated along the northern edge of the corridor which offers a more direct route between Chellaston and Swarkestone. This aims to avoid the Trent and Mersey Canal, associated Conservation Area, and the railway line.

As the corridor extends westward to Willington substation, the preference for the northern side of the corridor is maintained. Lighter areas of the swathe highlight features that could potentially be avoided, such as Stenson and scheduled monuments like the Swarkestone Lows round barrow cemetery, aggregated field system and a settlement site and enclosure adjacent to Frizams Lane/ Twyford Road.

Minimising crossings over the Trent and Mersey Canal, its associated Conservation Area and railway line is crucial. The swathe suggests a broad area where an appropriate crossing may be identified. Preference for the north of the corridor aims to avoid features south of the A5132. This includes the River Trent and associated Flood Zones 2 and 3, the settlement of Barrow-upon-Trent and its associated Conservation Area, the Twyford Conservation Area and a scheduled monument (Twyford henge and Round Hill bowl barrow), which may require multiple crossings.

Around Barrow-upon-Trent, constraints such as historic landfill and a sand and gravel quarry affect potential paths. Numerous existing overhead lines near Willington substation also pose challenges. Entry from the south is hindered by two existing 400 kV overhead lines, which would require significant work. Entry from the north faces constraints from the former power station site, railway line and five 132 kV overhead lines. If existing lines aren't undergrounded, the new overhead line would likely need to enter the substation via underground cables to circumvent these constraints.





Section 6 of the Emerging Preferred Corridor



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Nanaging and mitigating effects

Chesterfield to Willington is classed as a Nationally Significant Infrastructure Project (NSIP). Environmental considerations

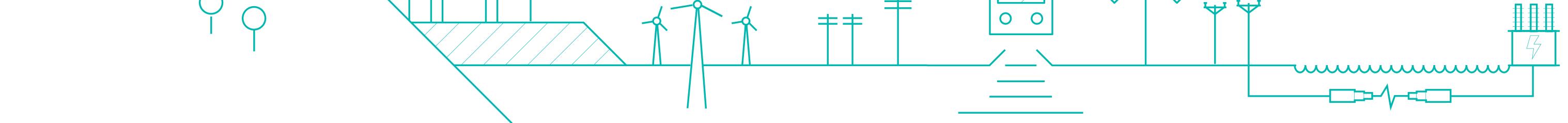
and minimising impact is key as we develop our proposals in line with Development Consent Order (DCO) regulations.

The preparation of an Environmental Impact Assessment (EIA) is an essential part of the development process which evaluates potential environmental effects and proposes strategies to mitigate adverse impacts.

The EIA includes detailed analyses of aspects such as air quality, noise pollution, habitat disruption and visual impacts. Based on EIA findings, we will develop mitigation measures such as habitat restoration, noise barriers and pollution controls to avoid, minimise, or compensate for adverse environmental impacts. Our commitment also extends to the environment where we carefully consider factors such as Biodiversity Net Gain (BNG), with a minimum 10 per cent requirement mandated by the Environment Act of 2021 for new developments. We will conduct a BNG assessment as part of the DCO process, outlining biodiversity proposals to achieve the minimum requirement.

Integrating these considerations into the project aims to achieve a balanced approach that aligns development with community wellbeing and environmental preservation.







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Fave your say

The Chesterfield to Willington Stage 1 consultation runs from 14 May to 17 September 2024.

Provide feedback

Please submit your feedback by 11:59pm on 17 September 2024.

Your feedback will play an important role in helping us to develop and refine our proposals.

