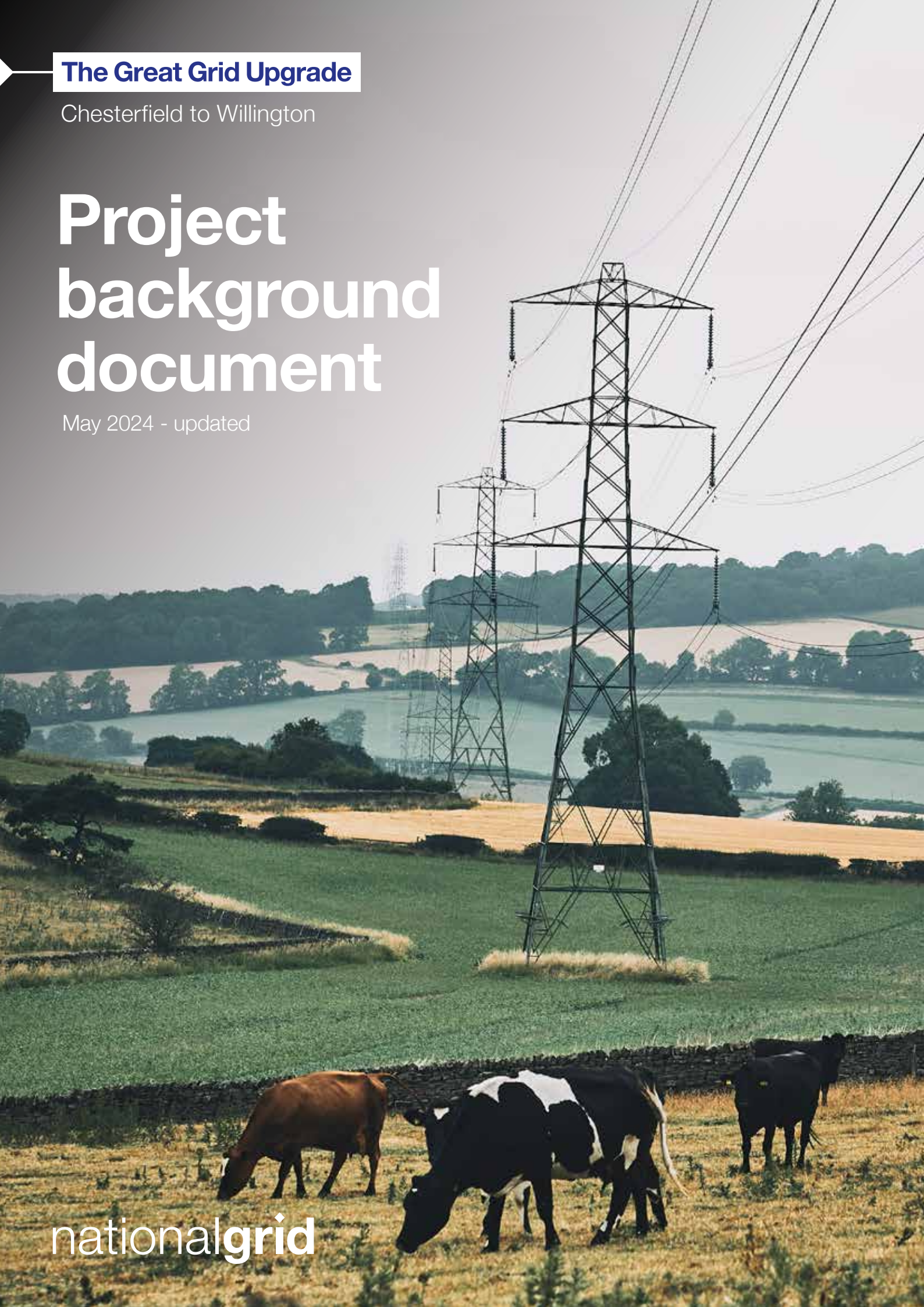
The Great Grid Upgrade

Chesterfield to Willington

Project background document

May 2024 - updated



nationalgrid

About National Grid

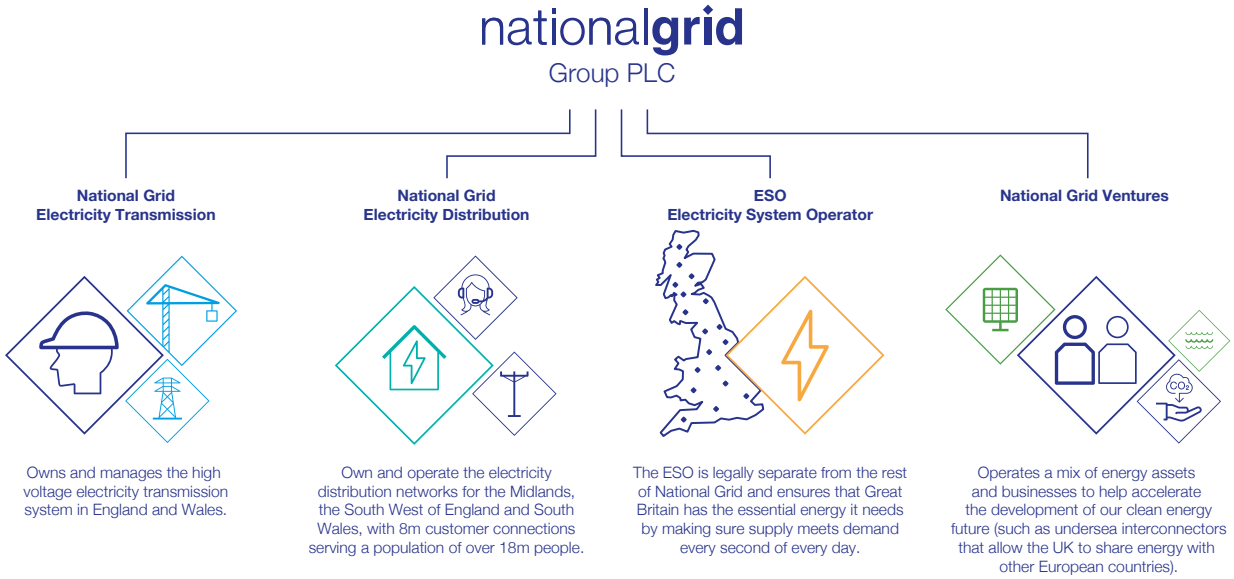
National Grid delivers electricity safely, reliably, and efficiently to the customers and communities we serve – all while working towards building a cleaner, fairer energy system for the future.

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.

National Grid Electricity Transmission (NGET) sits at the heart of Britain's energy system, connecting millions of people and businesses to the energy they use every day. Every time a phone is plugged in, or a switch is turned on, we've played a part, connecting you to the electricity you need.

NGET is developing the proposals set out in this document. It must, under the Electricity Act 1989, do so in an efficient, coordinated, and economical way which also considers people, the location, and the environment. We have published ten commitments to show how we go about doing this in our stakeholder, community and amenity policy[1].

To find out more about how we develop our proposals, please see our video[2] which explains how we work. If you would like this information provided in another format, please get in touch. See our Contact Us section at the end of this document.



[1] National Grid's commitments when undertaking works in the UK: Our stakeholder, community and amenity policy (National Grid, December 2019) – Available at https://www.nationalgrid.com/sites/default/files/documents/National%20Grid_s%20commitments%20when%20undertaking%20works%20in%20the%20UK.pdf

[2] National Grid Electricity Transmission, 'How we work' video players.brightcove.net/867903724001/default_default/index.html?videoId=6329276694112

Contents

Foreword

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 are investing £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.

Our Chesterfield to Willington proposals will support the country's energy transition and make sure the grid is ready to connect to more and more sources of low carbon electricity generated in Britain. The project would transport clean energy from the North of England to homes and businesses in the Midlands and play an important role in building a more secure and resilient future energy system.

The project forms part of **The Great Grid Upgrade**, which is the largest overhaul of the grid in generations. The Great Grid Upgrade will play a big part in the UK government's plan to boost homegrown power. It will help the UK switch to clean energy and make sure our electricity network is fit for the future; carrying more clean, secure energy from where it's generated to where you need it.

We're now seeking your feedback on our proposals in your local area during a consultation period which runs from **14 May to 17 September 2024.**

Documents that relate to our proposals, including this Project Background Document, can be found at **nationalgrid.com/chesterfieldtowillington**. To request a copy, please call the Community Relations team on **0800 073 1047** or email **chesterfield-willington@nationalgrid.com.**

Please do share your views, as well as any suggestions regarding what you'd like us to consider, as we continue to develop the project by **11.59pm on 17 September 2024.**


PUBLIC FOOTPATH
Stanton-by-Bridge 1 m.
Melbourne 3 m. Ticknall 3½ m.

Consulting on our proposals

We are now consulting on our proposals for Chesterfield to Willington to enhance the electricity network by building and operating approximately 60 kilometres (km) of new 400 kilovolt (kV) overhead electricity line.

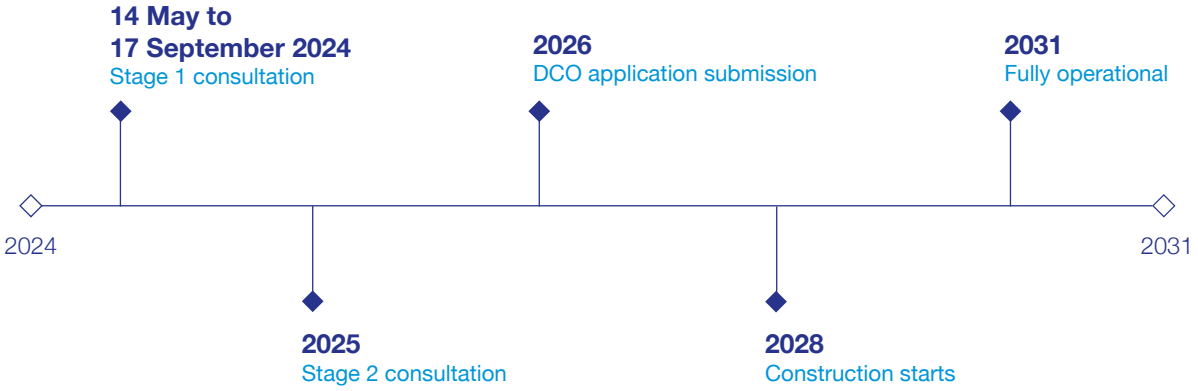
This overhead line would connect at a new 400 kV substation at Chesterfield (which will extend to the south of its existing 275 kV substation) and the existing Willington substation. It is proposed that the Chesterfield substation will be completed under a separate essential project, 'Brinsworth to High Marnham'. Other local network configurations would also need to be carried out as part of this project.

To build and operate the new Chesterfield to Willington line, we require a Development Consent Order (DCO) under the Planning Act 2008. Consultation is an important part of the DCO process and the feedback we receive will shape our plans ahead of submitting the DCO application, which we anticipate will be in 2026.

The Planning Inspectorate will then review and examine our application. This includes encouraging further submission of views from communities and other interested parties, before it makes a recommendation to the Secretary of State for Energy Security and Net Zero, who will decide whether to grant consent. To find out more about the DCO process, please visit the Planning Inspectorate website[3].

During this consultation, we are seeking views and local knowledge about the proposed area within which the pylons could be routed.

Our consultation is open to anyone who may have an interest in our proposals – residents, communities, landowners, businesses, and interest groups, as well as elected representatives and statutory consultees such as, but not limited to, the Environment Agency, Natural England, and Historic England.



These timings are indicative.

[3] The process | Planning Inspectorate Website (planninginspectorate.gov.uk)

To learn about our proposals, you can:

Read this **Project Background Document**.

View our **supporting technical reports and interactive map** on our website **nationalgrid.com/chesterfieldtowillington**.

Come to a drop-in **public information event** (see Table 2).

If you can't attend one of our events visit our **virtual consultation room** on our website which includes all the information we will have at our events.

Visit a **local information point** to view and collect copies of materials (see Table 4).

Email or call us with your questions at **chesterfield-willington@nationalgrid.com** or **0800 073 1047** (Monday to Friday 9am – 5:30pm).

Sign up to receive **project update emails** on our website.

Book a one-to-one '**Ask the expert session**' with a member of the project team if you have a particular issue you would like to discuss.

Join an **online webinar session** (see Table 3)

Your feedback is important in helping us to develop and refine our plans and we will record all feedback we receive. Following the consultation, we will report back on the key themes that have been raised and how we have responded to comments in the development of our plans.

Please see our **Consultation Strategy** for further details on our approach to this consultation, which can be found within our document library on our website.

Visit: **nationalgrid.com/the-great-grid-upgrade/chesterfield-to-willington/consultation-materials**

How to respond

Complete a feedback form

You can complete a form online at **nationalgrid.com/chesterfieldtowillington**.

Alternatively, paper copies are available to pick up from the local information points and at our events.

Email us

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

Send us a letter

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

Call us

If you require any assistance with providing feedback, please call us on freephone **0800 073 1047**. Lines are open Monday to Friday 9:00am-5:30pm, with an answerphone facility taking messages outside these hours.

Please submit your feedback by 11.59pm on 17 September 2024.

Consultation materials

A range of materials and tools are available to support this consultation for those who would like to find out about our proposals.

This Project Background Document is a key document which provides information on our early works and our emerging preference for where we could locate the new overhead line. It is supported by two technical documents, the Strategic Options Report (SOR) and Corridor Preliminary Routeing and Siting Study (CPRSS), which provide more technical insight into how we've arrived at our proposals and a comparative analysis of alternative options.

All documents and other supporting materials as listed opposite are available on the project website and will be available at our public information events, with selected materials made available at identified information points (see Table 4).

Please get in touch if you would like a paper copy of any of our consultation documents. Please note that the technical reports may be subject to a printing charge due to their size.

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 throughout this document 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 throughout this document as the 'graduated swathe' or 'swathe'.

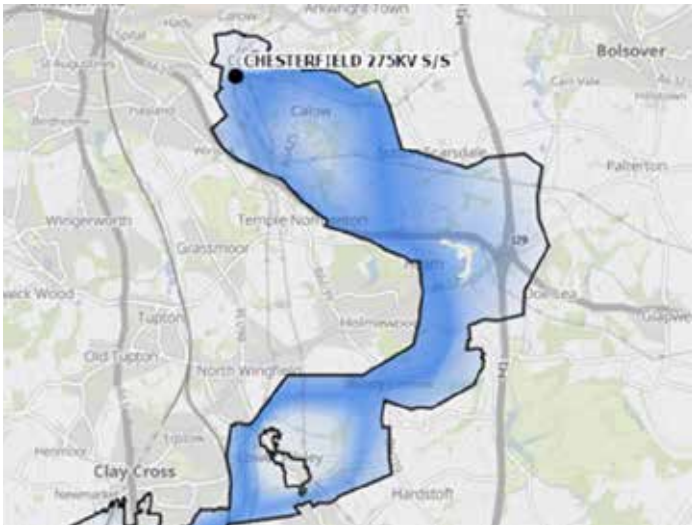


Table 1: Consultation materials

Type	Material	Description
Technical document	**Strategic Options Report (SOR)**	An explanation of the strategic options considered for the substation connection points for Chesterfield to Willington.
Technical document	**Corridor Preliminary Routeing and Siting Study (CPRSS)**	An explanation of how the Emerging Preferred Corridor was identified between the two connection substations. This includes information on the graduated swathe which shows the areas within the corridor where the proposed infrastructure is considered more and less likely to be located.
General document	**Project Background Document**	Provides an overview of the project, summarising our technical documents and providing information on how to take part in the consultation.
Project map	**Interactive map**	Online map of the Emerging Preferred Corridor and graduated swathe. A postcode or address can be entered to view areas of interest.
Project map	**Overview map and individual route section maps – in print and online**	These maps show the Emerging Preferred Corridor and graduated swathe in full or sectioned by geographical area (see Our Proposals section). It is supported by further maps to highlight challenges and constraints.
General document	**Consultation newsletter**	Provides a high-level description of the proposals and detailed information on the consultation and events.
General document	**Feedback form**	To gather comments and feedback on our proposals.

View all Stage 1 consultation information

Scan the QR code to be directed to our website. Here you can view all consultation materials, our interactive map and register for our webinars.

Public information events

A series of drop-in public information events will provide opportunities to view the proposals and speak to members of our team. The events will include display boards, a fly-through video of the proposed Emerging Preferred Corridor where we are considering overhead lines, technical documentation and large-scale maps. This Project Background Document, maps and feedback forms will be available to take away.

Table 2: Public information events

Area	Date	Time	Location
Alfreton Amber Valley District	**Monday 8 July 2024**	1pm-6pm	**Christ the King Parish Hall** 104 Nottingham Road, Alfreton DE55 7GL
Ripley Amber Valley District	**Wednesday 10 July 2024**	10am-3pm	**Greenwich Community Sports Hub** Nottingham Road, Ripley DE5 3AY
Pilsley North East Derbyshire District	**Friday 12 July 2024**	2pm-7pm	**Pilsley Village Hall** Pear Tree Road, Pisley S45 8HU
Calow North East Derbyshire District	**Saturday 13 July 2024**	10am-4pm	**Calow Community Centre** Allpits Road, Calow S44 5AT
Kilburn Amber Valley District	**Monday 15 July 2024**	2pm-7pm	**Kilburn Village Hall** Church Street, Kilburn, Belper DE56 0LU
Glapwell Bolsover District	**Thursday 18 July 2024**	2pm-7pm	**The Glapwell Centre** The Green, Glapwell S44 5LW
Findern South Derbyshire District	**Friday 19 July 2024**	2pm-7pm	**Findern Village Hall** Castle Hill, Findern DE65 6AL
Weston-on-Trent Amber Valley District	**Saturday 20 July 2024**	10am-4pm	**Weston-on-Trent Village Hall** 47 Main Street, Weston-on-Trent DE72 2BL
Borrowash Erewash District	**Wednesday 24 July 2024**	2pm-7pm	**Ashbrook Community Centre** Ashbrook Avenue, Borrowash DE72 3JE

Webinars

A series of one-hour online webinar sessions will be held to present details of our proposals followed by a question-and-answer session. These include general overview webinars and location-themed webinars to allow you to attend the session which is of the most interest. You can locate the most relevant section to you by viewing the Our proposals section or by visiting our online interactive map and entering a place or location of interest.

A recording of a general overview presentation will be available to view on our website after the first webinar session.

You can register to attend the webinars on the website. Alternatively, you can contact our community relations team on **0800 073 1047** or email at **chesterfield-willington@nationalgrid.com.**

Table 3: Webinar sessions

Webinar sessions	Date	Start time
Introduction to Chesterfield to Willington project proposals – general overview	**Tuesday 21 May**	6pm
Our proposals in Section 1 - Chesterfield substation to Stretton	**Tuesday 9 July**	6pm
Our proposals in Section 2 - Stretton to Ripley	**Tuesday 16 July**	6pm
Our proposals in Section 3 - Ripley to Morley	**Monday 22 July**	6pm
Our proposals in Section 4 - Morley to Ockbrook	**Tuesday 23 July**	6pm
Our proposals in Section 5 - Ockbrook to Aston-on-Trent	**Thursday 25 July**	6pm
Our proposals in Section 6 - Aston-on-Trent to Willington substation	**Monday 29 July**	6pm
Introduction to Chesterfield to Willington project proposals – general overview	**Wednesday 31 July**	6pm

‘Ask the expert’ sessions

You can also book a one-to-one expert session with a member of the project team if you have a particular issue you would like to discuss. These can be held via telephone call back or video conference call.
Please call us on **0800 073 1047** or email us at **chesterfield-willington@nationalgrid.com** to book an appointment.

To help us set up the session and find the right expert(s), please tell us your preferred availability and question/topic of interest.

Local information points

Paper copies of the key consultation materials will be available at a number of locations to ensure public access to the information throughout the consultation. These are located within or in close proximity to the Emerging Preferred Corridor.

At these information points the consultation newsletter and feedback form are available to collect.

Reference copies of the Project Background Document, SOR and CPRSS will be available to view.

Documents will be available at these locations throughout the consultation period. Please check with the relevant venue for the most up-to-date opening times.

Table 4: Information point locations

Information points	Opening times
Erewash District	
Ilkeston Library Market Place, Ilkeston DE7 5RN	Monday, Wednesday, Thursday & Friday: 9:30am - 5pm Tuesday: 9:30am - 7pm Saturday: 9:30am - 4pm
Long Eaton Library Tamworth Road, Long Eaton NG10 1JG	Monday to Thursday: 9:30am - 7pm Friday: 9:30am - 7pm Saturday: 9:30am - 4pm
Borrowash Library Victoria Avenue, Borrowash DE72 3HE	Monday: 2pm - 5pm Wednesday: 9:30am - 7pm Friday: 9:30am - 1pm Saturday:10am - 1pm
Derby City District	
Alvaston Library London Road, Alvaston DE24 8QP	Monday: 1pm - 5pm Tuesday & Friday: 9:30am - 5pm Thursday: 9:30am - 7pm Saturday: 9:30am - 1pm
Mickleover Library Holly End Road, Mickleover DE3 0EA	Monday: 1pm - 5pm Tuesday & Friday: 10am - 5pm Thursday: 10am - 7pm Saturday: 10am - 1pm
Normanton Library St Augustine's Community Centre, Almond Street DE23 6LX	Monday & Friday: 9:30am - 5pm Wednesday: 9:30am - 7pm Thursday: 1pm - 5pm Saturday: 9:30am - 1pm
Riverside Library Council House, Corporation Street DE1 2FS	Monday to Friday: 9am - 5pm Saturday: 9am - 1pm

Amber Valley District	
Ripley Library Grosvenor Road, Ripley DE5 3JE	Monday-Friday: 9:30am - 5pm Saturday: 9:30am - 4pm
Alfreton Library Severn Square, Alfreton DE55 7BQ	Monday-Thursday: 9:30am - 5pm Friday: 9:30am - 7pm Saturday: 9:30am - 4pm
Belper Library Derwent Street, Belper DE56 1UQ	Monday, Wednesday, Thursday & Friday: 9:30am - 5pm Tuesday: 9:30am - 7pm Saturday: 9:30am - 4pm
Heanor Library Ilkeston Road, Heanor DE75 7DX	Monday-Wednesday: 9:30am - 5pm Thursday: 9:30am - 7pm Friday: 9:30am - 5pm Saturday: 9:30am - 4pm
North East Derbyshire District	
Clay Cross Library Holmgate Road, Clay Cross S45 9PH	Monday: 9:30am - 7pm Tuesday & Thursday: 9:30am - 5pm Friday: 9:30am - 12pm Saturday: 9:30am - 12:30pm
Holmewood Library Heath Road, Holmewood S42 5RB	Monday: 2pm - 5pm Thursday: 10am - 7pm Friday: 10am - 1pm Saturday: 9:30am - 1pm
Bolsover District	
Bolsover Library Church Street, Bolsover S44 6HB	Monday-Thursday: 9:30am - 5pm Friday: 9:30am - 7pm Saturday: 9:30am - 4pm
South Normanton Library The Hub, Shiners Way, South Normanton DE55 2AA	Monday-Friday: 9am – 4pm
Chesterfield District	
Chesterfield Library New Beetwell Street, Chesterfield S40 1QN	Monday, Tuesday & Friday: 9am - 5pm Wednesday & Thursday: 9am - 7pm Saturday: 9am - 4pm
Newbold Library Windemere Road, Chesterfield S41 8DU	Monday & Thursday: 9:30am - 5pm Tuesday: 9:30am - 7pm Friday: 9:30am - 12pm Saturday: 9:30am - 12:30pm
Old Whittington Library High Street, Chesterfield S41 9JZ	Tuesday & Thursday: 10am - 6pm Saturday: 10am - 1pm

The need for Chesterfield to Willington

The electricity transmission network today in the region

Like much of the high voltage electricity transmission network across the country, the transmission network was largely built in the 1960s. 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. Little or no transmission infrastructure was constructed in some areas, so there is currently limited ability to support connections on the coast.

A watt is a measure of power and there are 1 billion watts in 1 GW. 1 GWh is the equivalent of powering one million UK homes for one hour.

A kV is a measurement of electrical voltage. The measurement stands for kilovolts or one thousand volts. Put simply, the higher the kV capacity of an overhead line, the more power it can transport.

Why does the network in the region need reinforcing?

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.

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. This will put pressure on the existing network, such that 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 reinforce the electricity transmission network and help to provide the increased capacity between the North of England and the Midlands.

Network capacity and demand

There are several network upgrade projects planned, designed to get greater capability out of the existing network; allowing more electricity to pass through the transmission network and help accelerate the connection of clean energy projects. This ensures we are getting more out of our existing infrastructure, before we build new. This project will build a new reinforcement that forms part of The Great Grid Upgrade.

Without this upgrade, the network won't have the capacity that is needed to move electricity from where it is produced to where it is needed. Therefore, we need to upgrade it to maintain system compliance and prevent overloading circuits as they transport the energy that is generated.

The Chesterfield to Willington project will support the UK's net zero targets by adding capacity to accommodate increasing power flows of energy. This is 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.

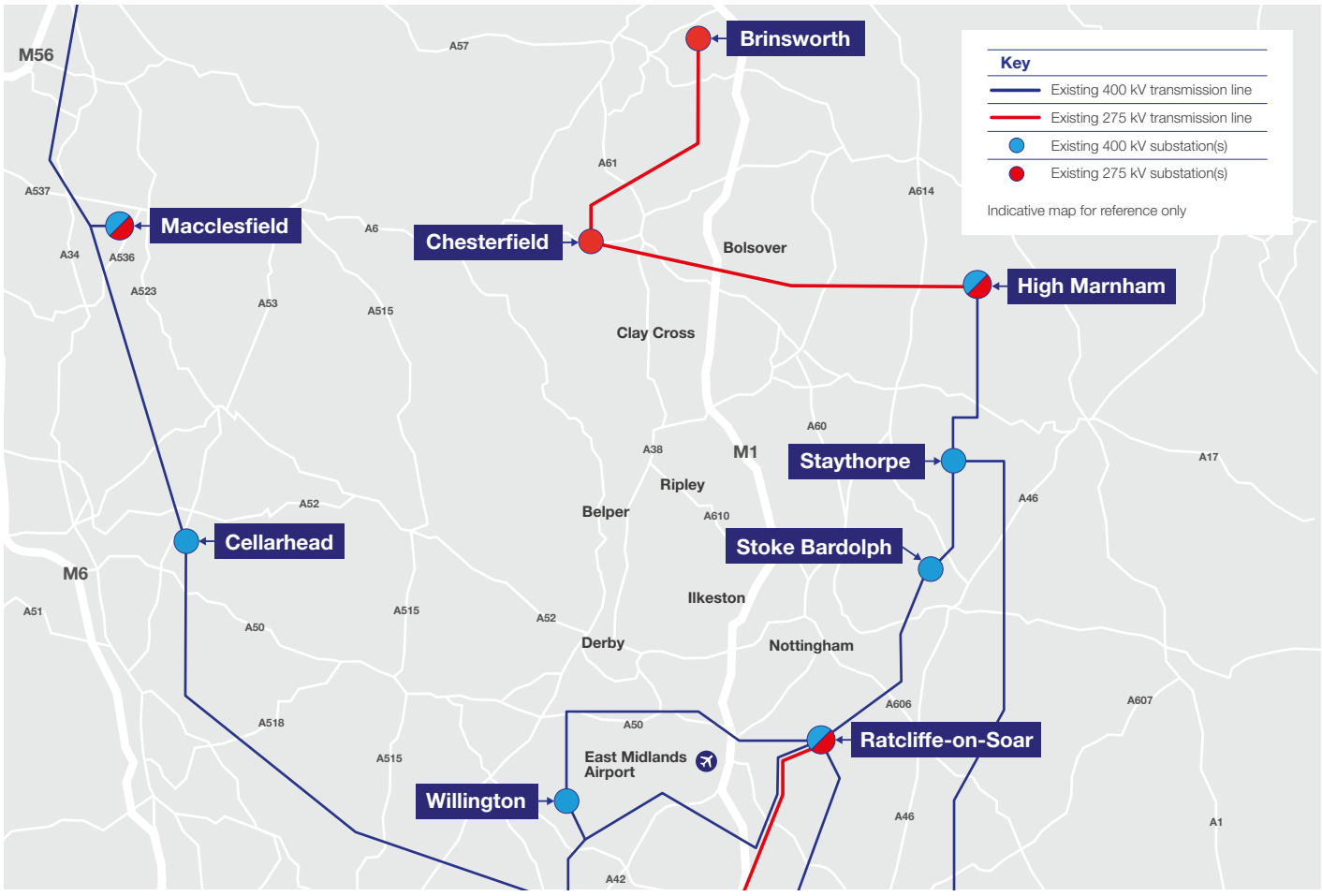


Figure 1: Existing transmission system in the East Midlands region.

Our proposals

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.

This section sets out our proposals, including the Emerging Preferred Corridor and graduated swathe, for the new overhead electricity line and the key issues and constraints that have been considered.

Your feedback on the location of the alignment within the corridor will play an important part in helping us to refine our plans.

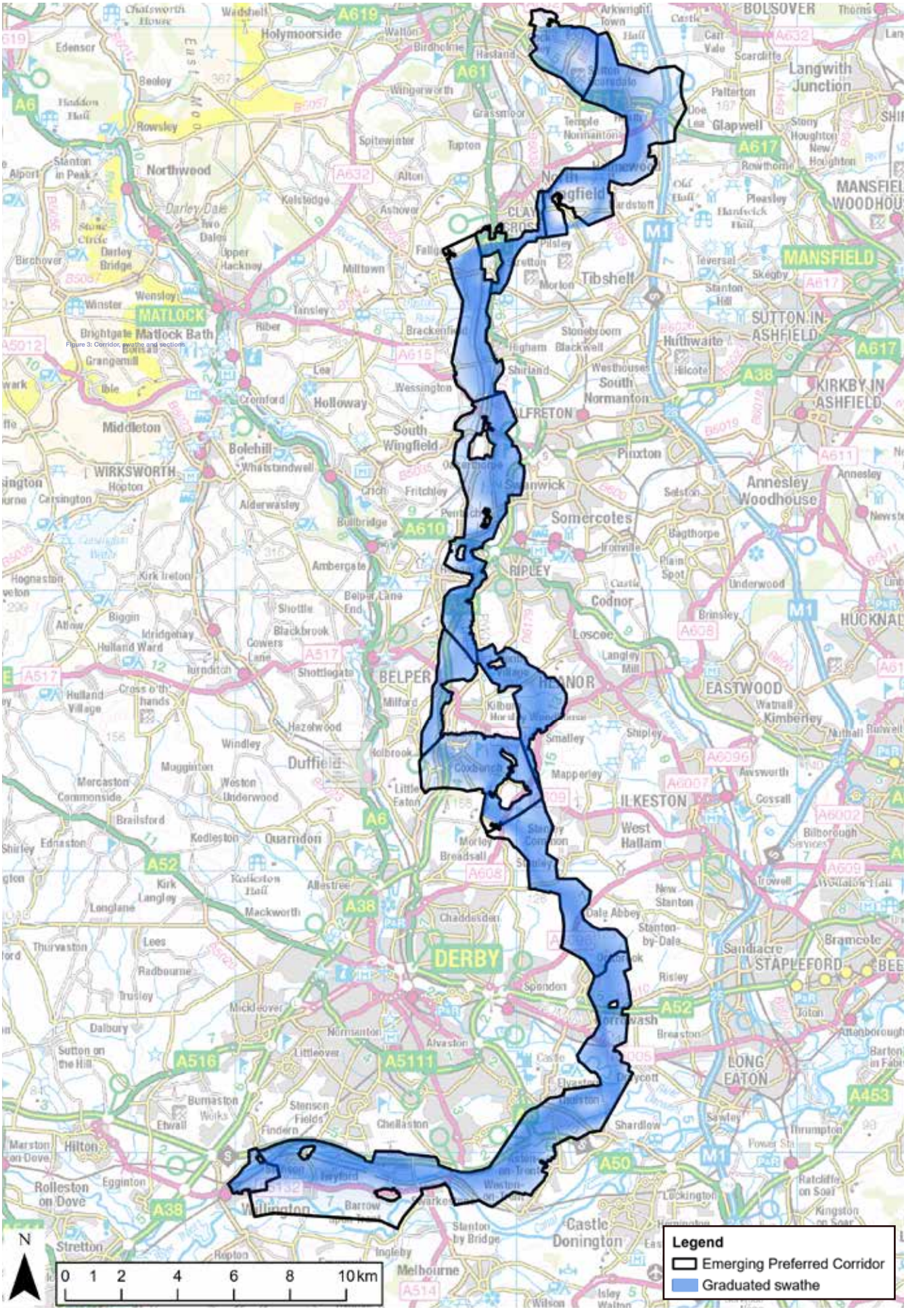


Figure 2: Emerging Preferred Corridor and graduated swathe.

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.

Our proposals for Chesterfield to Willington

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 of 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.

Example of 400 kV overhead line and pylon for illustrative purposes only.

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.

Example of a 400 kV substation for illustrative purposes only.

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 allowed us to identify preliminary corridors that aim to:

- avoid the largest areas of highest community value;
- avoid the largest settlements;
- allow for enough space to accommodate reasonable lengths of straight alignment at the detail design stage;
- follow existing infrastructure corridors such as the M1 motorway and existing 132 kV overhead line routes with the potential to remove or underground existing 132 kV infrastructure and restrict the geographic extent of environmental and community impacts;
- be wide enough to allow for smaller areas of high community value and residential properties within the corridor to be avoided at the routeing stage; and
- be wide enough for constraints not apparent at this stage (i.e. information arising from consultation, not currently known to NGET) to avoid at the routeing stage.

We initially identified and appraised eight corridor options. The Emerging Preferred Corridor, as presented at this stage of consultation, was ultimately selected to seek to avoid potential impacts to areas with the highest community value and find a more direct path where possible.

This was achieved by:

- ruling out potential options that crossed the Peak District National Park and the Derwent Valley Mills World Heritage Site therefore routeing to the east of Derby;
- avoiding settlements of various sizes, including Derby, Chesterfield and Clay Cross. Smaller towns and villages include Grassmoor, Tupton, Wessington, Ambergate,Belper and Willington;
- routeing around several Sites of Special Scientific Interest (SSSI), Local Nature Reserves and ancient woodlands;
- designing the route to ensure infrastructure is in the lowest areas of flood risk possible in accordance with national planning policy due to unavoidable interaction with the River Derwent and associated flood zone areas. With appropriate mitigation we consider that potential adverse effects can be reduced/avoided; and
- maintaining appropriate distances from community facilities and tourist attractions including National Trust land (Duffield Castle and Kedleston Hall), the Great British Car Journey museum, recreation grounds and publicly accessible green space.

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. You can find out more about how we develop projects in Our Approach to Consenting[4] which is available on our website.

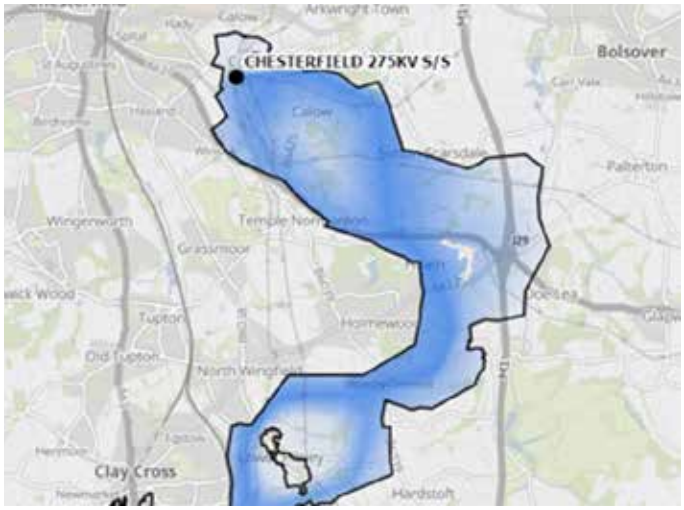
For further detail, and a comparative analysis of the Emerging Preferred Corridor against alternative options, please view the overviews for each section in the Corridor Preliminary Routeing and Siting Study report.

More detail on the options considered can be found in Chapter 7 and Chapter 9 of the CPRSS report which is available on our website.

[4] https://www.nationalgrid.com/electricity-transmission/document/142336/download

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 throughout this document 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 throughout this document as the 'graduated swathe' or 'swathe'

Proposals by location

Your feedback will play an important role in helping us develop our proposals, in particular in terms of refining the Emerging Preferred Corridor and selecting where the infrastructure (pylons and overhead electricity line) could be located.

We have broken the corridor down into six sections and the following pages provide a summary of each section of the Emerging Preferred Corridor and graduated swathe, including the key issues and constraints.

- **Section 1: Chesterfield substation to Stretton**
- **Section 2: Stretton to Ripley**
- **Section 3: Ripley to Morley**
- **Section 4: Morley to Ockbrook**
- **Section 5: Ockbrook to Aston-on-Trent**
- **Section 6: Aston-on-Trent to Willington substation**

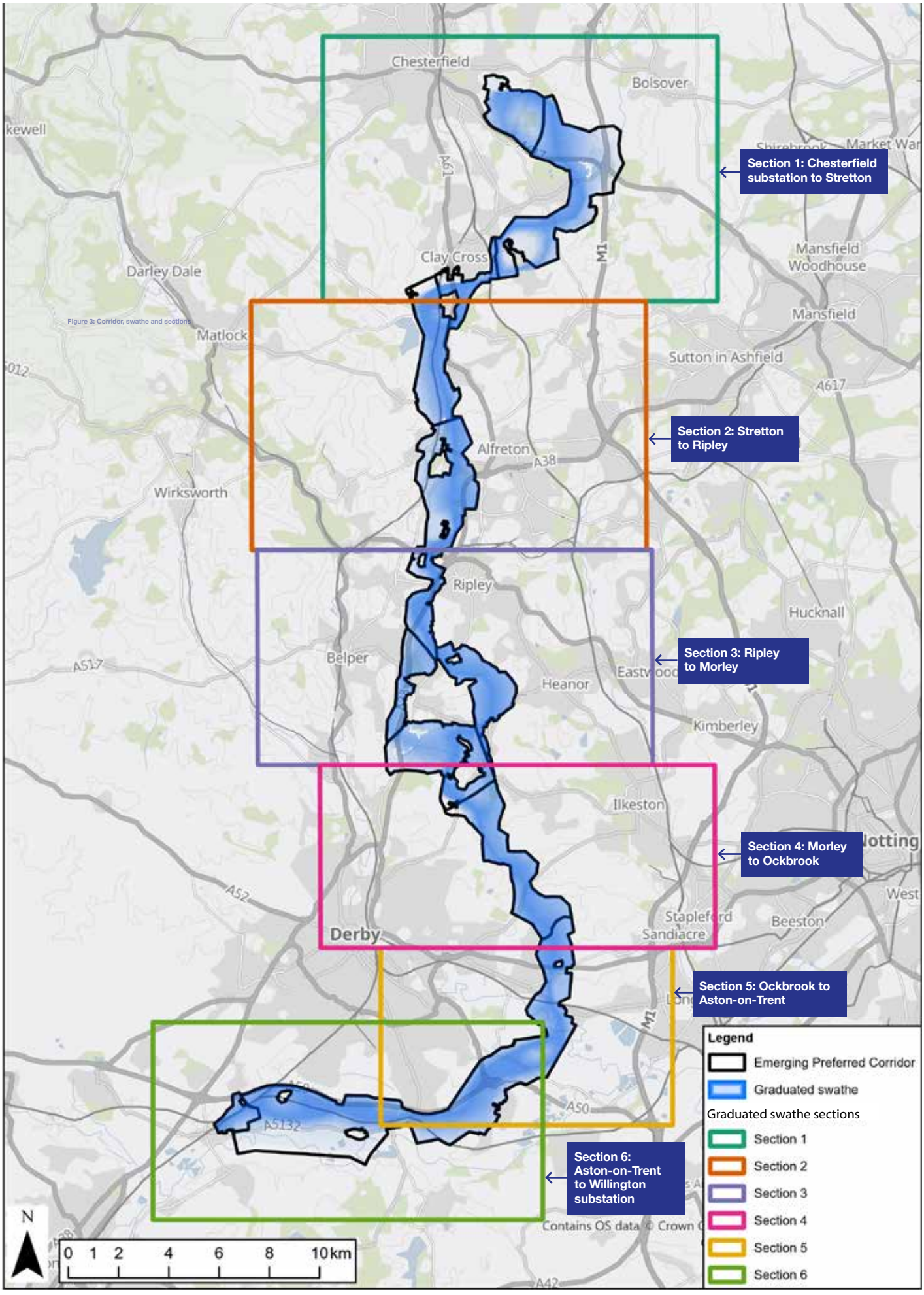


Figure 3: Emerging Preferred Corridor and swathe sections.

Section 1: 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 of preference which broadly follow the existing 132 kV overhead lines either north of Calow towards Sutton Scarsdale before travelling to the south, or south of Calow towards the A617 road, before heading in a south-easterly direction.

The M1 motorway offers a potential linear corridor for a new overhead line in this area, however this would increase the length of line required. Instead, a preference is shown between Holmewood and Heath which offers the shortest, straightest path while seeking to avoid a number of listed buildings, areas of ancient woodland and the Heath Conservation Area.

South of Holmewood, a preference is shown for a path towards the western edge of the corridor to provide distance between Stainsby and associated historic features. Moving further west, potential paths are available north or south of Lower Pilsley with preference shown to the north reflecting the presence of community amenities and ancient woodland towards the south. The existing 132 kV overhead lines in this location would need to be reconfigured or undergrounded to establish the new line.

The corridor then travels around the southern edge of Clay Cross towards Stretton, within relatively a relatively narrow gap seeking to avoid features in this area. including existing properties and solar farms.

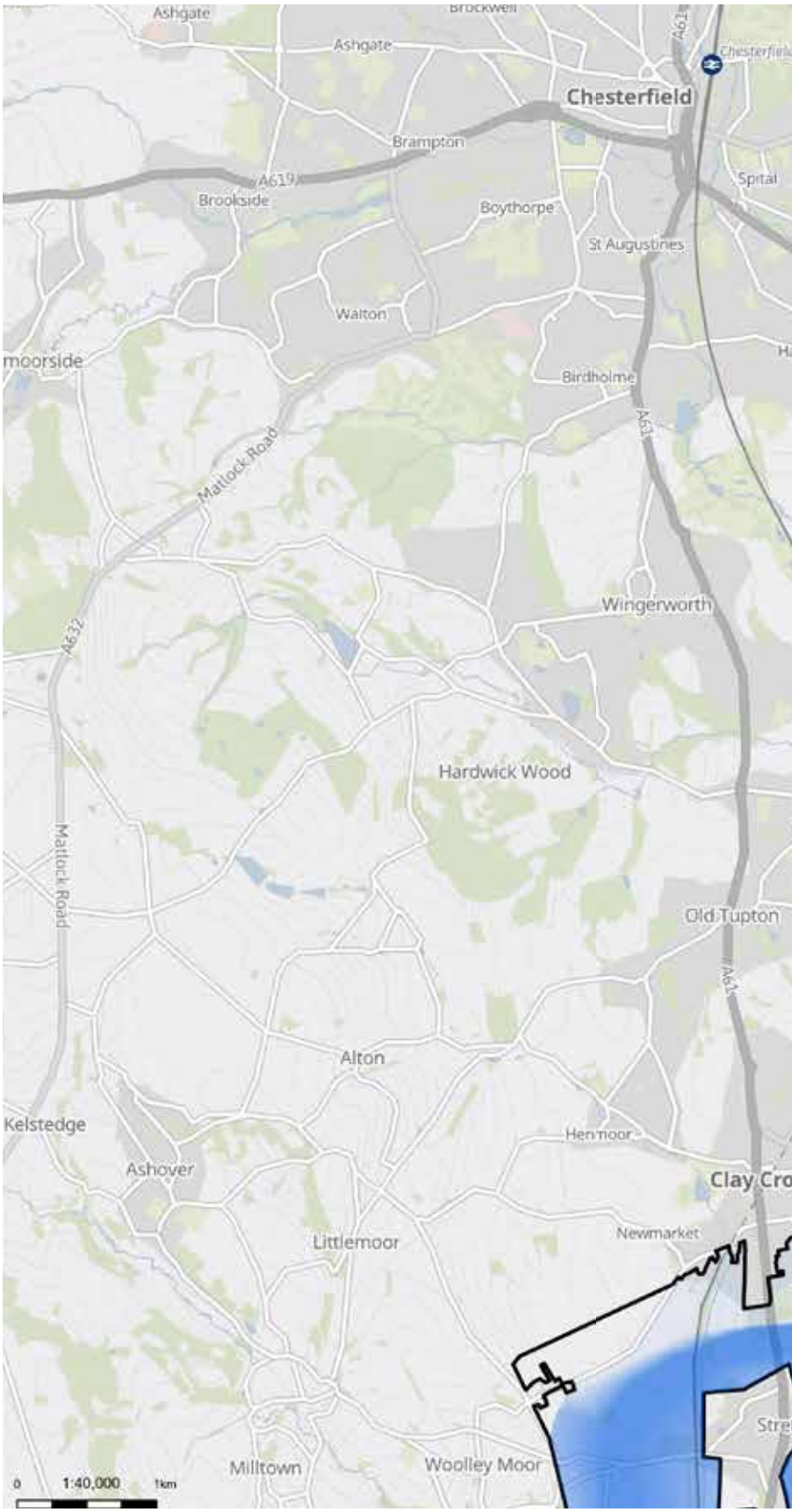
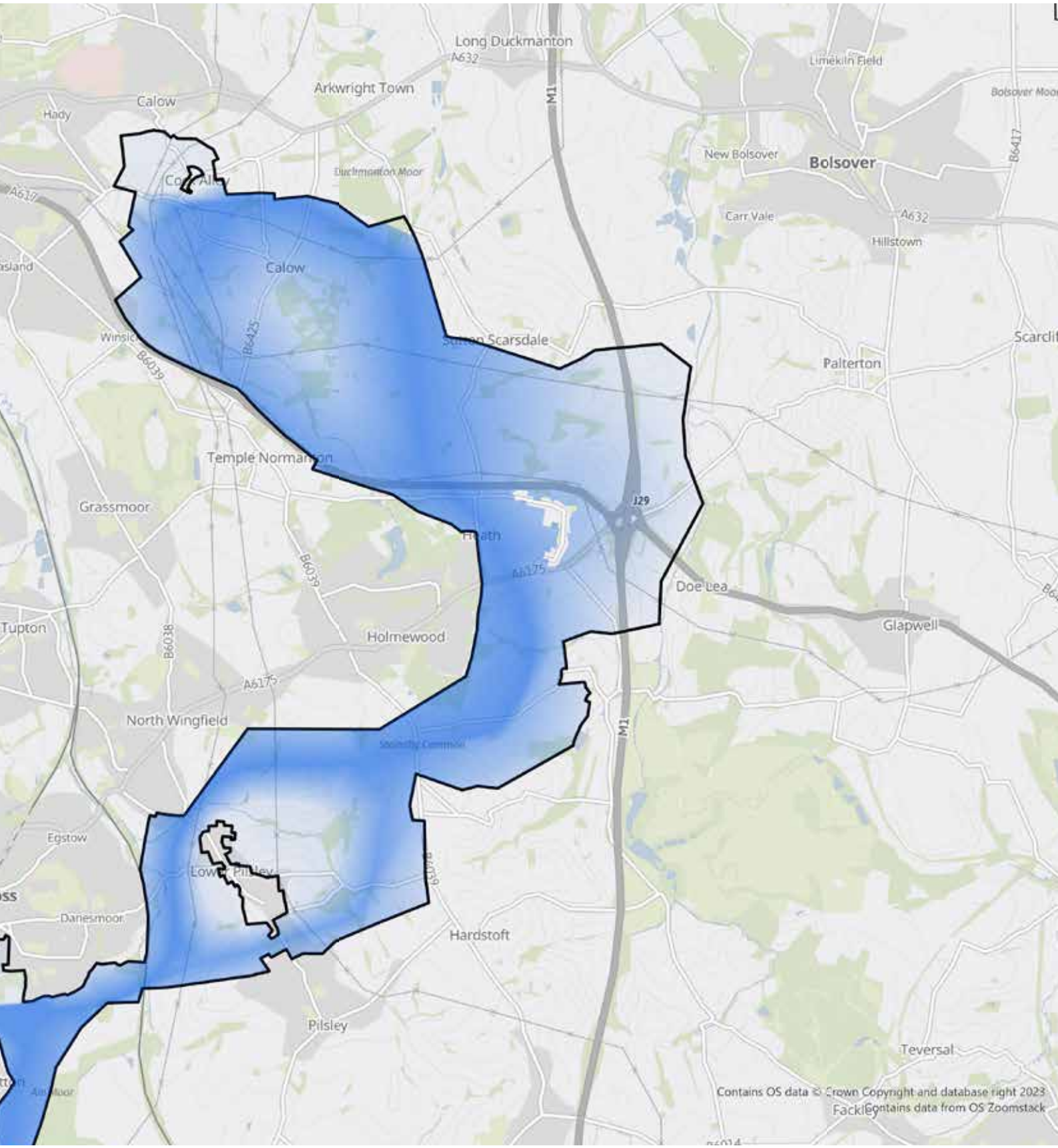


Figure 4: Section 1 of the Emerging Preferred Corridor.


Long Duckmanton
A632
Limekiln Field
Arkwright Town
Calow
Hady
M1
Bolsover Moor
B6417
New Bolsover
Bolsover
Duckmanton Moor
A617
Carr Vale
A632
Hillstown
Calow
B6425
Scarsdale
Palterton
B6039
Temple Normanton
Grassmoor
J29
Heath
A6175
Doe Lea
Glapwell
Tupton
B6038
Holmewood
A6175
North Wingfield
M1
Egstow
Daniesmoor
Hardstoft
Pilsley
Teversal
Contains OS data © Crown Copyright and database right 2023
Contains data from OS Zoomstack

Section 2: 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 for a large section.

Within the corridor, the graduated swathe shows a potential path east of Stretton which would offer a more direct route than to the west and avoid the need to cross the River Amber and railway line as the corridor travels south towards Oakerthorpe. To the west of Stretton, crossing the River Amber may also be avoided but the railway line would require crossing twice.

Moving south towards Oakerthorpe, a preference is indicated to the east of the corridor with the existing railway line, trees and field boundary vegetation patterns offering mitigation from potential visual impacts.

The corridor presents potential paths either side of Oakerthorpe. To the west where the swathe is lighter, there are a number of features including the presence of Flood Zones 2 and 3 associated with the River Amber, as well as South Wingfield Conservation Area and Castle Hill monument, all of which would likely need to cross. A preference is therefore given for the eastern arm, which would require crossing Alfreton Golf Club but offers the potential to avoid Oakerthorpe Local Nature Reserve through appropriate routeing.

Around Pentrich and Lower Hartshay options are shown to the east and west of both settlements, and a preference indicates a preference to the east by the darker swathe as this provides the most direct route.

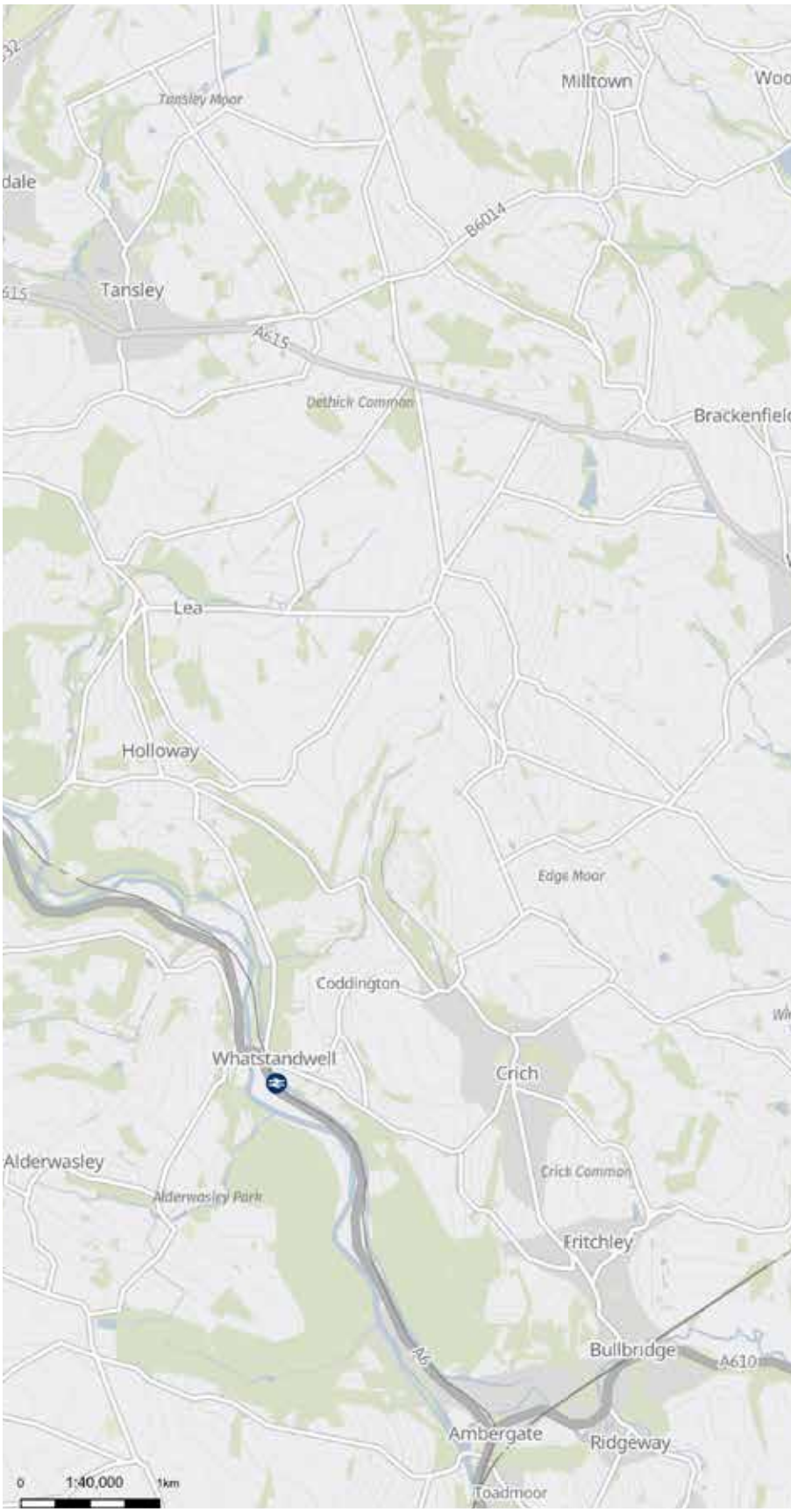
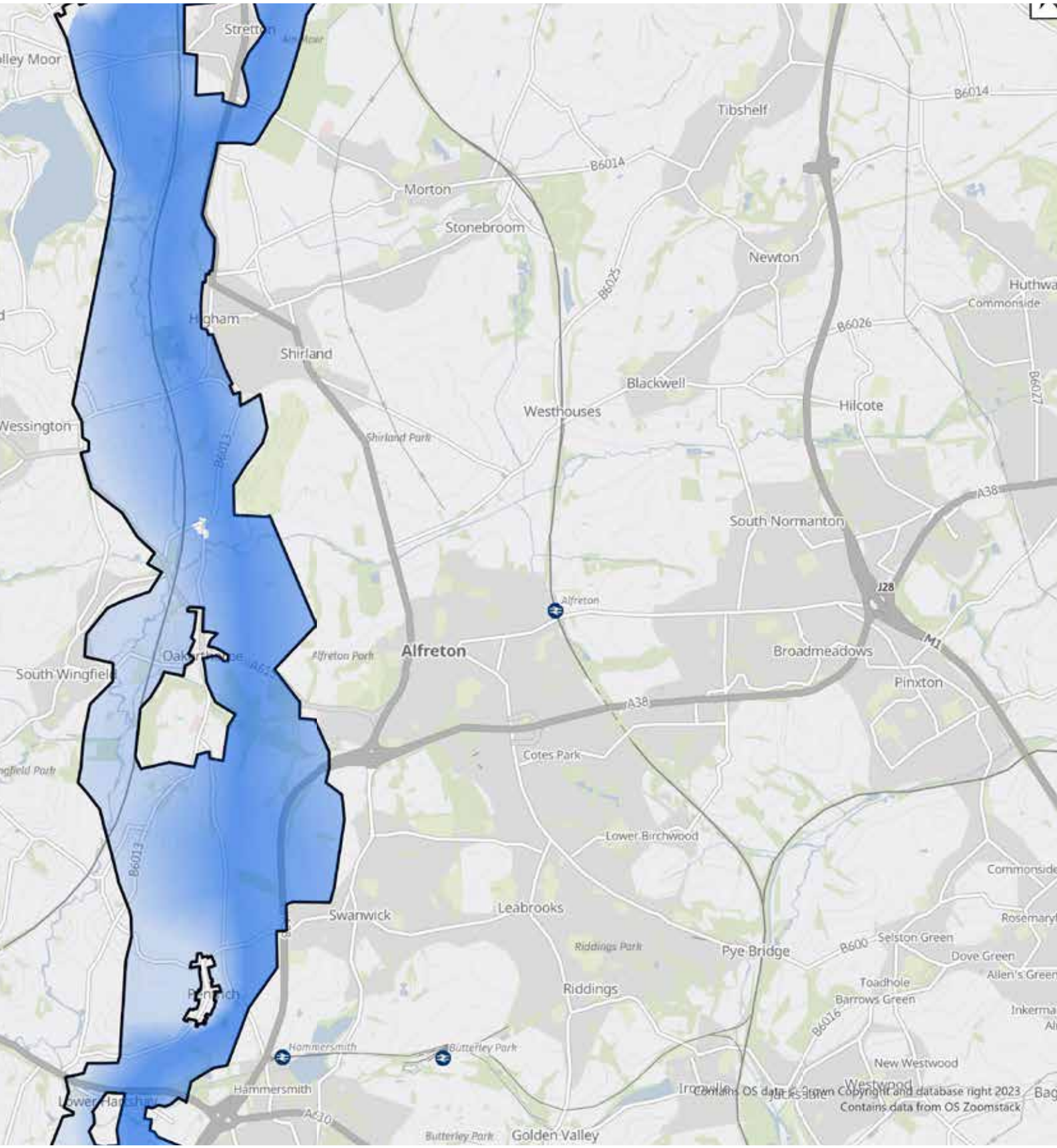


Figure 5: Section 2 of the Emerging Preferred Corridor.


Stretton
Tibshelf
B6014
Morton
Stonebroom
Newton
B6025
Higham
Shirland
B6026
Blackwell
Westhouses
Hilcote
Wessington
Shirland Park
B6013
A38
South Normanton
J28
Alfreton
M1
Alfreton
Alfreton Park
Broadmeadows
South Wingfield
Pinxton
A38
Cotes Park
Lower Birchwood
Swanwick
Leabrooks
Riddings Park
Pye Bridge
B600
Selston Green
Dove Green
Riddings
Toadhole
Barrows Green
B6016
Hammersmith
Butterley Park
New Westwood
Hammersmith
A610
Butterley Park
Golden Valley
Contains OS data © Crown Copyright and database right 2023
Contains data from OS Zoomstack

Section 3: 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 quite narrow to pass between Ripley and Upper Hartshay but offers the opportunity to follow the A38 corridor.

The corridor widens and splits as it navigates east or west around the cluster of settlements including Denby Bottles, Denby Village, Rawson Green, Kilburn, Lower Kilburn and Horsley Woodhouse. On the western arm of the corridor, the A38 continues to provide a potential linear corridor for the overhead line to follow. However existing features on the west including Flood Zones 2 and 3, Horsley and Coxbench Conservation Areas and Horsley Castle have resulted in a preference indicated along the eastern arm instead. An emerging pathway is shown through a gap between Denby Bottles and Denby Pottery Factory as this would avoid higher levels of known ground risks (mine entries and compressible ground) further east.

Where the corridor reconnects, a preference is shown for a pathway west of Morley which through appropriate routing could avoid 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 large part of the corridor in this location.

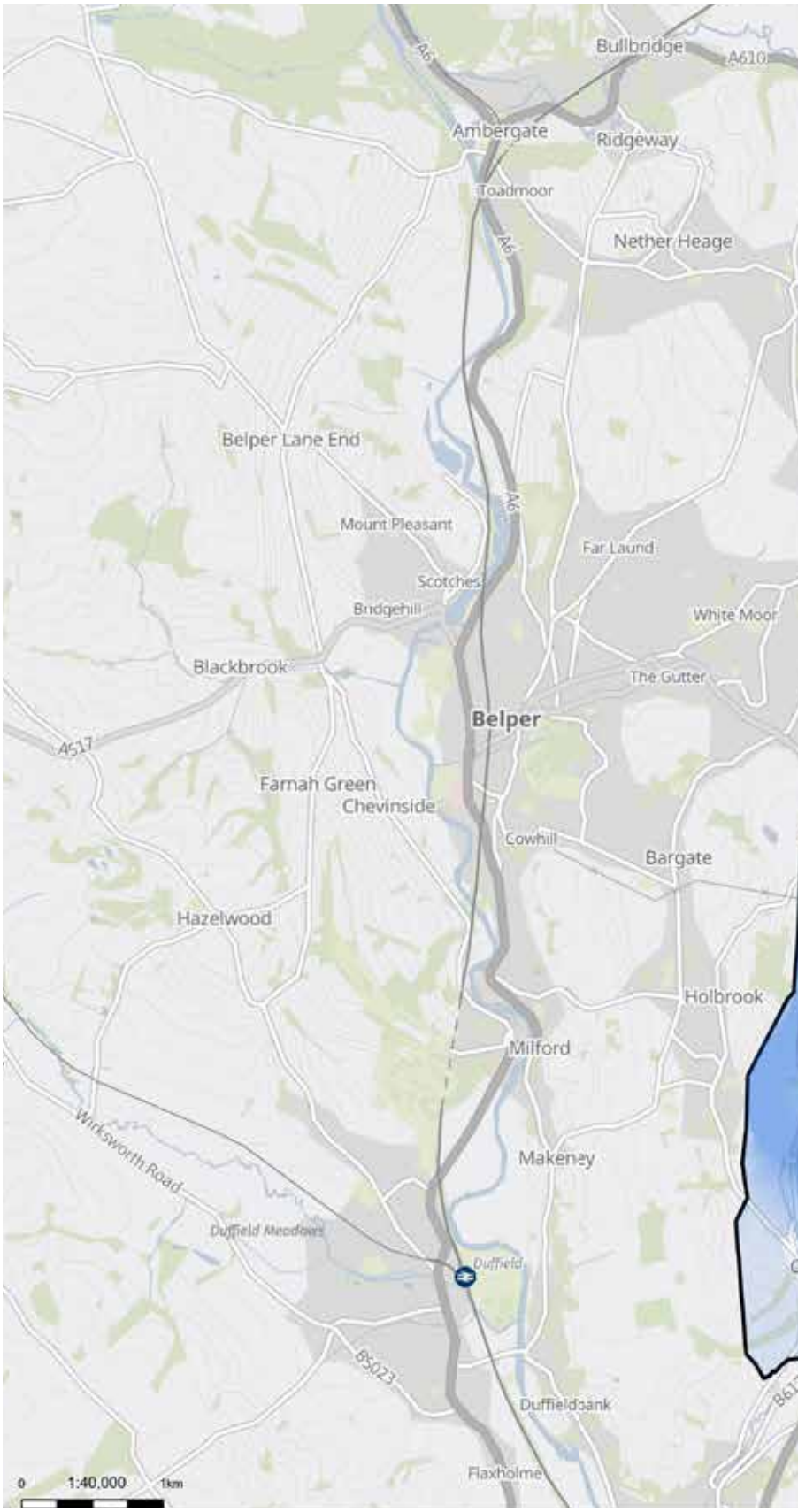
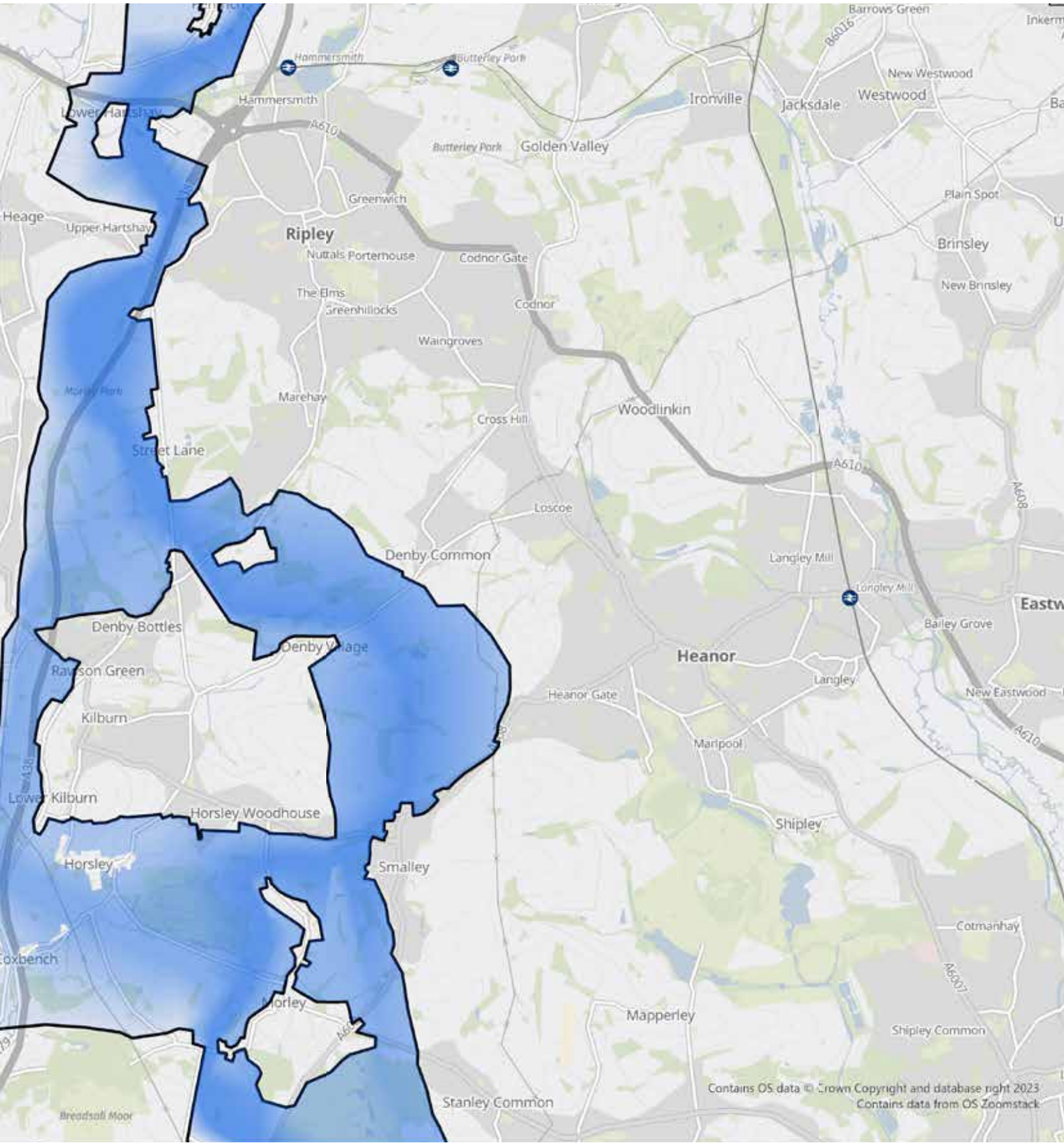


Figure 6: Section 3 of the Emerging Preferred Corridor.


Barrows Green
Hammersmith
Butterley Park
Hammersmith
New Westwood
Ironville
Jacksdale
Westwood
A610
Butterley Park
Golden Valley
Greenwich
Plain Spot
Heage
Upper Hartshay
Ripley
Brinsley
Nuttals Porterhouse
Codnor Gate
New Brinsley
The Elms
Greenhillocks
Codnor
Waingroves
Marehay
Woodlinkin
Cross Hill
Street Lane
A610
Loscoe
A608
Denby Common
Langley Mill
Langley Mill
Bailey Grove
Denby Bottles
Denby Village
Heanor
Ravenson Green
Langley
Heanor Gate
New Eastwood
Kilburn
A610
Marlpool
Lower Kilburn
Horsley Woodhouse
Shipley
Horsley
Smalley
Cotmanhay
Coxbench
A6007
Horley
Mapperley
Shipley Common
Stanley Common
Breadsall Moor
Contains OS data © Crown Copyright and database right 2023
Contains data from OS Zoomstack

Section 4: 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.

Here the corridor consists of a relatively unconstrained area with a preference shown for a more direct path through that seeks to avoid features. In this section the narrowest part of the corridor falls 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 whole width of the corridor and therefore modification to these would be required.

Preference is shown along the western edge of the corridor towards Ockbrook to maintain a direct path while avoiding ancient woodland and retaining sufficient distance from the village.

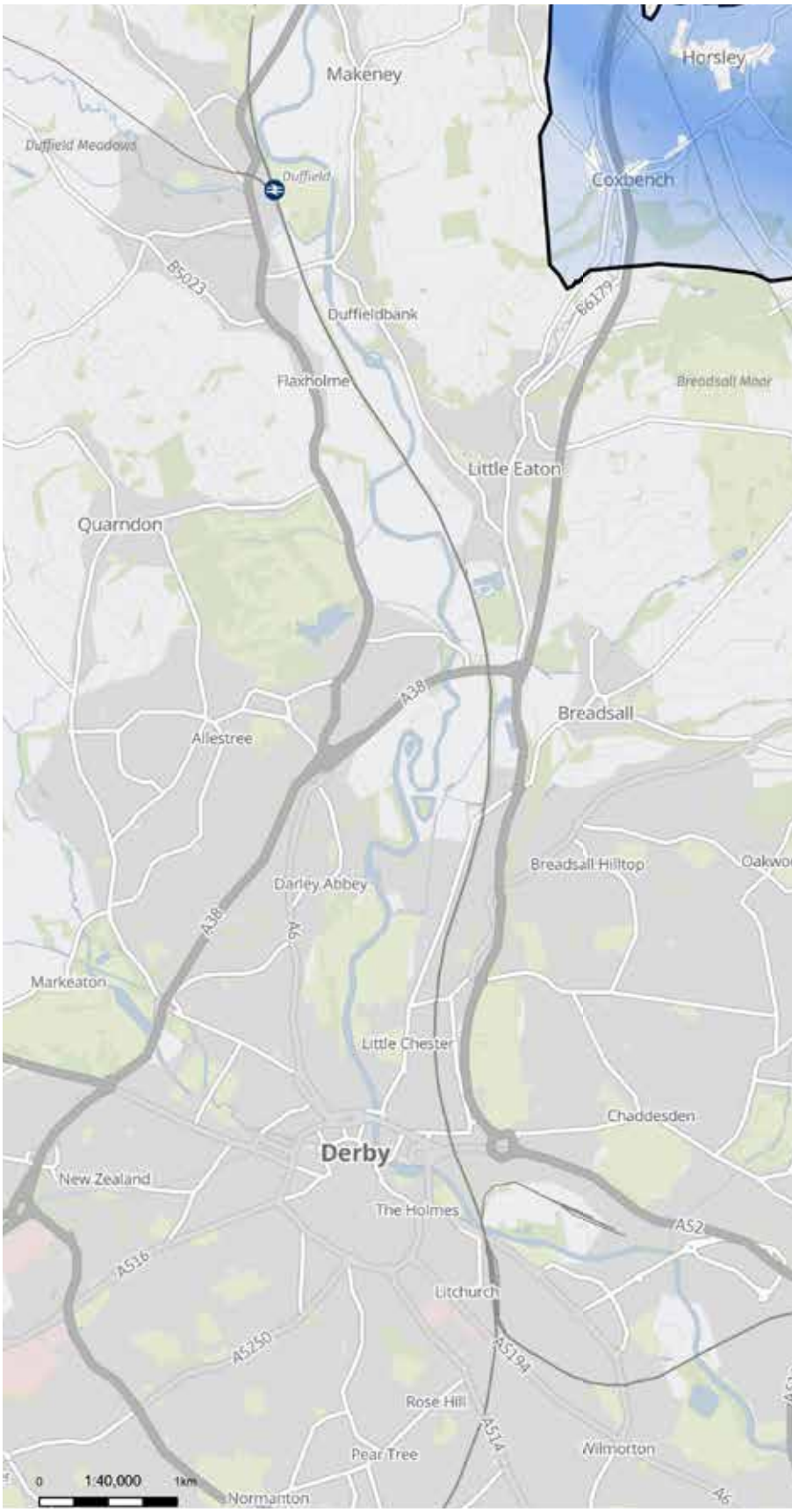
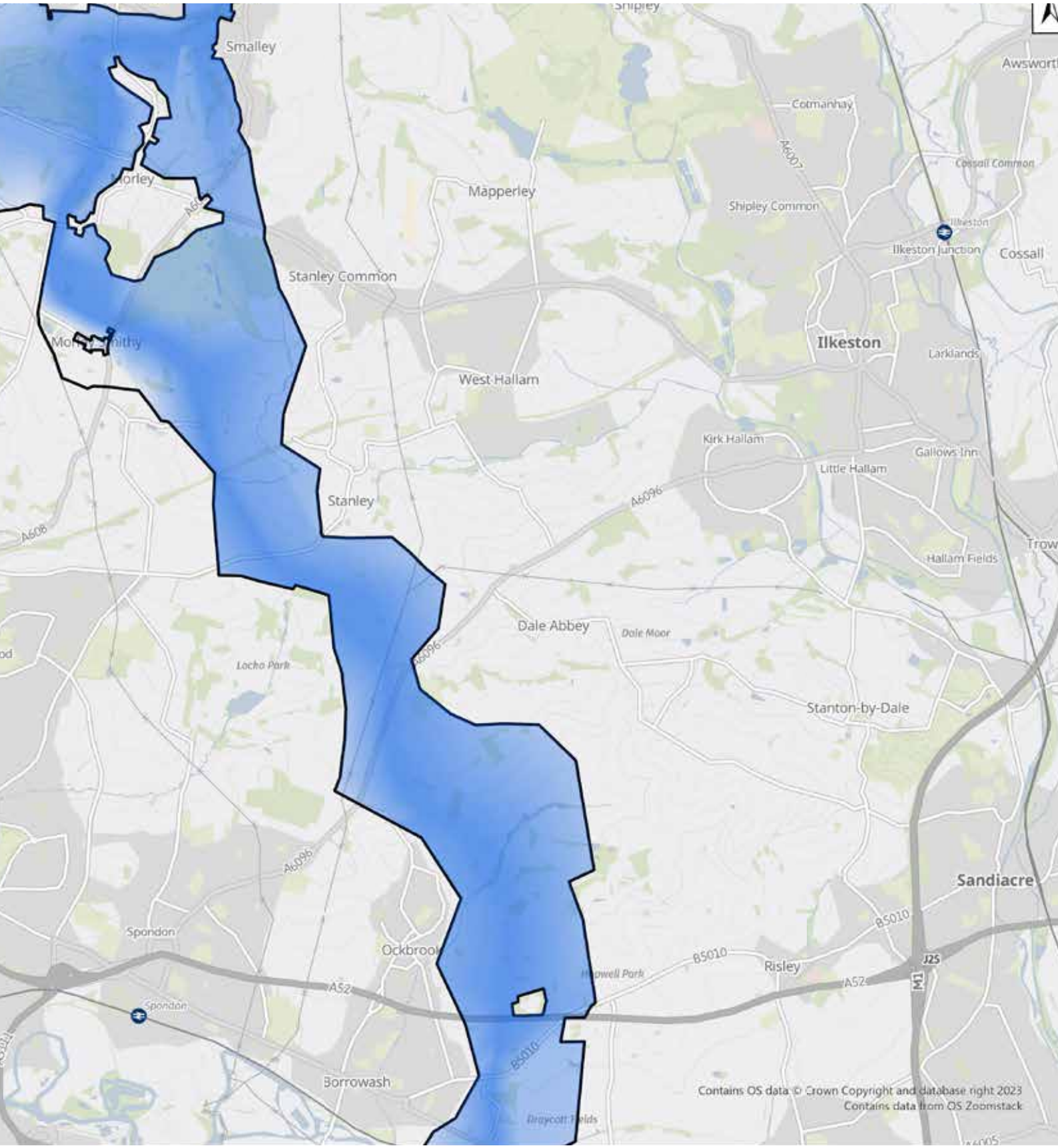


Figure 7: Section 4 of the Emerging Preferred Corridor.


Smalley
Awsworth
Cotmanhay
Cossall Common
Mapperley
Shipley Common
Ilkeston Junction
Cossall
Stanley Common
Ilkeston
Larklands
West Hallam
Kirk Hallam
Gallows Inn
Little Hallam
Stanley
Hallam Fields
Dale Abbey
Dale Moor
Locko Park
Stanton-by-Dale
Sandiacre
Spondon
Ockbrook
Risley
Borrowash
A52
B5010
A6096
A608
J25
M1
Contains OS data © Crown Copyright and database right 2023
Contains data from OS Zoomstack

Section 5: 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 indicates a continuing preference along the western edge of the corridor to maintain a more direct path while maintaining 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 within this section. Preference is shown to the east where it may be possible to avoid potential multiple crossings of the river while also maintaining a distance from Draycott.

South of Ambaston the lighter shaded swathe reflects the presence of a tarmac quarry and mortar plant, with the darker shading either side indicating potential paths to the north of south of them.

Further assessment is required to determine the optimal path within the corridor to cross the A50/A6 road network junction north of Aston-on-Trent. The graduated swathe indicates a relatively wide area in which this may be considered, while seeking to avoid certain landmarks such as Elvaston Castle Country Park. These are located outside of the northern edge of the corridor. Inside the corridor, there are features like the Trent Valley Crematorium, the Aston Brickyard Plantation Local Nature Reserve and edges of Aston-on-Trent, which are shown within the lighter shaded area.

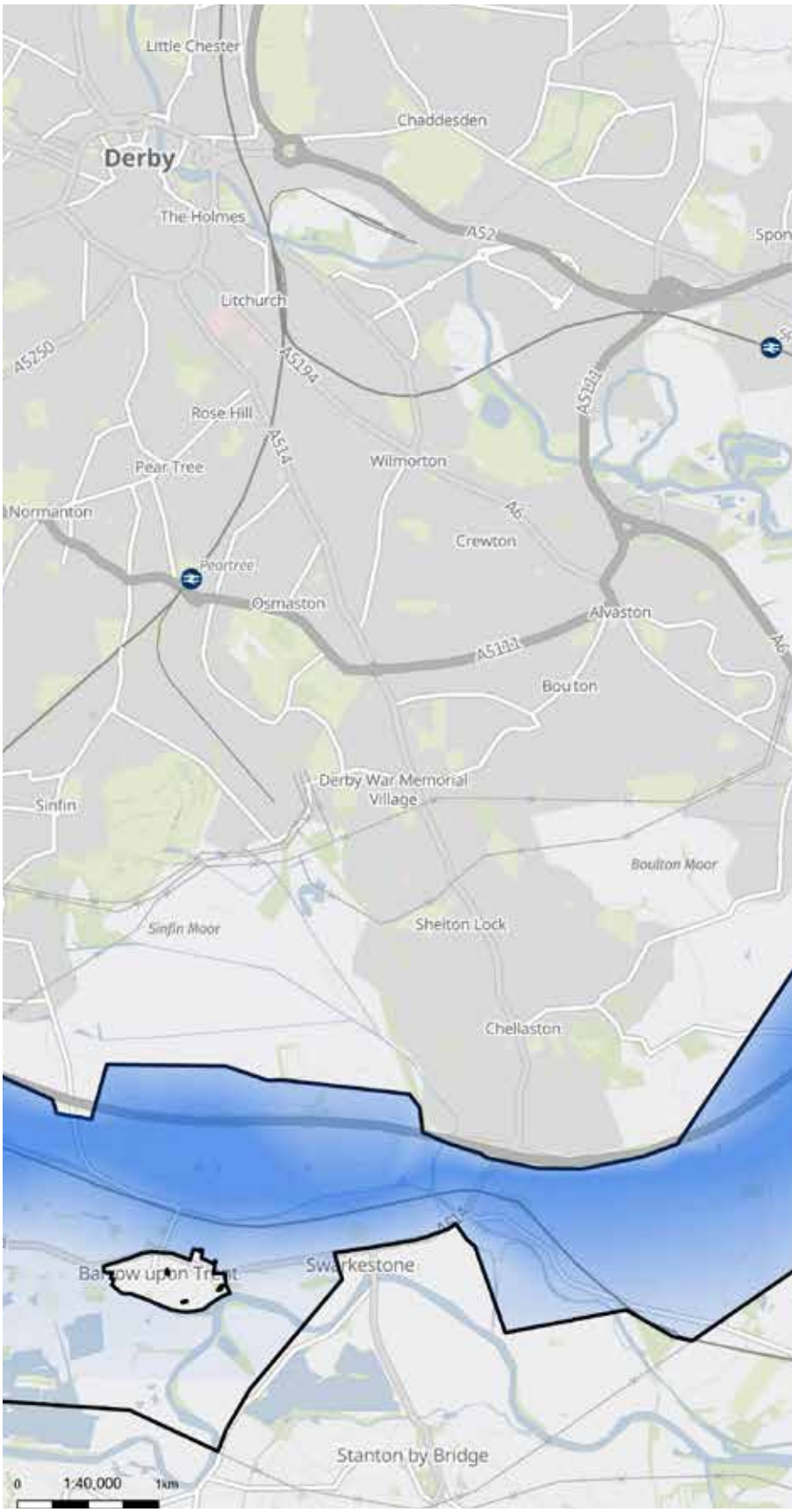
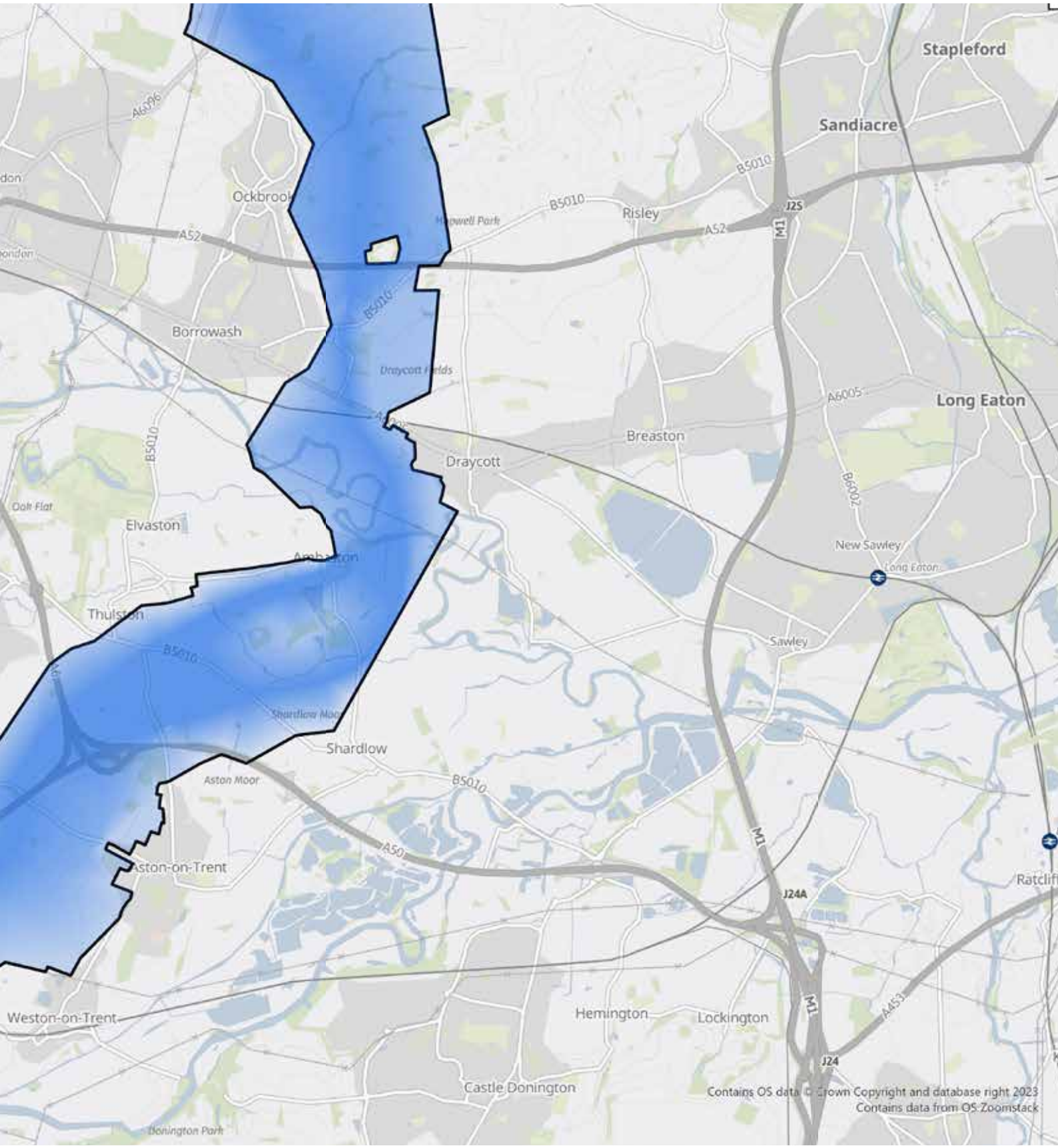


Figure 8: Section 5 of the Emerging Preferred Corridor.


Stapleford
Sandiacre
Ockbrook
Risley
Borrowash
Draycott
Breaston
Long Eaton
Elvaston
New Sawley
Sawley
Shardlow
Aston-on-Trent
Weston-on-Trent
Hemington
Lockington
Castle Donington
Ratcliff
A52
B5010
M1
J25
J24A
J24
A50
A453
A6005
B6002
Contains OS data © Crown Copyright and database right 2023
Contains data from OS Zoomstack

Section 6: 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 towards Swarkestone, a preference is shown along the north of the corridor which provides a more direct path between Chellaston and Swarkestone, seeking to avoid the Trent and Mersey Canal and associated Conservation Area together with the railway line.

As the corridor runs westwards to Willington substation, this preference to the north of the corridor is retained with lighter areas of the swathe reflecting features in the corridor which we could potentially avoid, including Stenson and scheduled monuments (Swarkestone Lows round barrow cemetery and aggregated field system and a settlement site and enclosure adjacent to Frizams Lane/Twyford Road).

It will be important to minimise crossings over the Trent and Mersey Canal and its associated Conservation Area together with the railway line. The swathe indicates a relatively wide area in which we may identify an appropriate crossing. Preference along the north of the corridor seeks to avoid features located south of the A5132 road, including the River Trent and associated Flood Zones 2 and 3 which would likely require more than one crossing, together with 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). Around Barrow-upon-Trent, there are also areas of historic landfill and a sand and gravel quarry which present constraints for potential paths.

There are numerous existing overhead lines on the approach to Willington substation. Two existing 400 kV overhead lines enter the substation from the south and to establish a path here would require substantial work. Entering north of the substation is also constrained by the former power station site, railway line and five 132 kV overhead lines. If the existing lines are not undergrounded, the new overhead line would likely need to enter into Willington East Substation by underground cables to avoid these constraints.

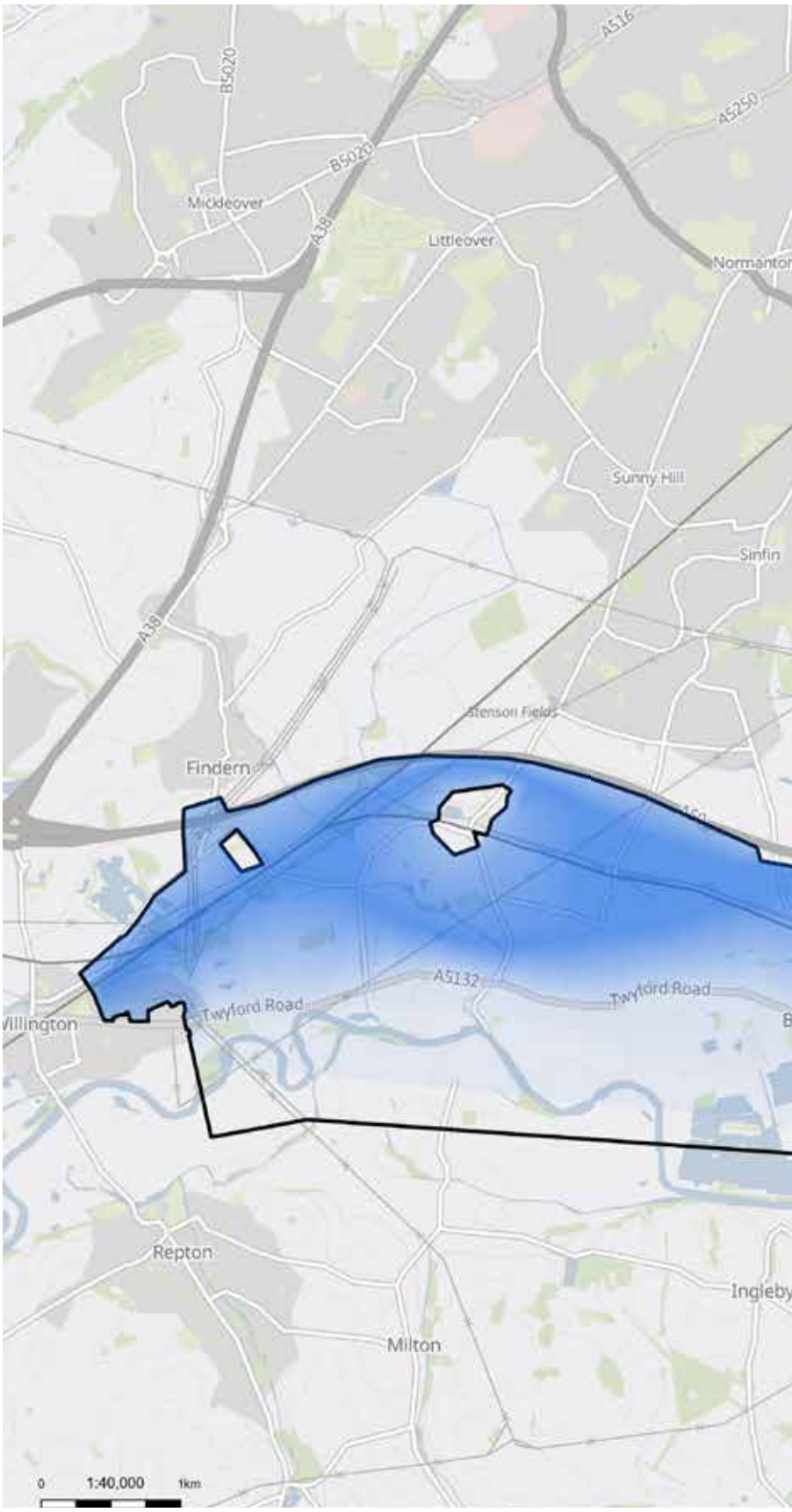
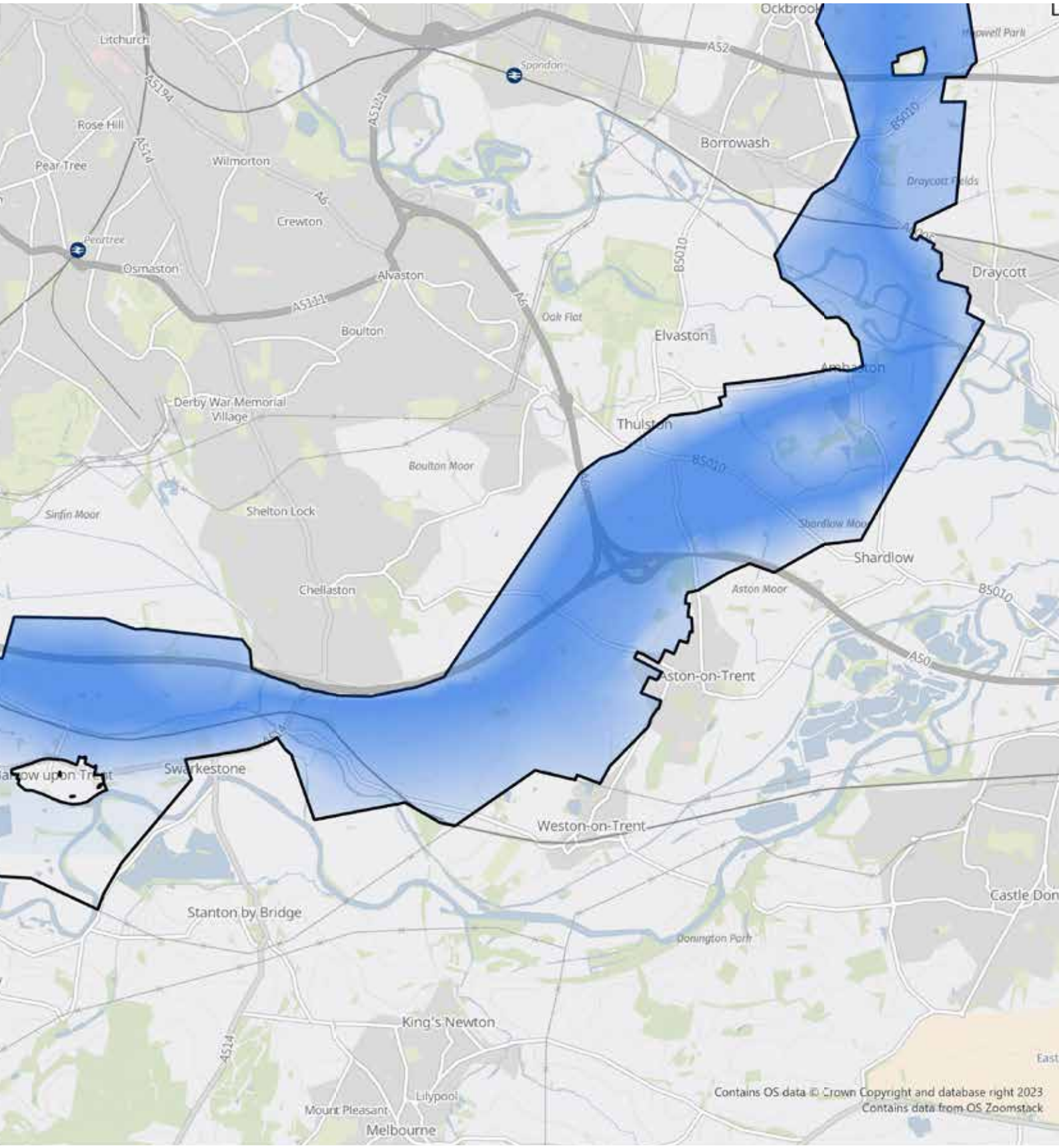


Figure 9: Section 6 of the Emerging Preferred Corridor.


Litchurch
A5194
Rose Hill
A514
Pear Tree
Wilmorton
A6
Crewton
Peartree
Osmaston
A5111
Alvaston
Boulton
Derby War Memorial Village
Sinfin Moor
Shelton Lock
Chellaston
Swarkestone
Stanton by Bridge
King's Newton
A514
Mount Pleasant
Lilypool
Melbourne
A52
Spondon
A5132
Borrowash
B5010
Draycott Fields
Draycott
Oak Flat
Elvaston
Thulston
Boulton Moor
Shardlow Moor
Shardlow
Aston Moor
Aston-on-Trent
Weston-on-Trent
Donington Park
Contains OS data © Crown Copyright and database right 2023
Contains data from OS Zoomstack

Construction

Should Chesterfield to Willington receive development consent, construction is expected start in 2028 and take approximately three years.

As we are at an early stage in the development of proposals for the Chesterfield to Willington project, this section outlines our approach to construction, how we would protect the environment and minimise impact during the construction period.

Before construction starts

- a photographic record would be prepared of the condition of our construction and access areas. This accurate record of the prior condition of land is to ensure land is reinstated appropriately;
- activities will be implemented to mitigate the loss of biodiversity or harm to species and habitats during the course of the construction;
- we will undertake final surveys including ground and archaeological investigations to understand the baseline conditions of the area in which the project will be located and also inform the scheme design;
- it is always our last resort to lop or fell any mature trees, however if it is unavoidable, we will consult with landowners or the appropriate authority if there are preservation orders or the location is within a conservation area;
- should there be any need to carry out works to hedgerows, this will be discussed with landowners, occupiers and local authorities. Ecological surveys will ensure wildlife is not harmed or affected by the removal of hedgerows;
- we would develop a Construction Traffic Management Plan which will include Road Safety Audits on sections of highway that would provide access to the proposed construction areas; and
- when we develop new infrastructure, we seek to reduce the effect of our work on communities, particularly in regard to noise. We adhere to environmental and sustainability standards and follow the code of practice for noise and vibration control on construction and open sites.

Constructing the overhead electricity line

- construction of an overhead electricity line usually begins with creating access to the pylon locations. To do this, we'll agree an access route to the location and if appropriate, trackway or a haul road will be laid from the nearest access point;
- once established, we will install working platforms at the pylon location to facilitate construction of foundations and erection of the pylon structure;
- steelwork for the pylons will arrive in prefabricated kits, assembled into sections on-site and erected by crane;
- once the pylon is constructed, the overhead line conductors (cables) which are stored on large drums will be strung in sections, a process referred to as tension stringing whereby the conductor is winched from pylon to pylon between pulling positions. At locations where the overhead line intersects existing infrastructure (e.g. highway or railways) temporary works such as scaffolding would be installed for crossing protection to allow the continued, safe operation of those assets during the stringing activity;

Example of new overhead line cables stored on drums for illustrative purposes only.

- we may require additional land areas for welfare facilities, security cabins storage compounds for plant, equipment or materials, or where the construction must navigate challenging areas;
- we will implement best practice approaches to minimise land damage and suitable storage of soils during construction;
- construction areas will be strictly managed and are well fenced off to ensure the safety of people, livestock and wildlife; and
- traffic management will be adopted where construction activities interface with the public highway.

Post construction

- roads and footpaths will be reinstated to their original condition as far as reasonably practicable following completion of the main construction works;
- we will remove work areas and access routes after construction unless otherwise agreed with landowners;
- we will reinstate agricultural land to the pre-works condition as far as reasonably possible to the satisfaction of the landowner and occupier;
- any fences and walls we remove during construction will be reinstated; and
- we will replace the planting of trees and hedgerows.

Construction management

Designing a construction plan that limits impact on the environment and communities will be a key part of our development process. We will put in place a number of management plans such as a Code of Construction Practice and an Ecology and Landscape Management Plan to limit the disturbance and manage the construction works. Contractors that undertake work on behalf of National Grid will be required to follow strict measures and controls to manage the potential environmental impacts of construction such as dust, noise and lighting.

Archaeologists and ecologists will support the project during construction where necessary. This will help to ensure the works are managed in a sensitive way and protect the local environment.

We will be able to share more detail on construction methods, likely impacts (both temporary and permanent) and impact mitigations at the next stage of consultation when we have refined our proposals in light of consultation feedback, technical assessments and environmental surveys.

Managing and mitigating effects

Chesterfield to Willington is classed as a Nationally Significant Infrastructure Project (NSIP). Environmental considerations and minimising negative impacts are key as we develop our proposals in line with Development Consent Order regulations.

An integral part of the development process is the preparation of an Environmental Impact Assessment (EIA). This evaluates the project's potential environmental effects and outlines strategies to mitigate adverse impacts. The EIA includes detailed analyses of various aspects, such as air quality, noise pollution, habitat disruption and visual impacts.

Based on the findings of the EIA, we will develop mitigation and management measures to avoid, minimise, or compensate for adverse environmental impacts. These measures may include habitat restoration, noise barriers, pollution control technologies, community engagement programmes and environmental monitoring systems.

Our commitment also extends to the environment where we carefully consider factors such as Biodiversity Net Gain (BNG). The Environment Act of 2021 mandates a minimum 10 per cent BNG for new developments, to ensure they contribute positively to biodiversity enhancement. We will conduct a BNG assessment as part of our Development Consent Order process, which outlines biodiversity proposals such as species planting and other mitigation measures to achieve a minimum 10 per cent BNG. Integrating these considerations into our processes will help us achieve a balanced approach that harmonises development with community wellbeing and environmental preservation.

Information for landowners

When we develop proposals for network upgrades, we need to understand who has a legal interest in the land in and around the areas that are being considered as part of the proposed reinforcement.

In the Development Consent Order planning process, anyone with a legal interest in land is known as a Person with an Interest in Land (PIL). We will contact you directly if you are identifed as a PIL.

While much of the information we need to confirm a legal interest on is available on public registers, we've appointed the Lands Team at Ardent to contact individual landowners to verify the publicly available information and ensure we've made diligent enquiries.

Ardent will also assist with contacting landowners and occupiers to arrange access for non-intrusive and intrusive surveys which we will carry out throughout the development process.

More detailed information for landowners, along with contact information, can be found on the Landowner page of our project website.

If you are a landowner and want to talk to our lands team, please:

Email: **chesterfield-willington@ardent-management.com.**

Call: **0203 489 9414.**

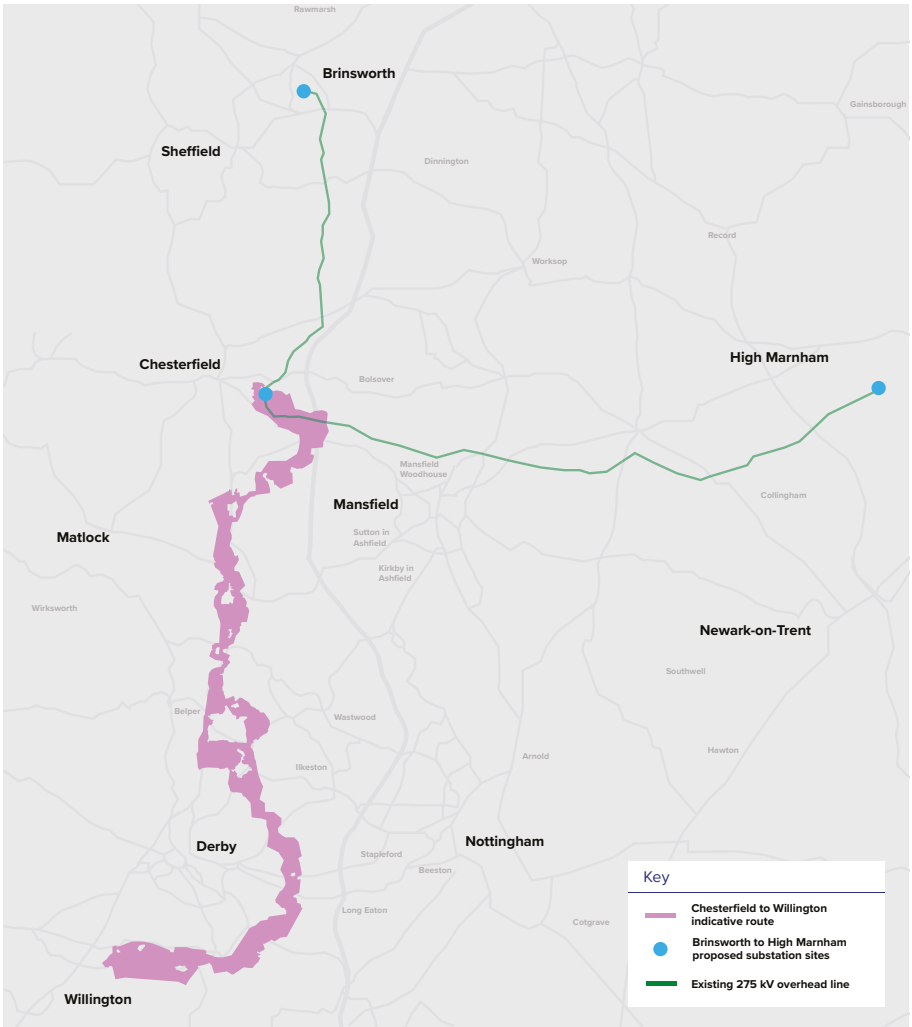
Write: **The Lands Team at Ardent, 36-38 Botolph Lane, London EC3R 8DE.**

Coordination with other projects projects in the area

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 substations and upgrading would transport clean energy from the North of England to homes and businesses in the Midlands and play an important role in building a more secure and resilient future energy system.

With two projects simultaneously underway in the same area, we will actively strive to coordinate activities where possible. We will work 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.



Indicative route of the Chesterfield to Willington project.

Have your say

This Stage 1 consultation closes at 11:59pm on Tuesday 17 September 2024. We want to hear the views of local communities near the proposed project proposals. Please ensure your feedback is submitted by this date.

You can take part in the consultation and provide feedback in a number of ways. We will carefully consider all feedback we receive as part of this consultation as we prepare more detailed proposals ahead of a further (final) stage of public consultation in 2025 before we submit our Development Consent Order application.

Following this stage of consultation, we will provide an update to outline the key themes raised in the feedback we have received, along with our responses.

How to respond

Complete a feedback form
You can complete a form online at **nationalgrid.com/chesterfieldtowillington.**

Alternatively, paper copies are available to pick up from the local information points and at our events.

Email us
If you prefer to send us your comments via email, you can send them to us at **chesterfield-willington@nationalgrid.com**.

Send us a letter
You can send us a letter or completed feedback form at no cost via our freepost address **FREEPOST NATIONAL GRID PROJECTS (JBP)** - no stamp or further address is needed.

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

Next steps

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 of consultation;
- 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. At which point we will present the preliminary environmental information that has been collected and assessed, along with the measures that may be required to avoid, prevent, reduce and mitigate any residual environmental effects. This will be our final stage of consultation before we submit our Development Consent Order application.

Following further development and finalisation of detailed proposals, we will submit our application to the Planning Inspectorate. This will include a Consultation Report to show how we have had regard to the feedback we have received. The Planning Inspectorate will examine our proposals and make a recommendation on the application to the Secretary of State for the Department of Energy Security and Net Zero, who will make the final decision on whether to grant consent.

View all Stage 1 consultation material

Scan the QR code to be directed to our website. Here you can view all consultation materials, our interactive map and register for our webinars.

Contact us

Please get in touch if you have any questions about our Chesterfield to Willington proposals.

.

Call our freephone 0800 073 1047, lines are open Monday to Friday between 9am-5:30pm

Email us:
chesterfield-willington@nationalgrid.com.

Write to us:
FREEPOST NATIONAL GRID PROJECTS (JBP) - no stamp or further address is needed.

Information for landowners

If you feel your land may be affected by these proposals, our dedicated Chesterfield to Willington lands team will speak with you. You can contact them by emailing **chesterfield-willington@ardent-management.com**, calling on **0203 489 9414** or writing to **The Lands Team at Ardent, 36-38 Botolph Lane, London EC3R 8DE**. You can also refer to the Information for landowners' section on page 43.

National Grid plc
1-3 The Strand
Charing Cross
London
WC2N 5EH
United Kingdom

nationalgrid.com