How to respond

Learn more about our proposals



Complete a feedback form You can complete the form online at <u>nationalgrid.com/</u> <u>chesterfieldtowillington</u>. Alternatively, paper copies are available to pick up from the local information points and at our events, or we'll deliver to you by post on request (please call or email us). You can also download and print a copy from our

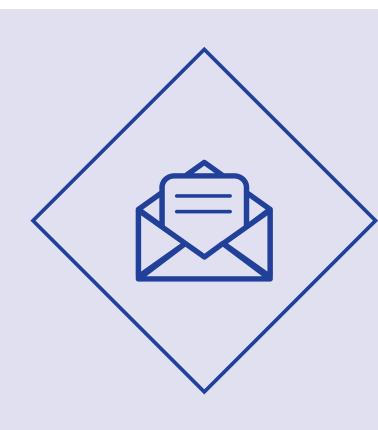


Viewing all the information and the interactive map on our project website <u>nationalgrid.com/</u> <u>chesterfieldtowillington</u>.



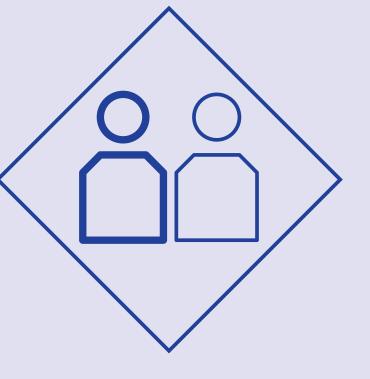
Reading our Project Background Document, Strategic Options Report (SOR), Corridor Preliminary Routeing and Siting Study (CPRSS).

website and return it to us.



Email us

If you prefer to send us your comments via email, you can send them to us at <u>chesterfield-willington@</u> <u>nationalgrid.com</u>.



Attending one of our public information events.



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Send us a letter

You can send a letter or completed feedback form at no cost to FREEPOST NATIONAL GRID PROJECTS (JBP) - no stamp or further address is needed.



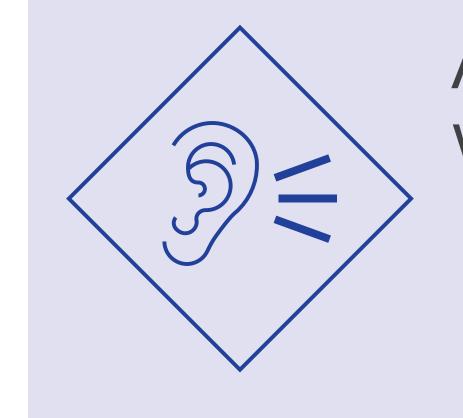
Visiting an information point to collect a feedback form and consultation documents.



Requesting an 'ask the expert' session from a member of the team - book by calling or emailing us.

Call us

If you require any assistance with providing feedback, please call us on **0800 073 1047**. Lines are open Monday to Friday 9am-5:30pm, with an answerphone facility taking messages outside of these hours.



Attending one of our online webinars.



Chesterfield to Willington

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What happens next?

This is our first stage of consultation. The feedback we receive at this first stage of consultation, along with outputs from

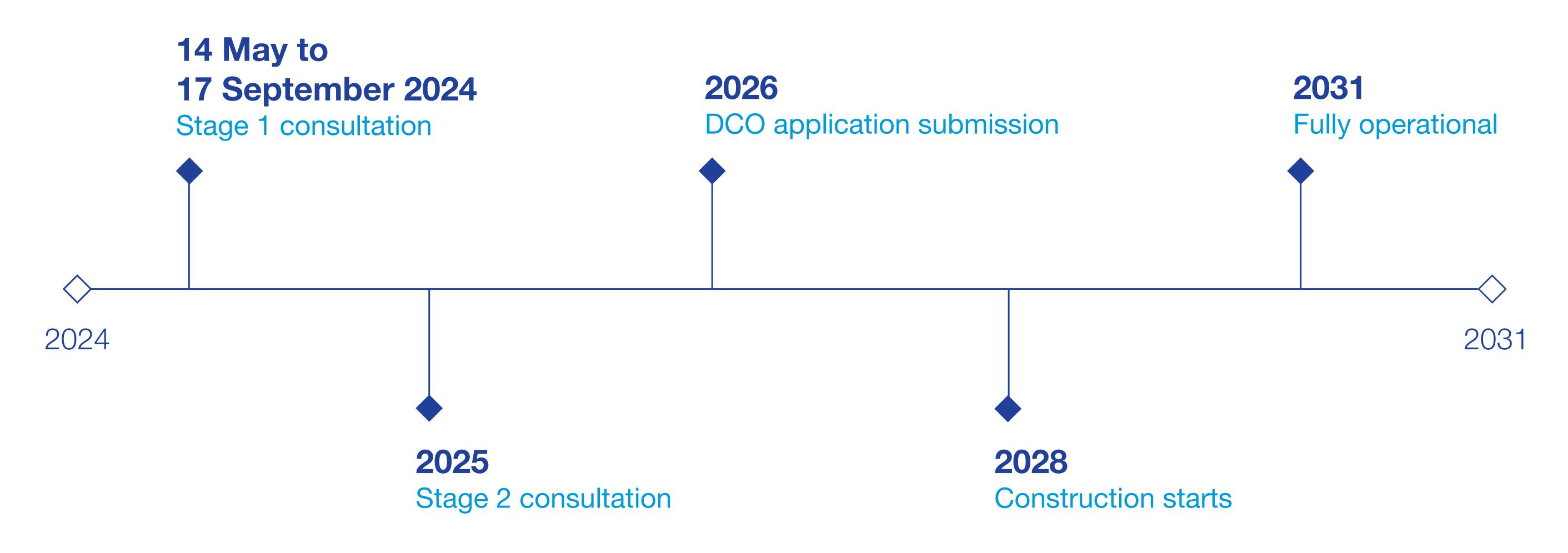
technical assessments and environmental surveys, will shape the development of our proposals for Chesterfield to Willington.

Following this consultation, we will:

- consider all consultation feedback as we refine our proposals before the next stage;
- continue our discussions with landowners and those with an interest in land which interacts with the project;
- continue to brief local elected representatives;
- work with communities, local authorities and other stakeholders;
- continue environmental impact assessment work and undertake surveys along the proposed route;
- provide continued updates to the local community and those who have asked to be kept updated on our proposals via email; and
- continue to refine our proposals in response to feedback and the outputs from technical studies and environmental surveys.

We will present updated proposals for Chesterfield to Willington during our next stage of consultation which we anticipate will be in 2025. Following analysis of the feedback we will report back on the key themes raised during consultation. We will also publish a summary of the key themes raised during this Stage 1 consultation and explain how feedback has informed the development of our proposals.

Following further development and finalisation of detailed proposals, we will submit our Development Consent Order application to the Planning Inspectorate. A final consenting decision will rest with the Secretary of State for the Department of Energy Security and Net Zero.



These timings are indicative.



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In the community

Communities play a vital role in the transition to cleaner sources of energy. We believe those that host energy

infrastructure should benefit from doing so.

We are committed to working in collaboration with communities, stakeholders, suppliers and other parts of industry, to leave a lasting positive legacy by delivering community benefits in the areas that host our infrastructure.

In 2023, Government sought views about potential community benefits for those hosting new electricity transmission infrastructure. We welcome Government's intention to publish guidance outlining principles for how communities should benefit from the development of onshore transmission infrastructure.

This will help set a framework for us, in consultation with local communities and stakeholders, to deliver community benefits that work for them. This could include, for example, supporting local community projects as well as delivering broader socioeconomic and environmental enhancements.

Community Grant Programme

When we are nearer to construction, our Community Grant Programme will be open for applications from local charities and not for profit organisations to support local community initiatives.

You can find out more at:









Opportunities for young people

To help achieve net zero by 2050, we estimate our industry needs to recruit 400,000 jobs between now and 2050.

Find out more about careers, apprenticeships and student placements with National Grid:



Grid for Good

Grid for Good is our flagship programme that helps increase access to training and employment opportunities for young people. We support students with career coaching and masterclasses. Find out more about Grid for Good:



