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PROJECT

FINAL

REPORT

Midlands Regional Transport Hubs

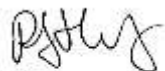
Midlands Energy Hub

27th November 2020

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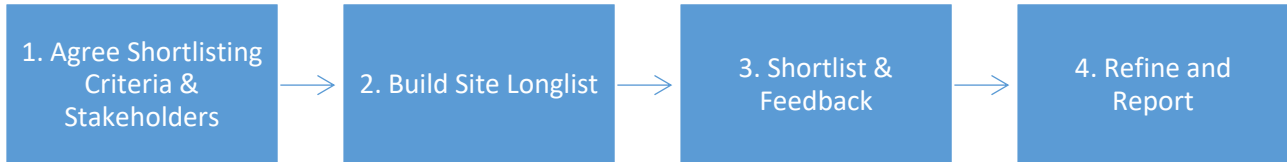
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Executive Summary

Cenex was commissioned by Coventry City Council to create a high-level concept and outline strategic case for a combined transport and energy hub. Following this focused piece of work, the Midlands Energy Hub (MEH) requested that a further Midlands-wide search be completed to identify and rank potential sites for similar hubs.

A four-stage process was completed with input and feedback at each step from the client team and their stakeholders:



A set of 5 required and 5 ideal criteria were agreed and applied to a suite of open-access datasets and stakeholder input to create a longlist of 50 potential sites across the region. Each site was evaluated in detail against weighted combinations of the agreed criteria to produce a shortlist of the top-three ranked sites by LEP.

These are presented in Section 3.2 (page 16) and have been circulated for feedback and approval with the MEH team.

A further round of analysis took a regional perspective to mitigate the risk that a LEP-by-LEP view may not distribute sites as evenly as a holistic analysis. This found that only three of the 27 top-three sites by LEP were not in the region's top-27 sites.

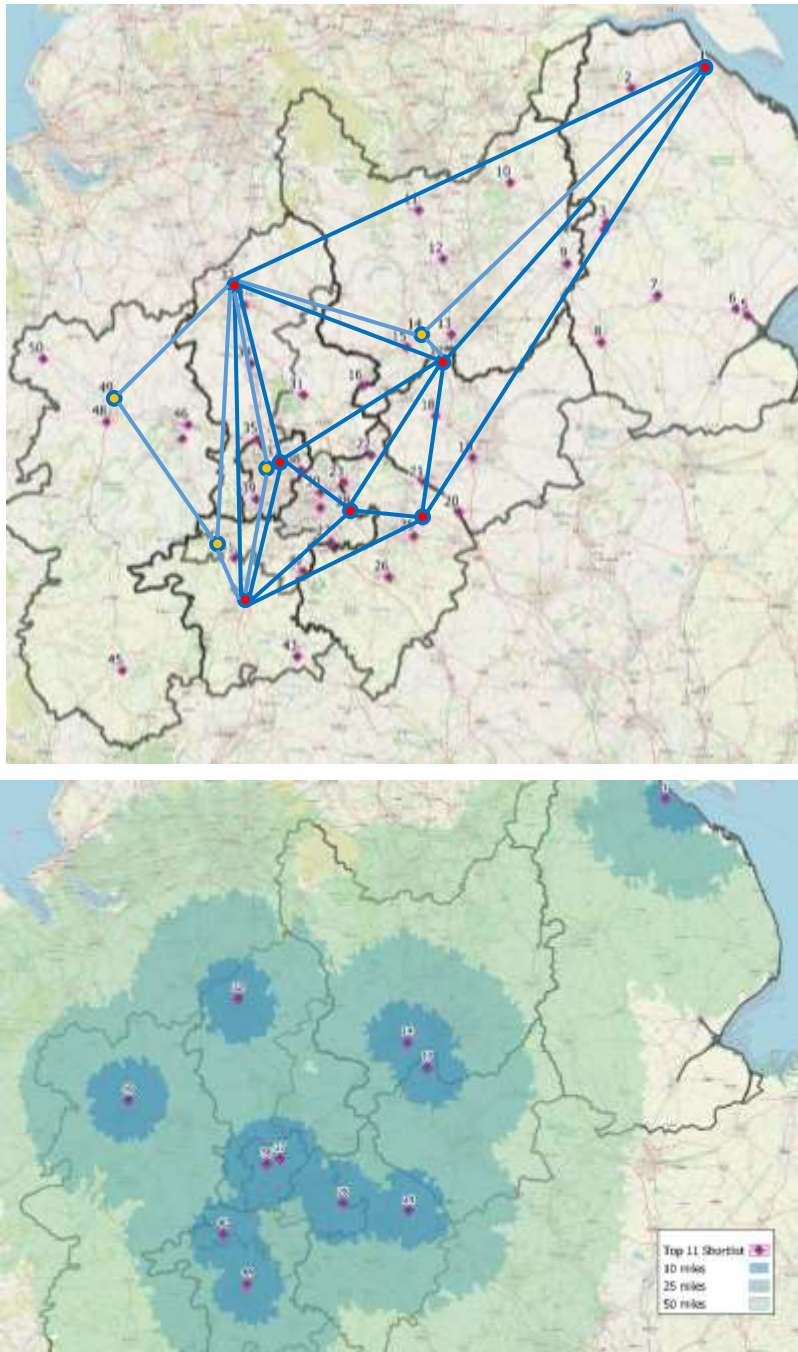
Furthermore, comparison between the top-ranked sites in each LEP and the top-9 sites across the region found 7 sites common to both shortlists, which gave further confidence in the aforementioned results:



Pursuing these sites to form the backbone of a growing set of hubs would produce a network spanning the whole Midlands with at least one priority site in each LEP, as shown in the map on the next page.

The second image shows that these would ensure that the vast majority of Midlands residents were within 50 miles and a significant majority within 25 miles of a potential hub, with the exception of southeast Lincolnshire.

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It is recommended that each of these sites are discussed in detail with relevant contacts and site-specific engagement is conducted with key stakeholders on land ownership, electrical supply and the potential business case for the key next steps. This will allow the analysis of the top-ranking sites to be refined as well as the momentum and local support more clearly understood, which must feed into future iterations of the potential Midlands-wide network.

The outputs presented are the result of analysis in Autumn 2020. The ongoing development of the Midlands inevitably means that the precise scoring that each site received will change over time. Thus these recommendations are 'frozen' in time and will not account for future development and upgrades. The underlying ranking and analysis spreadsheets have been provided to MEH to support any future revisions of the analysis.

1 Introduction

1.1 Introduction to Cenex

Cenex was established in 2005 as the UK's first Centre of Excellence for Low Carbon and Fuel Cell technologies.

Today, Cenex operates as an independent, not-for-profit consultancy specialising in the delivery of projects, supporting innovation and market development, focused on low carbon vehicles and associated energy infrastructure.

We highly value our independence as it allows us to provide impartial advice and helps us build trust with our customers.

Being a not-for-profit, Cenex isn't driven by doing the work which pays the most or builds our order book, but by what is right for our customers and for the industry. This is reflected in everything we do, from the work we do and the advice we give, even to the prices we charge.

Finally, as consultants our aim is to be trusted advisors with expert knowledge – the go-to source of help and support for public and private sector organisations. We want to be people you can trust to help where and when it is most needed as our customers progress along their journey to a zero-carbon future.

To find out more about us and the work that we do, visit our website:

www.cenex.co.uk



1.2 Context

Electric Vehicles (EVs) are a central part of the UK's national industrial strategy to transition to zero-emission road transport as outlined in its Road to Zero strategy document published in 2018¹. One of the headline aims is the end of the sale of new petrol and diesel vehicles by 2040, although the Government is currently consulting on expanding the ban to include new hybrids and bringing the date forward to 2035 or possibly sooner².

One of the most commonly-reported barriers to the widespread adoption of EVs is the lack of charging infrastructure³. In the absence of public chargepoints, individuals may feel that the risk of an EV running out of charge, particularly on longer journeys, is too great – often referred to as “range anxiety”.

Looking outside of the private use of cars and vans to heavier vehicles such as freight, logistics or public transport, there will also be a need for infrastructure and services to support the decarbonisation and growth of the local and regional economy, supporting the UK's national transition to net-zero by 2050.

Combined transport and energy hubs help (referred-to as ‘hubs’ in this report) address these issues and provide the infrastructure needed for a range of vehicle types and use cases.

Providing high-power EV charging hubs will give individuals and businesses greater confidence to purchase EVs, contributing to the reduction of carbon and pollutant emissions. By coordinating with the large planned quantity of publicly available EV charging infrastructure, the high-powered hubs and local provision should ensure residents without off-street parking have a reliable means to refuel an electric vehicle, reducing the inequity between residents with and without off-street parking.

Coupling EV charging with on-site energy infrastructure (e.g. solar panels, battery storage) can support the grid, reduce the operating costs of the site, and further reduce “well-to-wheel” carbon emissions.

By clustering reliable, easy-to-use charging infrastructure into hubs, traffic flow can also be influenced; coupling hubs with public transport can give an additional incentive for motorists not to drive into urban centres, therefore reducing congestion and local air pollution.

Road freight vehicles are particularly challenging area of transport to decarbonise. Providing a variety of recharging and alternative low-carbon refuelling infrastructure at a hub site can help support the transition of these vehicles to low-emission alternatives. A hub could also support a low-carbon ‘last mile’ solution for goods being transported to local urban areas.

1.3 Introduction to the Project

This project picks up these themes and builds on existing work complete by Cenex for Coventry City Council (CCC), which has identified a plot of land at Anstey Park suitable for constructing a multimodal transport hub. This is proposed to include a Park & Ride, a freight consolidation centre, an extension to the Coventry Very Light Rail Scheme, and EV charging (for private and commercial vehicles, and buses).

The site has scope to attract companies to invest in transport services as well as supporting infrastructure, such as EV charging, renewable electricity generation, battery energy storage, catering and retail services, and the potential for other alternative fuels storage and retail.

¹ <https://www.gov.uk/government/publications/reducing-emissions-from-road-transport-road-to-zero-strategy>, accessed 27th October 2020.

² <https://www.gov.uk/government/consultations/consulting-on-ending-the-sale-of-new-petrol-diesel-and-hybrid-cars-and-vans>, accessed 4th November 2020.

³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/551446/electric-vehicles-survey-2016.pdf; page 7 gives ONS data on factors deterring people from buying an EV, accessed 4th November 2020.

Cenex has provided support to develop the concept and an outline business case for the mobility hub at Anstey Park.

! Further details of the Anstey Park scheme can be found in the reports delivered to CCC, including more detailed definitions of what a combined transport and energy hub is, and some of the potential benefits to the locality and region.

This project is an extension and generalisation of the initial groundwork completed for the Anstey Park proposal. CCC have partnered with the Midlands Energy Hub to commission Cenex to identify additional potential sites for similar combined mobility and energy hubs across the Midlands, with the aim of highlighting options for a strategic network of these multimodal transport hubs across the Midlands.

1.4 Purpose of this report

This report outlines the work completed in this extension, also referred-to as “Work Package 3” and “Work Package 4” within the overall commission.

The following sections first outline the methodology to identify sites and the ranking process to narrow down the longlist into a shortlist. They then present all the longlisted sites across the Midlands which were identified as being feasible for the implementation of a transport hub and highlight the final shortlisted sites for each LEP region with descriptions of the reasons why these sites achieved the highest rankings.

Where applicable, more detailed results are found in the relevant appendices, for reference. Mapping files and the ranking system are included in the supporting documentation accompanying this report.

1.5 Overall approach

Figure 1 shows the four project phases. Each phase took approximately 3 weeks to allow for research and analysis before feedback was sought from the Midlands Energy Hub team.

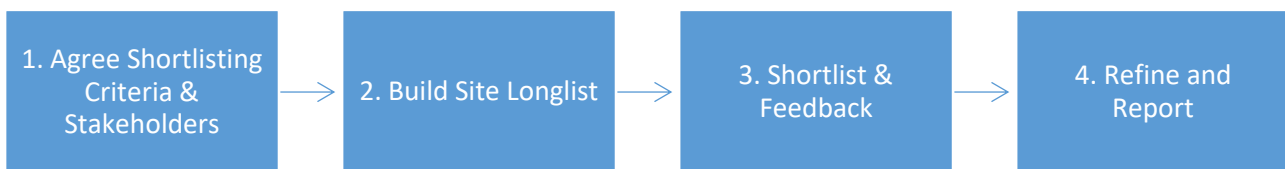


Figure 1: Overview of the four phases of the project

In the first stage, proposed criteria for selecting potential sites was reviewed and agreed upon by Midlands Energy Hub (MEH) representatives from each Local Enterprise Partnership (LEP).

Following this, sites were identified in stage 2 across the Midlands using QGIS mapping software, a variety of open-source data sources, intelligence gathered by Cenex from previous work in the region and the MEH officers’ local knowledge.

After approval of the longlist by MEH representatives, the shortlisting criteria were applied to narrow the longlist to a shortlist in stage 3. This was again presented, with feedback from MEH officers on behalf of each LEP considered to ensure local knowledge was considered with the selection of sites.

Lastly, this report is the result of stage 4. It sets out the methods and assumptions which guided this process, followed by the results, along with appropriate commentary and recommendations to support the Executive Summary.

1.6 Navigation

Key conclusions, recommendations or takeaways are highlighted like this.

! Important notes are highlighted like this.

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Abbreviations are expanded in Section 5 (page 39).

2 Methodology

This section presents the site selection criteria, longlisting process and shortlisting process.

2.1 Criteria

In stage 1 of the project, a set of criteria were proposed to the MEH team. Figure 2 displays the final agreed criteria, colour-coded as required (dark blue) or ideal (lighter blue):

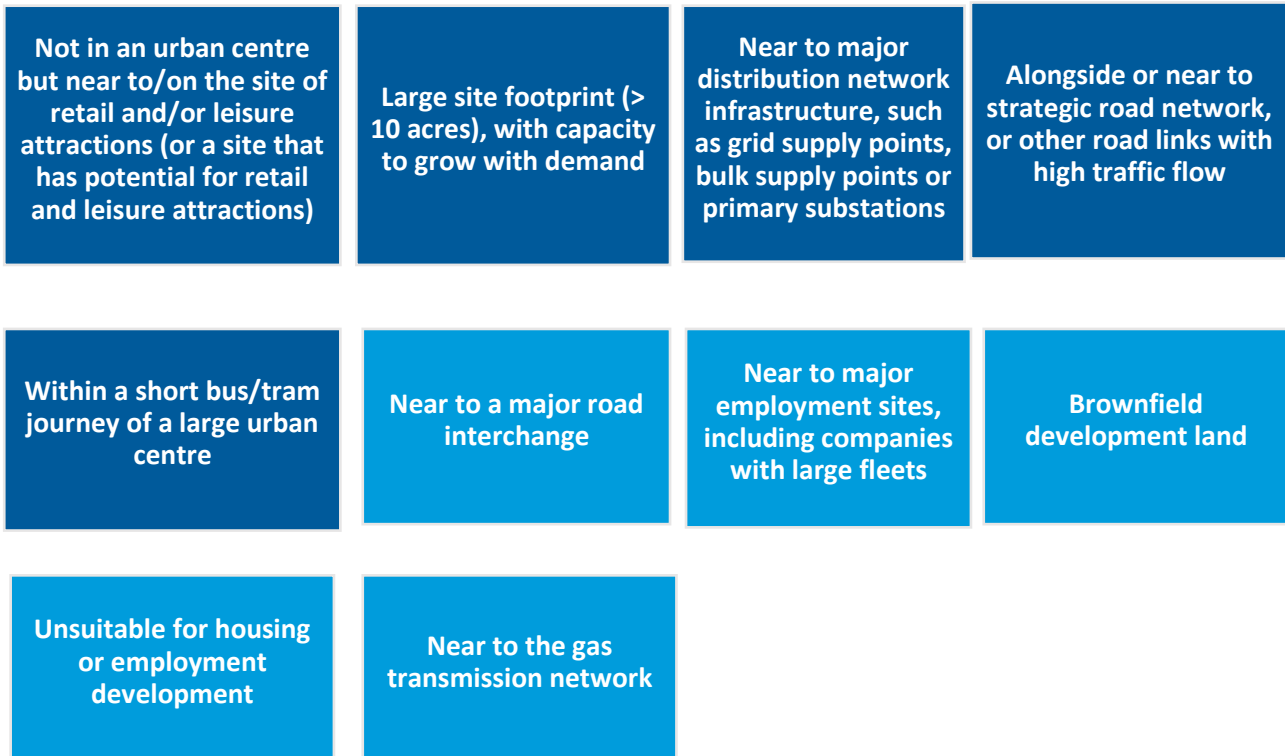


Figure 2: Criteria for transport hub site selection

The required criteria (dark blue) reflect the prior work completed for CCC and particularly that potential hub sites have to balance two key factors. Firstly, they should be close enough to destinations and high footfall attractions to serve them and have a positive environmental, congestion and economic impact. Yet they must also be sufficiently outside of urban areas in particular to divert traffic away from already congested areas. Therefore, sites were sought which were close but not too close, were well connected in terms of public transport and had the space to support all the infrastructure anticipated to be needed. On top of this, access to the Strategic Road Network (SRN) is essential, to enable sufficient demand for the proposed services and extend the impact of the hub regionally. Furthermore, site must be close to major electricity grid nodes to enable sufficient power to be brought on-site.

On top of this, the ideal criteria (lighter blue) allowed for some diversity between the sites. Although not critical, the work for CCC identified that these are important nonetheless. Sites with access to major road interchanges are likely to be less capital-intensive to deliver. Sites with major employment sites or large fleets might find these a source of early, reliable demand for their infrastructure. Brownfield land marked for development which is not suitable for housing or employment expansion would also be idea. And lastly, looking to the possible future hydrogen economy, proximity to the gas transmission network was also seen to be an ideal factor.

! These criteria and their level of importance (required or ideal) were agreed with the MEH team in the stage 1 update meeting on 19th August 2020.

2.2 Longlisting

In stage 2 of the project, an exercise was undertaken to use the required criteria to identify potential hub sites through map analysis and from suggestions received from the LEP representatives.

The following data sets were included in the mapping work:

- Open Street Map data on retail, commercial, and industrial sites narrowed down to the top ten largest sites of each category in each LEP⁴;
- Department for Transport SRN traffic flow⁵. Traffic flow data was linked to the major road to which it corresponded in the shapefile, and graduated according to the number of vehicle counts to highlight on the map the roads with the greatest traffic flow;
- Western Power Distribution⁶ and Northern Power Grid⁷ distribution network infrastructure such as primary substations, grid supply points and bulk supply points;
- Open Street Map data on land classified as brownfield⁴; and
- National Grid data on the gas transmission network, in particular high pressure gas pipes and gas sites such as compressor stations⁸.

Open Street Map (OSM) data are freely available and, in most localities, it contains a large array of accurate datapoints. Cenex has used this dataset without major problems in a number of projects, finding it to be a rich source, especially where other sources are disparate or incomplete.

! It should be noted that as an open dataset that can be edited by any individual, it is impossible to entirely guarantee the accuracy of the data from OSM. From Cenex’s experience conducting infrastructure strategy projects, the data have correlated well to-date with local knowledge and council datasets.

2.3 Weighting and Shortlisting

In stage 3 of the project, each site was evaluated in detail against weighted combinations of the agreed criteria as shown in Table 1:

Table 1: Criteria categories with the initial proposed weighting

Category	Included criteria	Initial weighting
Attraction	Number of retail / commercial / leisure / industrial sites nearby	2
Interchange	Local traffic flow + distance to interchange	2
Site Area	Size of site + brownfield/greenfield + marked for development	1.5
Public Transport	Existing or not	1.5
Substation	Distance to substation + complexity of cable run	1
Suitability	Suitability for housing / employment development or not	1
Gas Network	Distance to high-pressure gas main	0.5

⁴ <https://www.openstreetmap.org/about>

⁵ <https://roadtraffic.dft.gov.uk/downloads>

⁶ <https://www.westernpower.co.uk/our-network/network-capacity-map/>

⁷ <https://www.northernpowergrid.com/demand-availability-map>

⁸ <https://www.nationalgrid.com/uk/gas-transmission/land-and-assets/network-route-maps>

The rationale for the weightings is as follows:

Attraction:

Sites with a greater variety of attractions nearby were ranked higher, as this increases the number of different users who might visit the area and subsequently make use of a mobility hub located there.

Interchange:

The traffic flow at the nearest major interchange was calculated and divided by the distance from the proposed site to the interchange. Sites with a higher traffic flow and closer proximity to a major junction were ranked higher.

Site Area:

Sites on brownfield land with significant room for development (<20 acres) were ranked highest, followed by brownfield sites that were more constrained in terms of area (10 – 20 acres). Sites that are already marked for development (as indicated in talks with MEH representatives) were also ranked highly, whether brownfield or not. Sites on greenfield land were then also ranked similarly according to their area. Due to the nature of the mapping process (the area of a site not being calculated until all potential sites had been identified), some sites that appear to be less than 10 acres in area were included in the longlist; these were given the lowest ranking.

Public Transport:

Sites with existing public transport links were ranked higher than those without due to the ease of connecting the site to nearby amenities.

Substation:

Sites were ranked higher the closer they were to a substation and the lower the complexity of a cable run between the site and the substation for any required distribution network upgrade works. The cable run was considered less complex if the substation was on-site or across greenfield land, and more complex if required to cross major roads or even cross a whole town.

Suitability:

Sites which were deemed unsuitable for housing or employment development, for example, those next to a motorway, were ranked higher than those where it was deemed feasible for such developments.

Gas Network:

Sites that were located within a couple of miles of the gas transmission network were ranked higher than those that were not.

! The ranking and weighting method outlined above is built into the accompanying spreadsheet to allow the MEH team to draw further conclusions from this work.

The weightings shown were based upon the prior work completed for CCC and agreed by a group of Cenex technical specialists from the Energy Systems and Infrastructure team. They were circulated for approval by the MEH team following the update meeting on 29th September 2020.

The weighting of the criteria enabled the top-three sites from each LEP to be shortlisted. These are presented in the maps included in Section 3.2.

Further work could be done to refine the weightings with inputs from a greater number of stakeholders and/or explore the sensitivity of the results presented, below, to the weighting system.

3 Results

3.1 Longlist

A total of 50 sites across the Midlands were identified as potential sites and included in the longlist according to the method outlined in Section 2.2. Figure 3 shows all the sites that were identified in this initial stage of the process. The full list of sites corresponding to the numbers displayed on the map and descriptions of their suitability can be found in Appendix A (page 40).

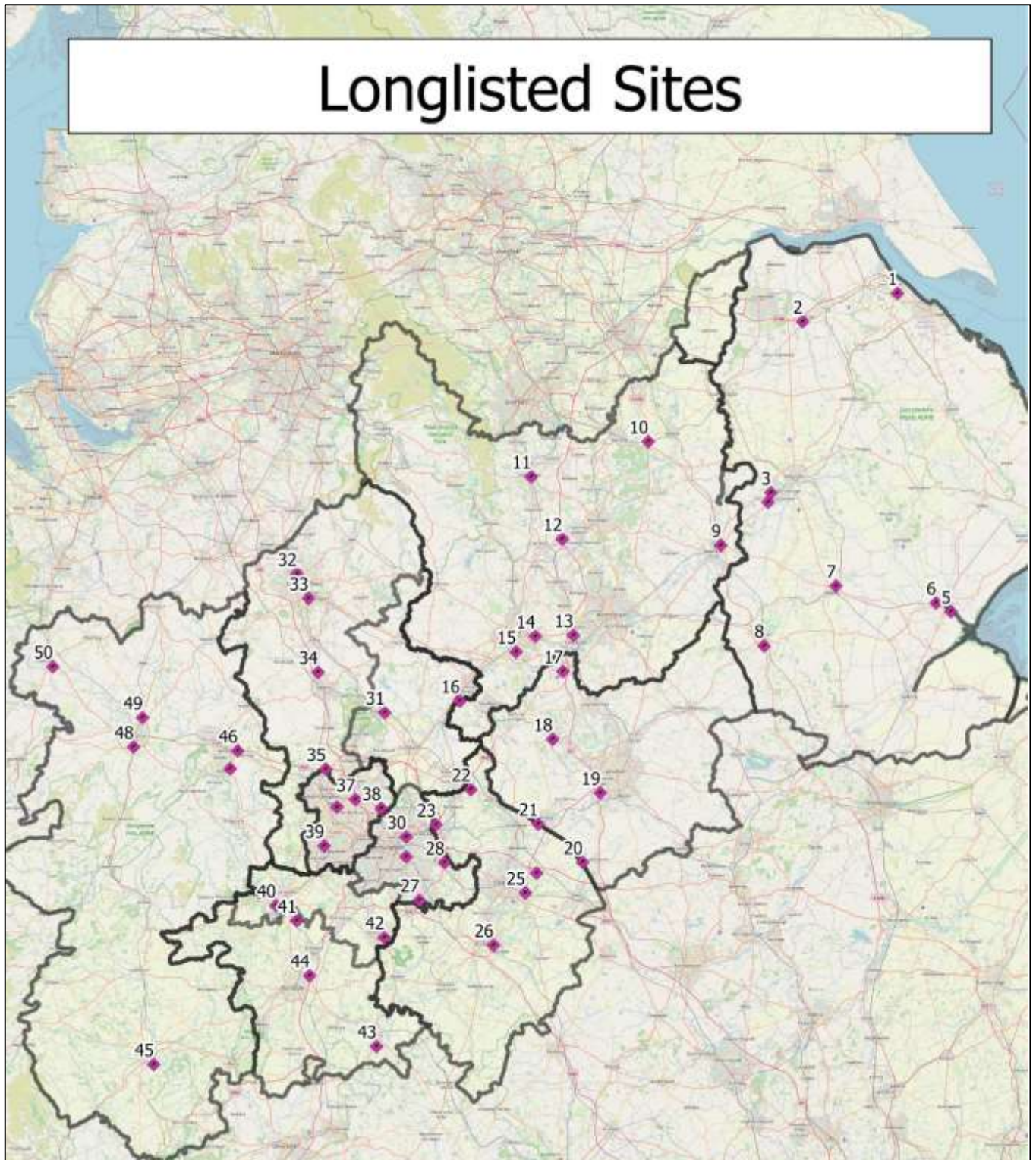


Figure 3: Map showing all longlisted sites across the Midlands

3.2 Shortlist

3.2.1 Greater Lincolnshire



Figure 4: Longlisted and Shortlisted Hub Sites in Greater Lincolnshire

Greater Lincolnshire presented several challenges when identifying appropriate sites due to its rural nature and lower traffic flow along the coastline. However, Lincolnshire does have the advantage that all of the proposed sites are close the gas transmission network, which means it may be less complex and cheaper to support infrastructure for alternative low-emissions fuels at these sites.

The top ranked site, Stallingborough, presents a good opportunity to connect the hub with renewable generation as it is adjacent to a proposed solar farm. Its proximity to several large

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industrial sites and the docks at Immingham and Grimsby indicates that there would be high utilisation of a hub at this location by freight vehicles.

Spittlegate Junction near Grantham is an interchange of the A1 and the new Grantham Southern relief road. There is a lot of development planned in the area with several large employment sites nearby.

Table 2: All sites identified in Greater Lincolnshire with commentary

Site I.D	Site Name	LEP	Notes
1	Stallingborough	Greater Lincolnshire	Adjacent to planned site of solar farm; close to gas network; large industrial areas with major employment sites; junction links roads from Grimsby/Cleethorpes to Humber Bridge & Scunthorpe; few other attractions apart from industrial areas; no brownfield land
2	Glanford Brigg Power Station	Greater Lincolnshire	Brownfield site onsite of power station; near to major interchange A18/A15/M180; adjacent to town of Brigg (small commercial/retail areas) and also close to Scunthorpe (large industrial areas); close to gas network
3	Teal Park	Greater Lincolnshire	Alternative location next to Hykeham; smaller interchange but still on major road; appears to be large area of land for development but not brownfield; energy from waste substation onsite; large employment areas; leisure and retail sites; close to train station
4	Hykeham Roundabout	Greater Lincolnshire	Major interchange and main road into Lincoln; retail and leisure onsite major road into Lincoln; no substation onsite; some proximity to major employment sites; no brownfield land for development
5	Riverside Industrial Estate (Boston)	Greater Lincolnshire	Large industrial site; substation onsite; close to dock so lots of freight options; not brownfield; major road but not at major interchange; access into Boston
6	Endeavour Park - Boston	Greater Lincolnshire	A52 interchange; large employment site (business park and retail park); not brownfield land; no substation onsite;
7	Sleaford Enterprise Park	Greater Lincolnshire	Major junction of A17; easy access into Sleaford; large employment site; grid connection unclear; not brownfield land; close to gas distribution network
8	Spittlegate Junction	Greater Lincolnshire	Development of the new Grantham Relief Road so future major junction and land already marked for development although not brownfield; large commercial site; easy access into centre of Grantham; no substation onsite but near to Severn Trent site which is likely to have good grid connection

3.2.2 D2N2

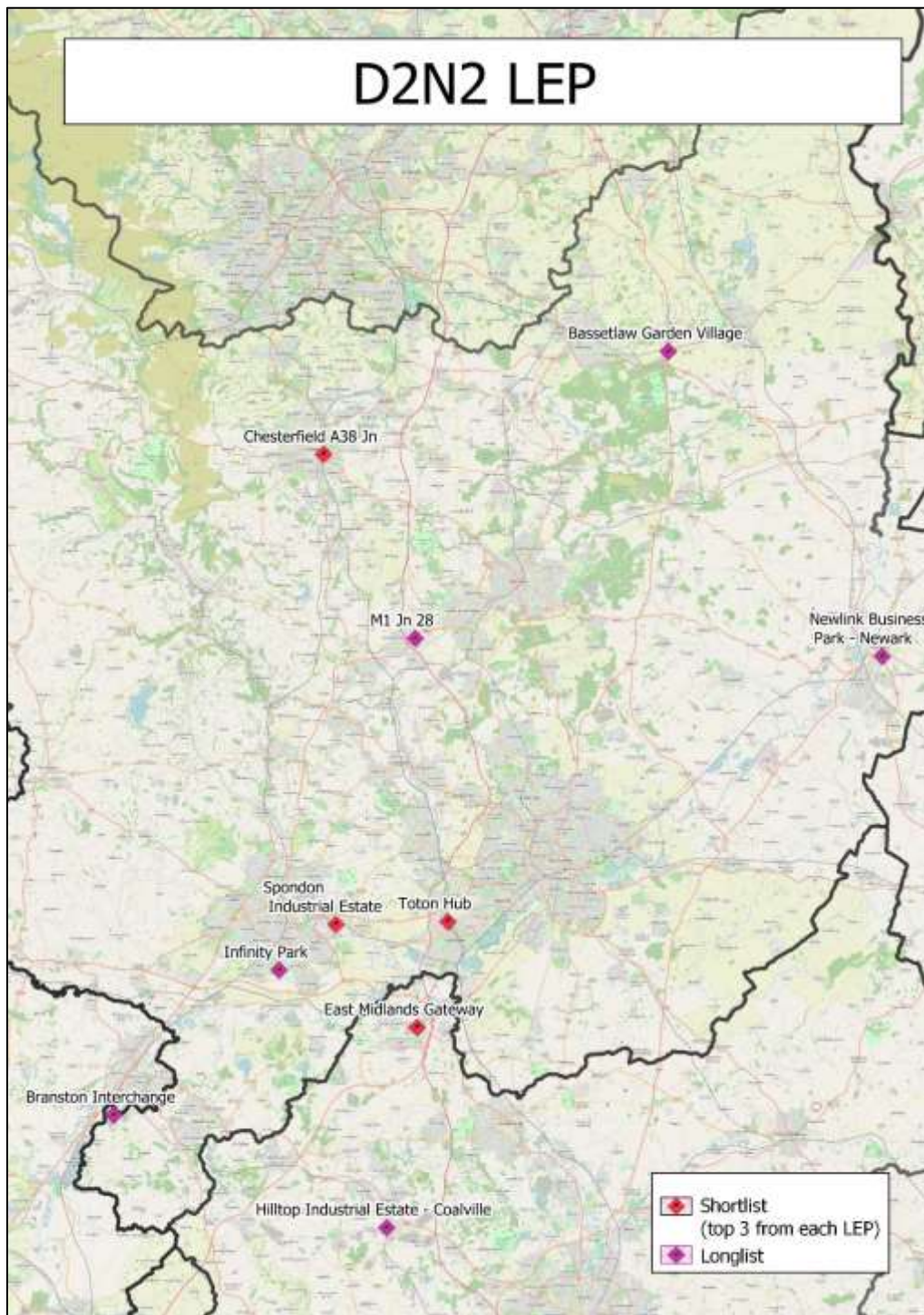


Figure 5: Longlisted and Shortlisted Sites in Derbyshire & Nottinghamshire

In D2N2, a cluster of good sites was located at the Southern border of Derbyshire and Nottinghamshire. This was because of the high level of development occurring in the area and the proximity of the sites to the M1 and its interchanges to Derby and Nottingham city centres, guaranteeing a high traffic flow.

Spondon Industrial Estate is a large brownfield site alongside a major road link between Derby and Nottingham. There is a substation onsite which makes grid connection and upgrades more accessible. There are several large commercial, retail and leisure sites nearby which maximises the number of potential different users of the hub site.

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As the East Midlands HS2 hub, Toton is already planned to be developed as a zero-carbon multi-modal transport hub. A large new employment site will be developed here, and it provides transport links into Nottingham, Derby, Loughborough and Leicester as well as being within easy reach of the M1.

The site at Chesterfield A38 Junction ranked highly due to its position at a large interchange with very high traffic flow, as well as its proximity to a primary substation. It is also a good location to ensure there is a well-spaced strategic network of hubs across the whole region, as there were fewer suitable sites in the rural North Midlands and Peak District. However, the land area available for the site in Chesterfield does appear to be limited compared to other, larger sites in Derbyshire and Nottinghamshire

During stage 4, it was brought to Cenex's attention that planning permission had already been sought at the Spondon site by the council for another purpose meaning the development of a transport hub would not be possible. If this progresses, it would be worth also considering Bassetlaw Garden Village, which was ranked as the 4th best site in the LEP. This is the site of a new housing development at a junction of the A1 and A57, close to employment sites and a popular country park with potential for a new Park and Ride railway station linking Sheffield and Lincoln. It also provides another good location in the North of Nottinghamshire if the Chesterfield site proves to be too small for the development of a hub.

Table 3: All sites identified in D2N2 with commentary

Site I.D	Site Name	LEP	Notes
9	Newlink Business Park Newark	D2N2	Major road interchange (A1/A46); Large employment sites nearby; distribution centre onsite; easy access to Newark, Nottingham and Lincoln; not brownfield land and area for development seems limited; doesn't appear to have a strong grid connection
10	Bassetlaw Garden Village	D2N2	Large area for development; potential for new P&R railway station (Sheff/Lincoln); major road interchange (A1/A57); close to substation; close to commercial site; close to leisure site (country park); employment/leisure/retail in new village
11	Chesterfield A38 Jn	D2N2	Brownfield land although further area for development seems limited; next to substation; major road interchange (A38/A617/A619); link to Chesterfield town centre
12	M1 Jn 28	D2N2	Several large employment sites, including a distribution centre nearby; major interchange (M1/A38); large retail park adjacent; near to solar farm; links to Nottingham and Mansfield; land available for development not clear and not brownfield
13	Toton Hub	D2N2	Development for EM HS2 Hub; lots of public transport links; will be employment sites nearby; close to M1 jn; link between Notts and Derby
14	Spondon Industrial Estate	D2N2	Onsite substation; on major road Notts to Derby; large area of brownfield; near to major employers (Rolls Royce, ST); retail and leisure sites nearby
15	Infinity Park	D2N2	Large development planned; major employment sites; substation onsite; close to major roads but not at a major interchange; area available for hub site not immediately obvious but assume large area available for development; easy link to Derby city centre
16	Branston Interchange	D2N2	Site of former power station with substation onsite; large employment sites and distribution centres; major road; access to Burton on Trent

3.2.3 Leicester and Leicestershire

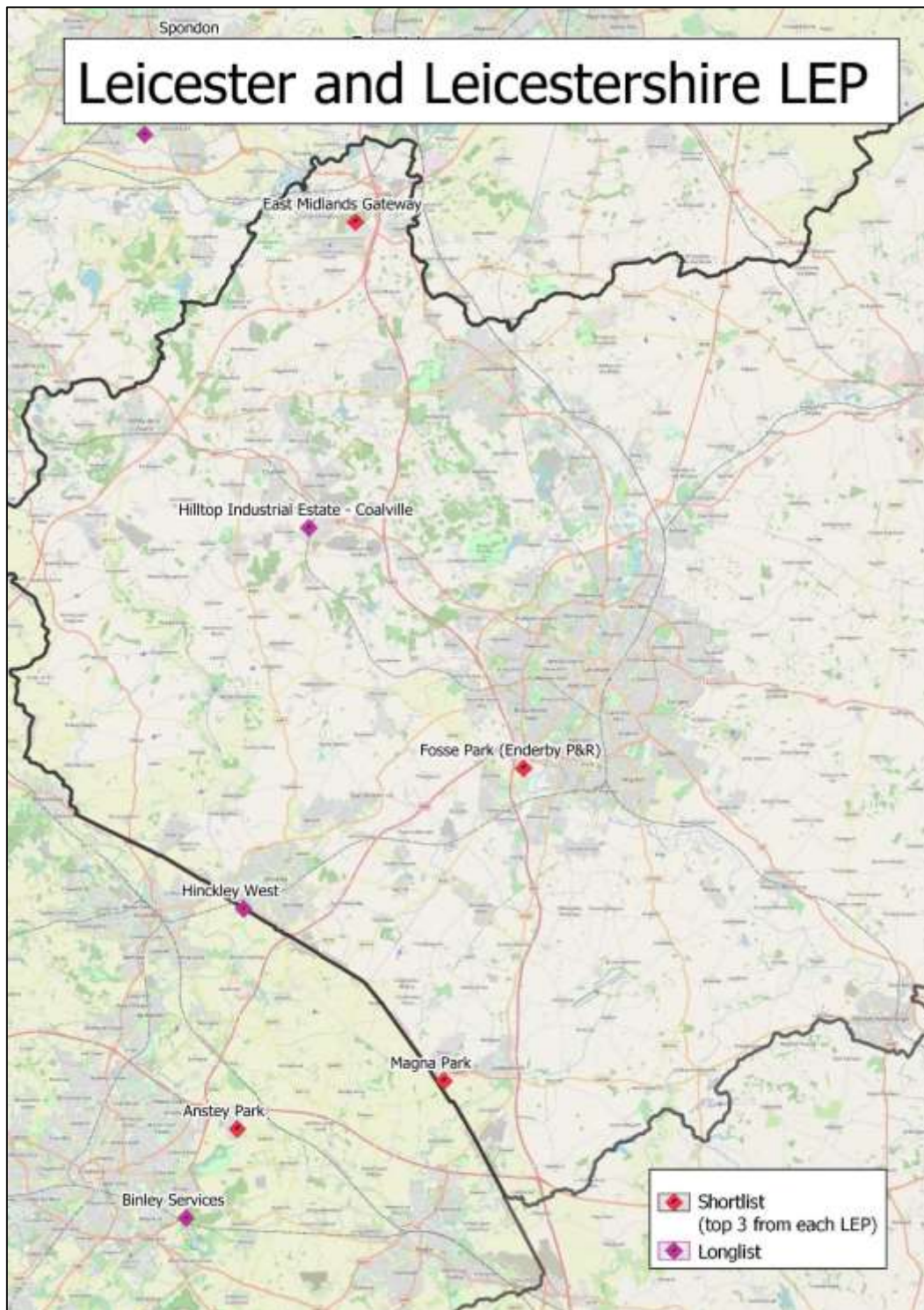


Figure 6: Longlisted and Shortlisted sites in Leicester and Leicestershire

The M1 corridor through Leicestershire presented several potential sites with high traffic flow and multiple use cases, in particular East Midlands Airport, Fosse Park and Magna Park.

East Midlands Gateway ranked as the best site in Leicestershire due to it being a major employment site with a good grid connection and having large distribution centres which makes it a good site for providing infrastructure for freight vehicles. The site will also benefit from the arrival of HS2 which will provide improved transport links with surrounding towns and cities. The site is near both the

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Spondon and Toton sites recommended in the D2N2 LEP area so it would need to be considered whether there is demand for multiple hubs in such close proximity or if it is worth considering a lower ranked site in the area which may be better situated in terms of creating a strategic network of hubs.

The Fosse Park site benefits from having several large employment sites and a retail park nearby as well as an existing Park and Ride site (Enderby) which provides a transport link into Leicester city centre. However, there is no brownfield land available so a hub would have to be developed either on the Park and Ride itself or on greenfield land. The nearest primary substation is on the other side of the M1 motorway, meaning any grid upgrade required may be costly to facilitate.

Magna Park is a major employment site with several large distribution centres and further development planned in nearby Lutterworth. Although the site is not brownfield, it benefits from an onsite substation. However, it is situated further from the M1 than the Fosse Park and EMA sites so has a lower traffic flow.

Table 4: All sites identified in Leicester and Leicestershire with commentary

Site I.D	Site Name	LEP	Notes
17	East Midlands Gateway	Leicester & Leicestershire	Major employment sites; airport and public transport links; large distributions centres; substation onsite; at M1 Jn 24/23A; links to Derby/Notts/Loughborough; not brownfield but large area for development
18	Hilltop Industrial Estate - Coalville	Leicester & Leicestershire	Substation onsite; large employment sites; close to M1 jn; major distribution centres; no brownfield land
19	Fosse Park - Enderby P&R	Leicester & Leicestershire	Several large employment site nearby; large retail park; already a P&R site; major interchange of M69 and M1; no substation onsite; not brownfield but large area based around existing P&R
20	Magna Park	Leicester & Leicestershire	Major employment site with several distribution centres; substation on site; road interchange with link to M1; links to Leicester and Coventry; new development planned at Lutterworth; not brownfield
21	Hinckley West	Leicester & Leicestershire	Primary substation onsite; large industrial/commercial estates with several distribution centres; on major road (A5) and close to junction with M69; no brownfield land

3.2.4 Coventry and Warwickshire

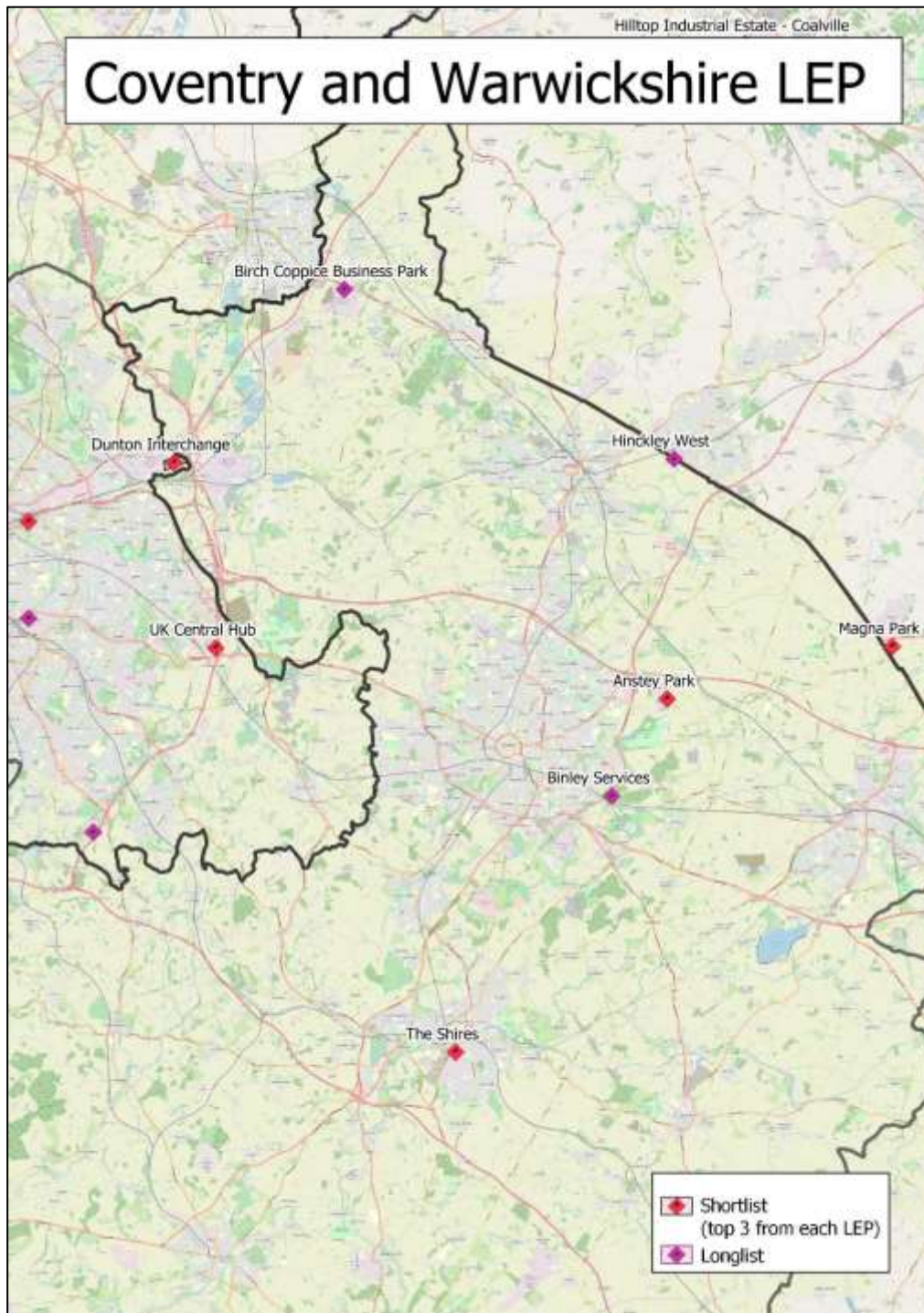


Figure 7: Longlisted and shortlisted sites in Coventry and Warwickshire

There are already a few locations for transport hubs proposed in Warwickshire, in particular the Anstey Park site which is the focus of the previous work packages in this project. This ranked as the top site in this study due to its position near to several large employment sites, a large area available for development, the onsite substation and the potential to link into Coventry with a Park and Ride station for the VLR scheme.

Binley Services is another site at which there are plans to develop an EV charging hub, but which did not make the shortlist in this study. This is mainly due to its lower ranking in the Interchange category, since it is further from a major junction than other sites identified in Coventry and Warwickshire.

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The Dunton Interchange site lies on the border of Warwickshire and Greater Birmingham. It is an interchange of two motorways so there is a high traffic flow past the site. There is a large area of brownfield land for development and it is in close proximity to several large employment sites and an international freight terminal which would make this a good location for freight vehicle refuelling/recharging infrastructure.

The Shires is a retail park adjacent to several business and technology parks just outside of Leamington Spa. It presents a good location in the South of the county which is typically rural so has fewer suitable sites for the criteria required in this study, although the area of land available for development appears quite restricted. Furthermore, installing a large transport hub here may be opposed by the new residential development opposite.

Table 5: All sites identified in Coventry and Warwickshire with commentary

Site I.D	Site Name	LEP	Notes
22	Birch Coppice Business Park	Coventry and Warwickshire	Large employment centre; substation onsite; major interchange A5/M42; link to Tamworth (Drayton Manor)/Bham/Nuneaton; international freight terminal and several distribution centres; not brownfield
23	Dunton Interchange	Coventry and Warwickshire	Large area of brownfield land available; large industrial sites including rail freight distribution centre; substation on opposite side of the motorway but adjacent to Severn Trent site so likely to have a strong grid connection; major interchange M6/M42; rail link to Cov and Birmingham
24	Anstey Park	Coventry and Warwickshire	Not brownfield but hub development already planned here; major interchange; several large employment areas (industrial and commercial); primary substation onsite; link into Coventry
25	Binley Services	Coventry and Warwickshire	Not brownfield but EV charging infrastructure development already planned onsite; not at a major interchange but between two A46 jns; close to industrial park and Coventry airport
26	The Shires	Coventry and Warwickshire	Major road and interchange; close to substation; large retail/industrial sites with distribution centres; new housing development nearby; land available for development appears limited; easy access to Warwick and Leamington Spa

3.2.5 Greater Birmingham and Solihull

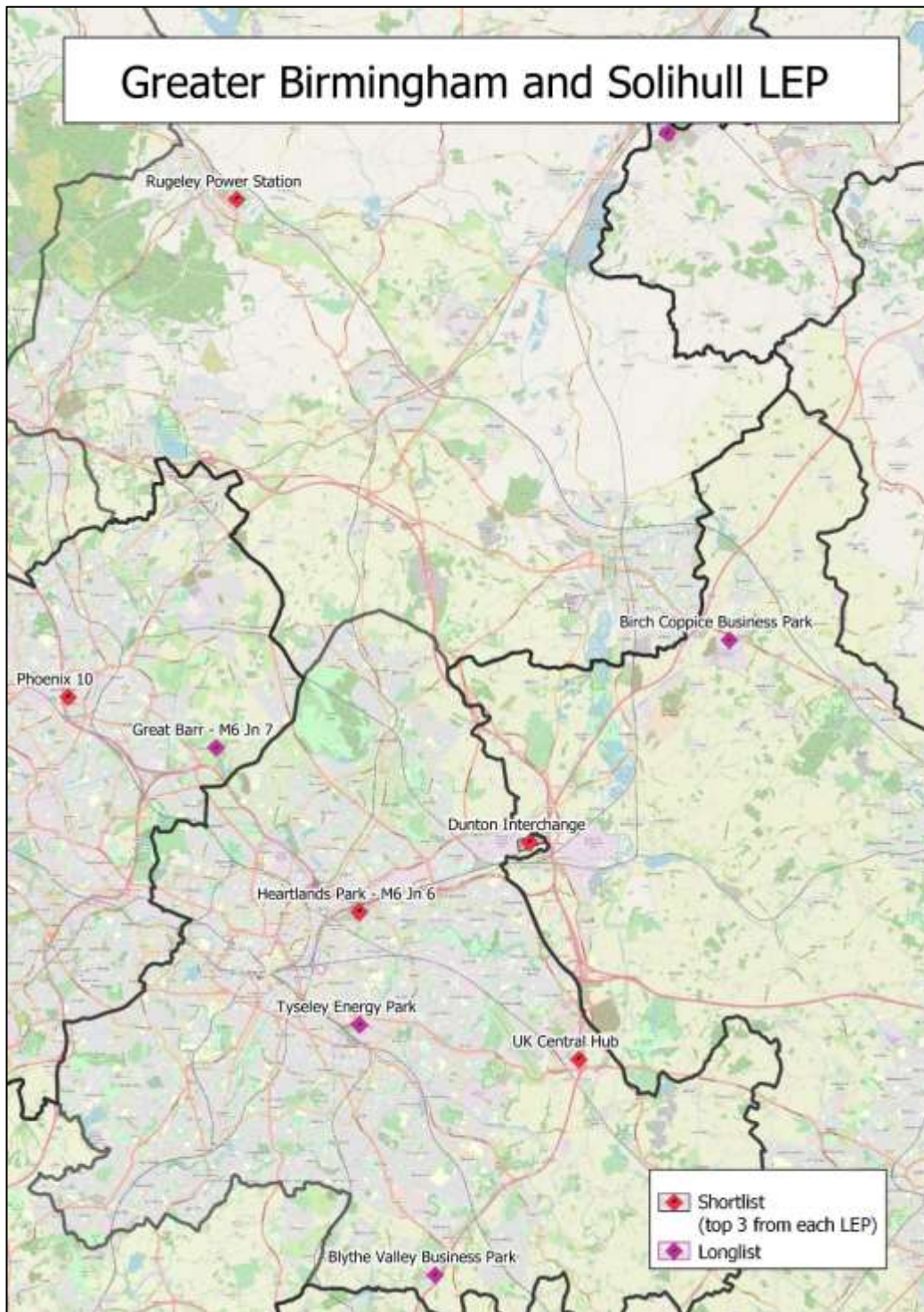


Figure 8: Longlisted and shortlisted sites in Greater Birmingham and Solihull

The area of Greater Birmingham and Solihull LEP overlaps with both the Worcestershire and Stoke on Trent and Staffordshire LEPS. For the purpose of ranking the sites in this study, those which lay in the overlap with Worcestershire were included in analysis for the Worcestershire LEP. Only one identified site was in the overlap with Staffordshire LEP, and this was included in the analysis for Greater Birmingham due to it being suggested by the LEP representative.

The highest-ranking site in this LEP is the UK Central Hub. The site has many different use cases due to the proximity of Birmingham International Airport, the NEC, and several other large commercial sites. An HS2 station is due to be built in the area which presents a good opportunity

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for the development of a multi-modal mobility hub and will provide even better public transport links into Birmingham and other surrounding towns and cities. Its proximity to several major junctions of the M42 means it has one of the highest traffic flows of all the sites across the Midlands.

A low-carbon development is already planned at Rugeley, which is a large brownfield area on the site of a former power station. It has a strong grid connection and the opportunity to be integrated with on-site renewables but has a lower traffic flow compared to other sites in the area.

There is a large brownfield site at Heartlands Park at junction 6 of the M6, which is located next to a variety of attractions, including leisure, industrial and commercial sites. It has a high traffic flow but its nearest primary substation is located on the other side of the motorway which may prove costly when grid upgrades are required.

Tyseley Energy Park was noted as the site of a planned low carbon recharging/refuelling station. Although it benefits from a low carbon power plant onsite, it ranked lower than other sites in Greater Birmingham due to the smaller area that appeared available for development and the lower traffic flow through its nearest road interchange.

Table 6: All sites identified in Greater Birmingham and Solihull with commentary

Site I.D	Site Name	LEP	Notes
27	Blythe Valley Business Park	Greater Birmingham & Solihull	Large employment site; new residential development adjacent; no substation onsite; several other large business parks nearby; land available to develop seems limited and not brownfield; logistics company onsite; at M42 interchange; link into Solihull
28	UK Central Hub	Greater Birmingham & Solihull	Large employment/leisure sites; airport; HS2 development and other rail links; interchange of M42; good grid connection; link between Birmingham and Coventry; could develop on existing car park or at HS2 site
29	Tyseley Energy Park	Greater Birmingham & Solihull	Low carbon recharging/fuelling station already planned onsite; strategic location between airport and Birmingham low carbon power plant onsite; large employment site; area of land for development seems limited and potentially too residential nearby; rail link
30	Heartlands Park - M6 Jn 6	Greater Birmingham & Solihull	Large area of brownfield, close to high traffic flow major junction, access to substation the other side of the motorway, proximity to large industrial and commercial sites and Star City leisure park, easy access into Birmingham
31	Rugeley Power Station	Greater Birmingham & Solihull	Zero carbon development on brownfield land (residential, but with on-site renewables generations); large employment site nearby; at interchange but not particularly major; train link between Stoke on Trent and Lichfield

3.2.6 Black Country

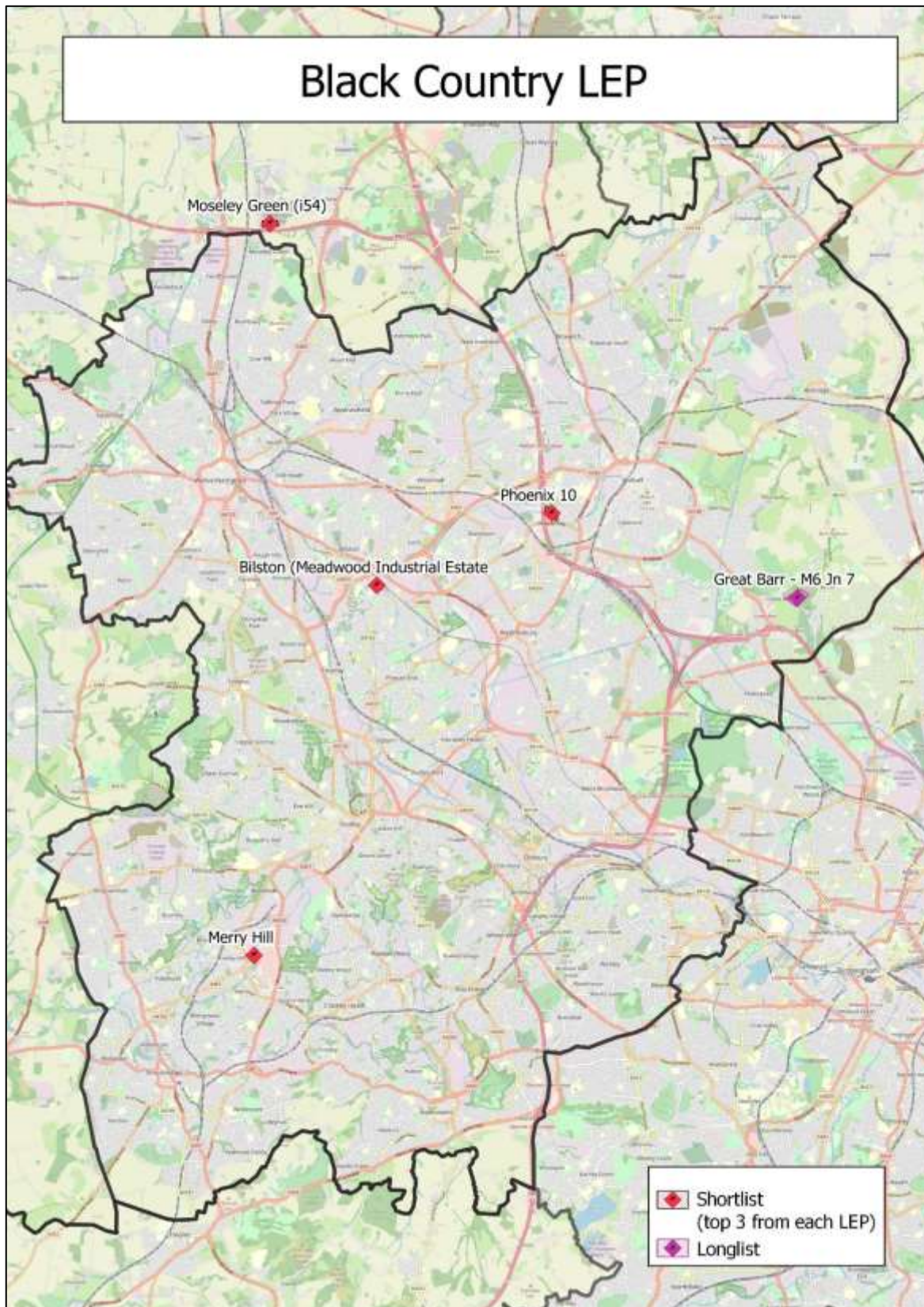


Figure 9: Longlisted and shortlisted sites in the Black Country

Fewer sites were identified in the Black Country mainly due to the wide urban spread and a limited number of large substations. Some potential sites are also too close to residential areas. However, there is a high traffic flow through the area due to the density of major roads connecting the main urban centres in the Black Country.

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The Phoenix 10 site is a large brownfield area close to a major interchange of the M6 and large retail sites which has local development plans including a new train station. A disadvantage of the site is that access to the hub would either be through a residential area, which may have strong opposition, or would require a new road to be built from the motorway across greenbelt.

Bilston has previously been identified in work that Cenex completed for the Black Country authorities as an area that would benefit from EV charging infrastructure. The site at Meadwood Industrial Estate is a large area of brownfield in proximity to several large employment sites. The hub could also connect to the nearby Midland Metro station which links Wolverhampton and Birmingham. Again, this site is also close to residential areas and potential grid substation upgrades appear to be complicated.

Merry Hill is a popular retail and leisure site on a major road between Dudley and Stourbridge with a brownfield site and large car park areas that could be developed for a hub, although the site appears restricted in developing beyond 10 acres in area.

The i54 site is on the border of the Black Country and Staffordshire and was included in the Staffordshire LEP analysis in this study.

Table 7: All sites identified in the Black Country

Site I.D	Site Name	LEP	Notes
36	Bilston (Meadwood Industrial Estate)	Black Country	Large area of brownfield land; at major road interchange; close to several large employment sites; close to Midland Metro station (Wolves to Bham); no primary substation nearby but potentially a good grid connection due to proximity to tram; position potentially too close to residential areas
37	Phoenix 10	Black Country	Large area of brownfield with local development plans, close to major interchange, access to Walsall and West Brom, near to industrial estates and retail park, potential for new train station
38	Great Barr - M6 Jn 10	Black Country	Major interchange with large traffic flow; large area of brownfield land; access to Walsall & West Brom; no substation nearby and no attractions/employment sites; potential issues with access to site being through residential areas
39	Merry Hill	Black Country	Brownfield site/large car parks nearby; large retail/leisure sites; major road and near to interchange; not close to substation but appears to have good grid connection; potentially too residential and restricted with developing site beyond the initial 10 acres

3.2.7 Worcestershire

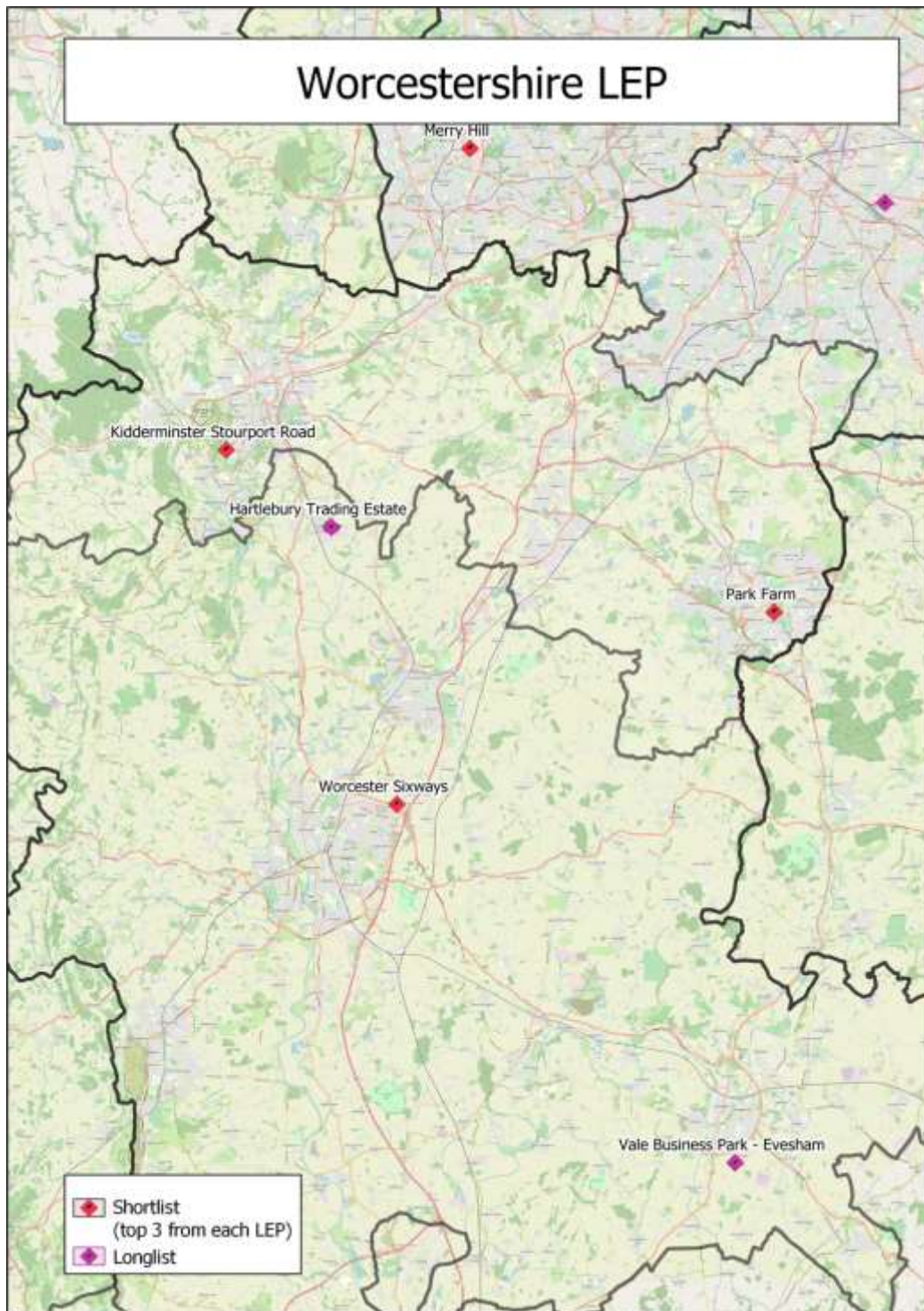


Figure 10: Longlisted and shortlisted sites in Worcestershire

Worcester Sixways was suggested as a potential site by MEH as they were aware of development planned at the site. It ranked the highest in Worcestershire due to its location at a junction of the M5 and near to several employment and leisure sites. It is the site of a former Park and Ride so public transport links into Worcester could be easily re-established.

Although the Kidderminster Stourport Road Estate is not at such a major interchange, it has brownfield land development and is onsite of several industrial and commercial sites with existing EV charging infrastructure.

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Park Farm is an industrial estate close to major interchange of roads linking Redditch with Worcester, Warwick and the Greater Birmingham area. There is a primary substation onsite but the amount of land available for development could be limited.

Table 8: All identified sites in Worcestershire with commentary

Site I.D	Site Name	LEP	Notes
40	Kidderminster Stourport Road Business Park	Worcestershire	Brownfield land available; major road between Kidderminster and Stourport but not a major interchange; no substation onsite; large employment site and proximity to large fleets;
41	Hartlebury Trading Estate	Worcestershire	Site of large industrial estate; proximity to major road but not an interchange; not brownfield land; train station onsite, no substation onsite
42	Park Farm Industrial Estate	Worcestershire	Large industrial estate; substation onsite; not brownfield and limited land for development; at major interchange; potentially too close to residential areas; links to Redditch/Bromsgrove/Stratford upon Avon
43	Vale Business Park - Evesham	Worcestershire	Several large employment sites; major road; no substation onsite but proximity to solar farm; no brownfield land
44	Worcester Sixways	Worcestershire	Known interest in development at site although area for development appears limited; near to several major employment sites; at major M5 jn; used to be P&R, no substation onsite

3.2.8 Stoke on Trent and Staffordshire



Figure 11: Longlisted and shortlisted sites in Stoke on Trent and Staffordshire

The highest ranked sites in this LEP area were to the North and South of Stoke on Trent at Wolstanton Junction and Trentham Lakes North. These are quite similar sites, near to junctions of the A500 with links to the M6 as well as near to various retail and commercial sites, Wolstanton has the advantage of a larger area of brownfield available, but there are several distribution centres close to the Trentham site which makes it a good location for freight recharging/refuelling

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infrastructure. Both sites, however, present challenges for potential grid upgrades due to major roads and residential areas lying between them and the closest distribution network infrastructure.

The site on the border of Staffordshire and the Black Country is a large brownfield site close to the i54 site which is already planned for development. It is between two junctions of the M54, adjacent to large employment sites and close to a primary substation (although this is on the opposite side of the motorway so any required upgrades may be challenging).

Table 9: All identified sites in Stoke on Trent and Staffordshire with commentary

Site I.D	Site Name	LEP	Notes
32	Wolstanton Junction	Stoke on Trent & Staffordshire	Large area of brownfield land; no substation but site of former sewer works so potential for good grid connection; large retail sites other employment sites nearby, between 2 major junctions leading to Stoke on Trent
33	Trentham Lakes North	Stoke on Trent & Staffordshire	Brownfield site; between several major interchanges of A50; large retail/commercial/leisure sites and distribution centres nearby; no substation onsite
34	Redhill Business Park	Stoke on Trent & Staffordshire	Next to major M6 interchange; large employment site; link between Stafford and Stoke on Trent; no substation onsite; not brownfield
35	Moseley Green (i54)	Stoke on Trent & Staffordshire	Large brownfield site and large development happening at nearby i54 site; near to primary substation; several large employment sites nearby; between two junctions of M54; link between Wolverhampton and Stoke on Trent;

3.2.9 The Marches

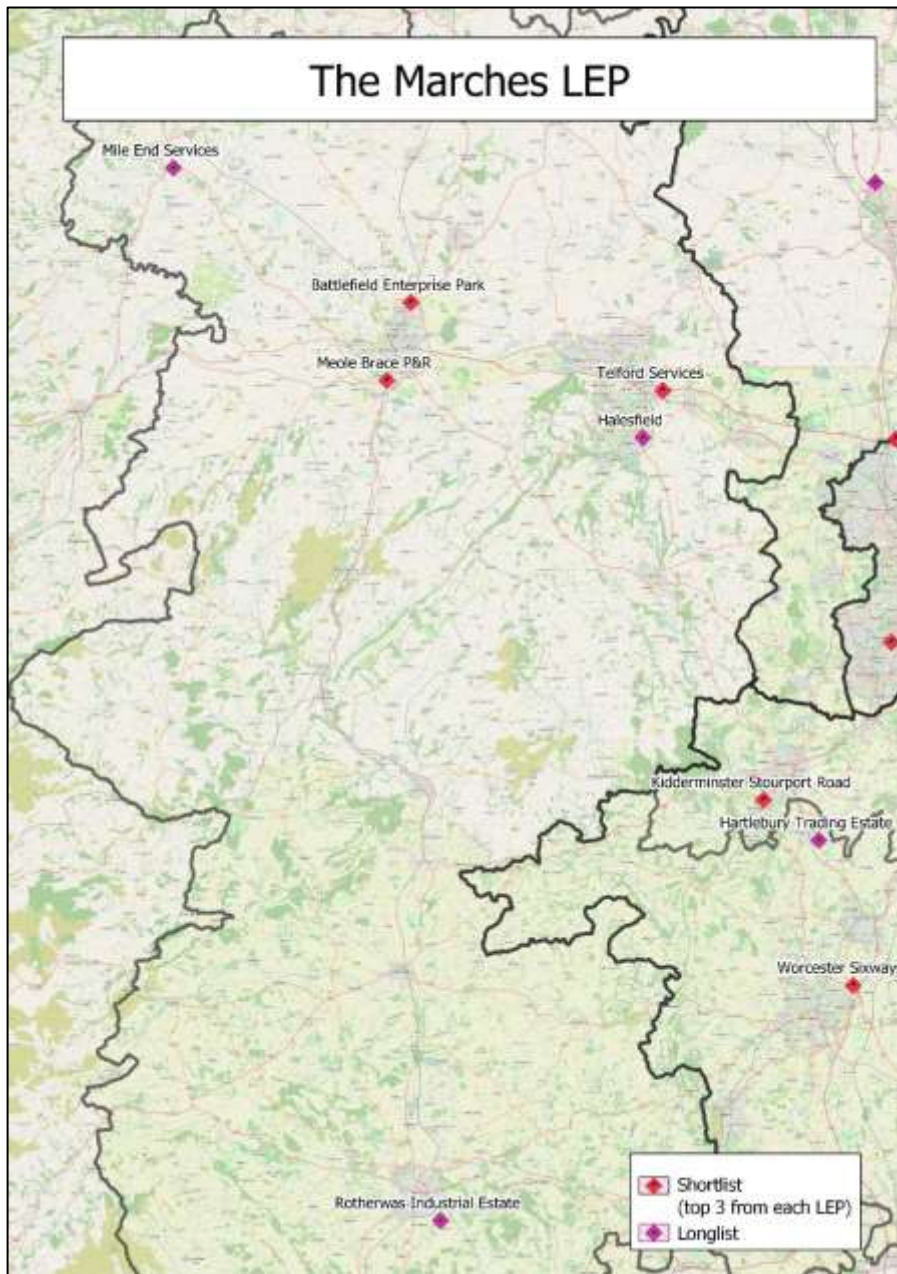


Figure 12: Longlisted and shortlisted sites for The Marches

Due to its rural nature, there is a large area in the centre of the Marches where there are no appropriate sites for a transport hub. However, several good sites were found around Telford and Shrewsbury. Battlefield Enterprise Park is the site of an energy recovery facility so has a good grid connection, as well having several large employment areas and a Park and Ride for Shrewsbury town centre already onsite.

Meole Brace to the south of Shrewsbury also has a park and ride for Shrewsbury and is close to retail and leisure sites but may have challenges with connection to the distribution network.

The site at Telford services is at a major interchange of the M54 so has the greatest traffic flow of all the sites in The Marches. It is close to a large business park, although there appears to be only greenfield land available for development here.

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Table 10: All sites identified in The Marches with commentary

Site I.D	Site Name	LEP	Notes
45	Rotherwas Industrial Estate	The Marches	No brownfield land for development; large employment sites and distribution centres; not close to major interchange but within easy access of A49; substation not onsite
46	Telford Services	The Marches	At major interchange of M54; close to large retail/leisure and employment sites (including University); already a service station at junction; no substation onsite; no brownfield land
47	Halesfield	The Marches	Large employment (industrial) site; near major interchange; no brownfield land; substation onsite; road link Telford/Kidderminster
48	Meole Brace P&R	The Marches	Existing P&R site; at major road interchange; close to large retail and leisure site; no substation onsite; not brownfield
49	Battlefield Enterprise Park	The Marches	ERF facility and substation onsite; large employment areas; close to major road interchange; existing P&R onsite; retail and leisure facilities onsite; no brownfield land but development already happening here
50	Mile End Services	The Marches	Major road interchange linking Wales and Chester; service station (with EVSE) already onsite; adjacent to large employment and retail sites; no brownfield land; substation in opposite industrial site

4 Conclusion

4.1 LEP shortlists

Following a mapping exercise, 50 sites were identified across the Midlands that may be suitable for development of a multi-modal mobility hub. These sites were selected according to agreed criteria and a shortlist of the top-three sites in each LEP was produced by application of criteria weightings to the longlist in each LEP.

Feedback was sought throughout from the Midlands Energy Hub team, which means that these potential sites have had a first sense-check with those familiar with the local economy and geography.

When the 27 sites are taken together, and an isochrone analysis was run, they collectively ensure that the vast majority of the Midlands region is within 50 miles of one of the shortlisted sites (Figure 13).

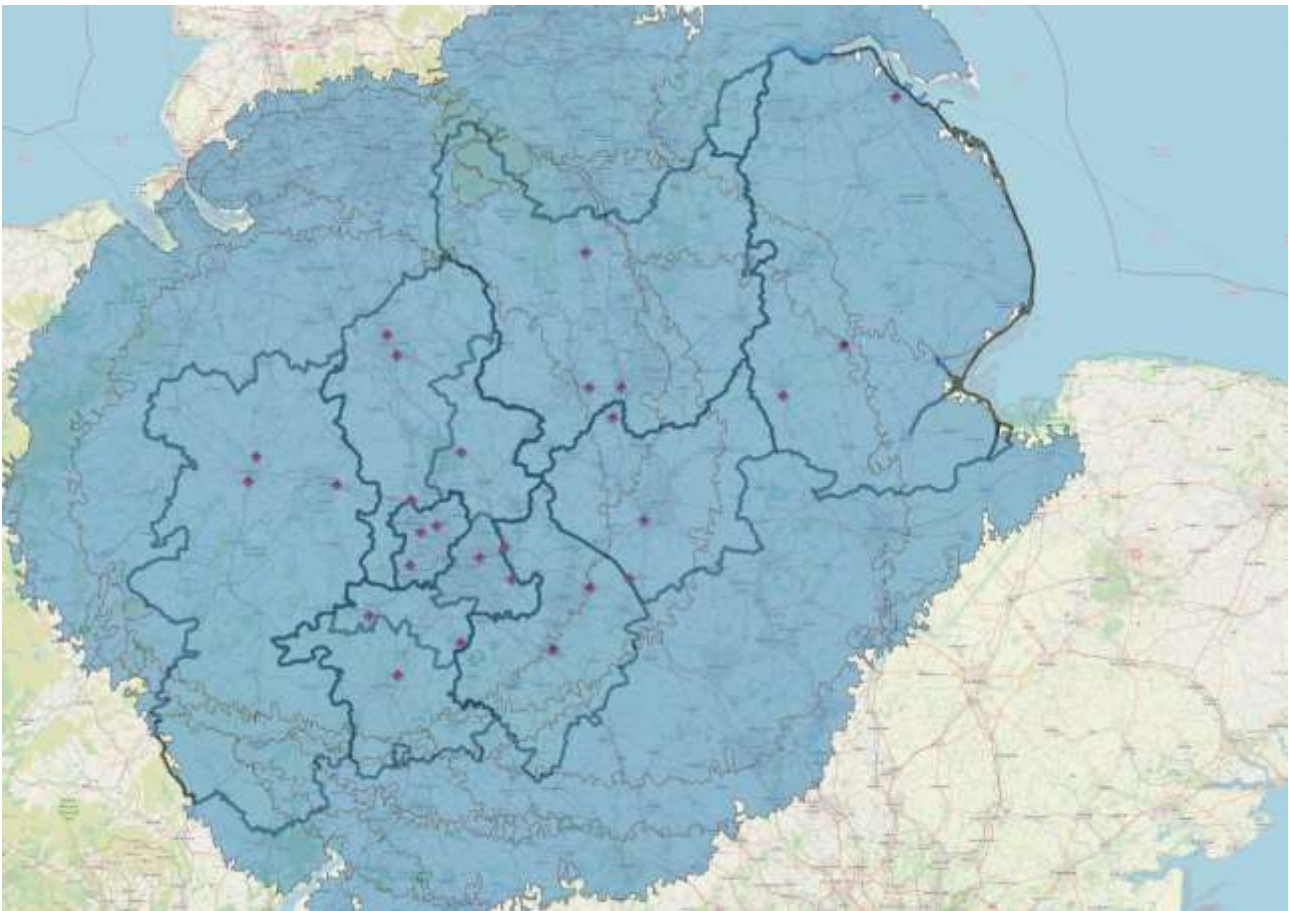


Figure 13: 50 miles isochrone of shortlisted sites

Given that even the most conservative range estimates for modern EVs is more than 100 miles, the coverage achieved at a 50 mile isochrone is assessed to be positive.

4.2 Comparing a LEP-by-LEP view with a regional perspective

Top 27

Whilst a LEP-by-LEP approach was appropriate for the scale of this commission and to ensure that guidance could be given to each LEP about the sites to prioritise, it is recognised that this comes with a risk that the resulting network is not as evenly distributed as if a Midlands-wide approach were taken. For instance, the D2N2 and Leicestershire analysis results in two sites within very close proximity to each other (Spondon, East Midlands Gateway). Although in principle this may reflect

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the very high demand anticipated in this area, the LEP-focused approach will tend to neglect network-wide benefits.

Therefore, a further analysis was undertaken to account for the distance between each site. Taking a regional perspective view does bring its own disadvantages because it will inevitably reduce the importance of some of the more local factors, but the analysis brings a helpful perspective within which a holistic strategy for hubs can be developed.

To achieve this, the shortlisting process was updated to include a distance metric, with a neutral weighting of 1. The metric was calculated by averaging the distances to the three closest longlisted sites. The analysis was re-run, ignoring the LEP in which the site is situated. Figure 14 shows the results for the top 27 sites:

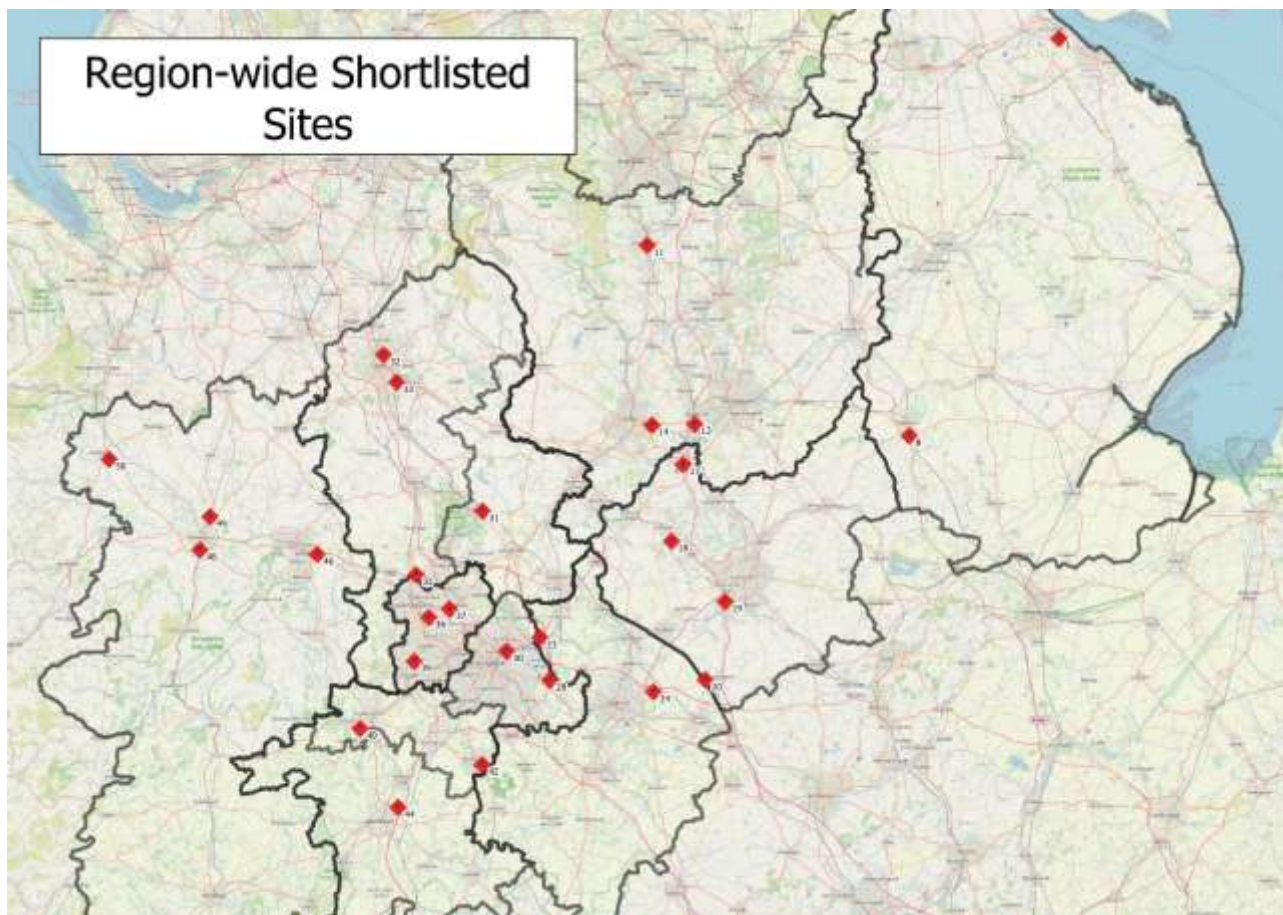


Figure 14: Top-27 shortlisted sites from Regional Perspective

When compared to Figure 13, only 3 sites change between the lists. Mile End Services (The Marches), Hilltop Industrial Estate – Coalville (Leicester & Leicestershire) and Merry Hill (Black Country) replace Birch Coppice Business Park (Coventry & Warwickshire), Great Barr M6 Jn 10 (Black Country) and Sleaford Enterprise Park (Greater Lincolnshire).

Top 9

In the original proposal for this work, Cenex suggested identifying approximately one site per LEP. If this view is taken on a LEP-by-LEP basis, this would have generated the list below:

Table 11: List of highest ranked sites in each LEP

LEP	Highest Ranked Site
Coventry and Warwickshire	Anstey Park
D2N2	Spondon Industrial Estate
The Marches	Battlefield Enterprise Park
Black Country	Phoenix 10

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Greater Birmingham & Solihull	UK Central Hub
Leicester & Leicestershire	East Midlands Gateway
Greater Lincolnshire	Stallingborough
Worcestershire	Worcester Sixways
Stoke on Trent & Staffordshire	Wolstanton Junction

When the regional approach described above is applied, the top-10 Midlands-wide sites are as follows:

Table 12: List of top 9 ranked sites in the Midlands

Site	LEP
East Midlands Gateway	Leicester & Leicestershire
UK Central Hub	Greater Birmingham & Solihull
Worcester Sixways	Worcestershire
Anstey Park	Coventry and Warwickshire
Wolstanton Junction	Stoke on Trent & Staffordshire
Phoenix 10	Black Country
Bilston (Meadwood Industrial Estate)	Black Country
Stallingborough	Greater Lincolnshire
Kidderminster Stourport Road Business Park	Worcestershire

Figure 15 compares the results from the LEP-by-LEP view with the regional perspective. The sites in the left-hand list are those highlighted only by the LEP view and the sites in the right-hand list are those highlighted only by the latter. The middle group are sites which made the shortlist through both methods.



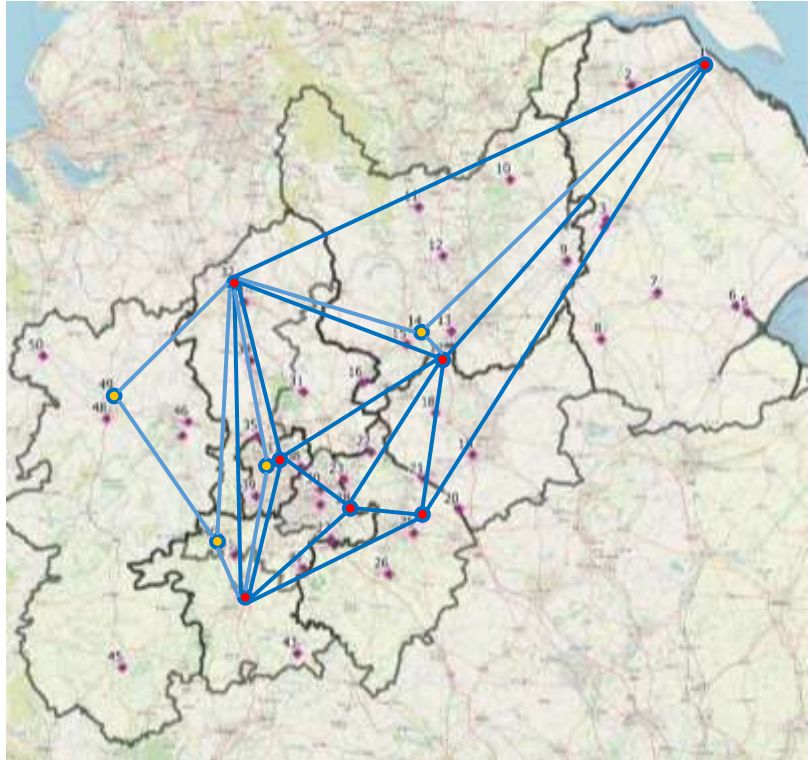
Figure 15: Venn diagram comparing the LEP-by-LEP view with the Regional Perspective

This shows that there is a strong consistency between the two approaches. Whilst the weighting of the distance metric within the regional perspective (currently set to 1) and the number of sites which is included in the calculation of the metric might have an impact, a brief sensitivity analysis indicates that the overlap between methods is not unduly impacted.

This allows firmer conclusions to be drawn on the results and clear, analysis-driven guidance to be given by the Midlands Energy Hub to their LEP stakeholders when discussing the prioritisation of potential transport hub locations.

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It is therefore recommended that the 7 sites which are common to both analyses are progressed, along with the other four LEP-only or Regional-only sites, with the 2nd and 3rd-ranked sites for each LEP in a second wave.



This would produce a network as outlined in

Figure 16:

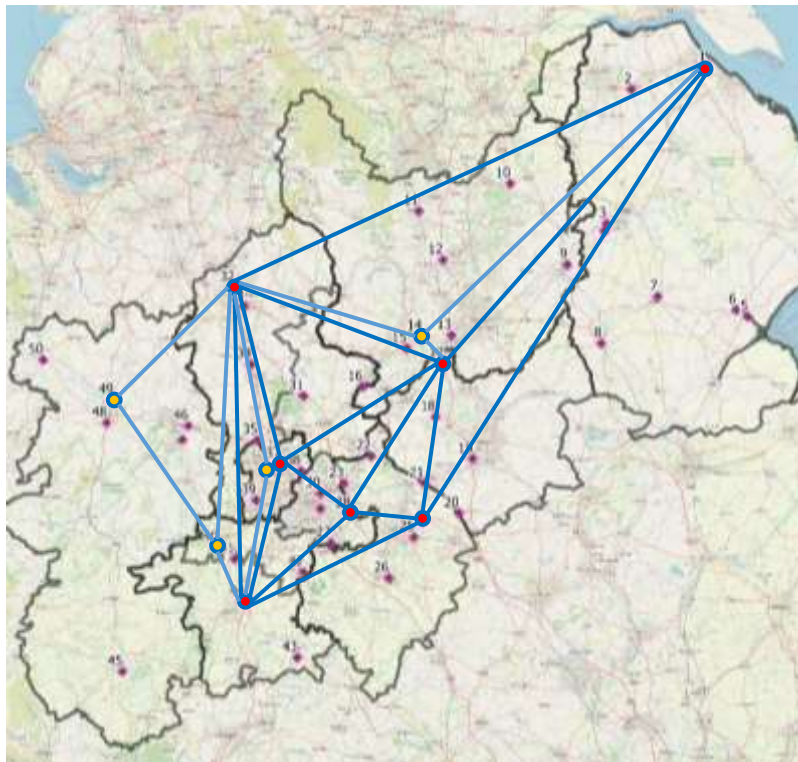


Figure 16: Network of top ranked sites from both LEP-by-LEP view and Regional Perspective

This network would ensure that, with the exception of southeast Lincolnshire, the vast majority of Midlands residents would be within 50 miles of a hub and a significant majority within 25 miles, as shown in Figure 17:

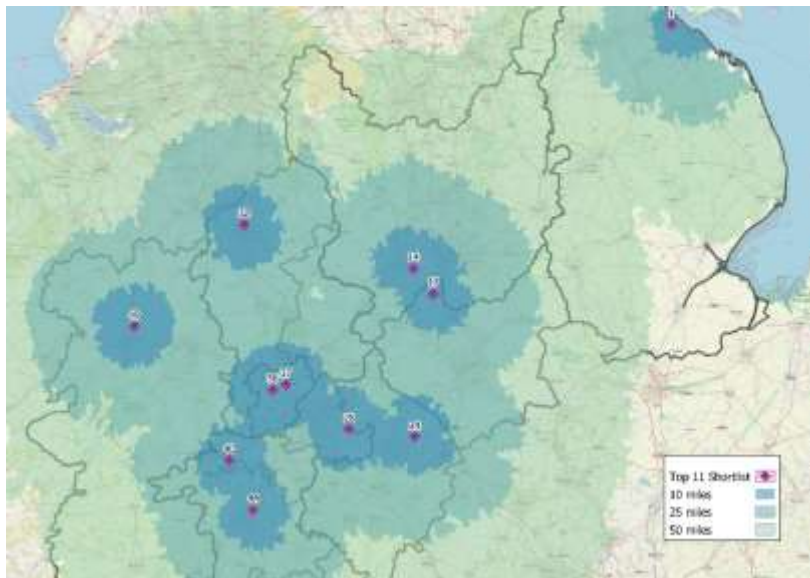


Figure 17: Driving isochrones from the top-11 shortlisted sites.

4.3 Next steps

The sites identified in this report are intended to be used as a starting point from which further study is required to determine the suitability for the sites to be developed as part of a strategic network.

In order to take the next step in this project, we recommend that Midlands Energy Hub should focus on these areas:

- Circulate the report and associated analysis to provoke discussion and harmonise planning;
- Engage key stakeholders at each (see Appendix C: List of stakeholders for the contacts gathered during the project);
- Determining land ownership and planning requirements by site;
- Assessment of electrical supply to the site; and
- Outlining a business case for the site.

5 Abbreviations

Abbreviation	Explanation
EV	Electric Vehicle
CCC	Coventry City Council
LEP	Local Enterprise Partnership
MEH	Midlands Energy Hub
OSM	Open Street Map
SRN	Strategic Road Network
VLR	Very Light Rail

6 Appendix A: All longlisted sites with commentary

Site I.D	Site Name	LEP	Notes
1	Stallingborough	Greater Lincolnshire	Adjacent to planned site of solar farm; close to gas network; large industrial areas with major employment sites; junction links roads from Grimsby/Cleethorpes to Humber Bridge & Scunthorpe; few other attractions apart from industrial areas; no brownfield land
2	Glanford Brigg Power Station	Greater Lincolnshire	Brownfield site onsite of power station; near to major interchange A18/A15/M180; adjacent to town of Brigg (small commercial/retail areas) and also close to Scunthorpe (large industrial areas); close to gas network
3	Teal Park	Greater Lincolnshire	Alternative location next to Hykeham; smaller interchange but still on major road; appears to be large area of land for development but not brownfield; energy from waste substation onsite; large employment areas; leisure and retail sites; close to train station
4	Hykeham Roundabout	Greater Lincolnshire	Major interchange and main road into Lincoln; retail and leisure onsite major road into Lincoln; no substation onsite; some proximity to major employment sites; no brownfield land for development
5	Riverside Industrial Estate (Boston)	Greater Lincolnshire	Large industrial site; substation onsite; close to dock so lots of freight options; not brownfield; major road but not at major interchange; access into Boston
6	Endeavour Park - Boston	Greater Lincolnshire	A52 interchange; large employment site (business park and retail park); not brownfield land; no substation onsite;
7	Sleaford Enterprise Park	Greater Lincolnshire	Major junction of A17; easy access into Sleaford; large employment site; grid connection unclear; not brownfield land; close to gas distribution network
8	Spittlegate Junction	Greater Lincolnshire	Development of the new Grantham Relief Road so future major junction and land already marked for development although not brownfield; large commercial site; easy access into centre of Grantham; no substation onsite but near to Severn Trent site which is likely to have good grid connection
9	Newlink Business Park - Newark	D2N2	Major road interchange (A1/A46); Large employment sites nearby; distribution centre onsite; easy access to Newark, Nottingham and Lincoln; not brownfield land and area for development seems limited; doesn't appear to have a strong grid connection
10	Bassetlaw Garden Village	D2N2	Large area for development; potential for new P&R railway station (Sheff/Lincoln); major road interchange (A1/A57); close to substation; close to commercial site; close to leisure site (country park); employment/leisure/retail in new village

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11	Chesterfield A38 Jn	D2N2	Brownfield land although further area for development seems limited; next to substation; major road interchange (A38/A617/A619); link to Chesterfield town centre
12	M1 Jn 28	D2N2	Several large employment sites, including a distribution centre nearby; major interchange (M1/A38); large retail park adjacent; near to solar farm; links to Nottingham and Mansfield; land available for development not clear and not brownfield
13	Toton Hub	D2N2	Development for EM HS2 Hub; lots of public transport links; will be employment sites nearby; close to M1 jn; link between Notts and Derby
14	Spondon Industrial Estate	D2N2	Onsite substation; on major road Notts to Derby; large area of brownfield; near to major employers (Rolls Royce, ST); retail and leisure sites nearby
15	Infinity Park	D2N2	Large development planned; major employment sites; substation onsite; close to major roads but not at a major interchange; area available for hub site not immediately obvious but assume large area available for development; easy link to Derby city centre
16	Branston Interchange	D2N2	Site of former powerstation with substation onsite; large employment sites and distribution centres; major road; access to Burton on Trent
17	East Midlands Gateway	Leicester & Leicestershire	Major employment sites; airport and public transport links; large distributions centres; substation onsite; at M1 Jn 24/23A; links to Derby/Notts/Loughborough; not brownfield but large area for development
18	Hilltop Industrial Estate - Coalville	Leicester & Leicestershire	Substation onsite; large employment sites; close to M1 jn; major distribution centres; no brownfield land
19	Fosse Park - Enderby P&R	Leicester & Leicestershire	Several large employment site nearby; large retail park; already a P&R site; major interchange of M69 and M1; no substation onsite; not brownfield but large area based around existing P&R
20	Magna Park	Leicester & Leicestershire	Major employment site with several distribution centres; substation on site; road interchange with link to M1; links to Leicester and Coventry; new development planned at Lutterworth; not brownfield
21	Hinckley West	Leicester & Leicestershire	Primary substation onsite; large industrial/commercial estates with several distribution centres; on major road (A5) and close to junction with M69; no brownfield land
22	Birch Coppice Business Park	Coventry and Warwickshire	Large employment centre; substation onsite; major interchange A5/M42; link to Tamworth (Drayton Manor)/Bham/Nuneaton; international freight terminal and several distribution centres; not brownfield
23	Dunton Interchange	Coventry and Warwickshire	Large area of brownfield land available; large industrial sites including rail freight distribution centre; substation on opposite side of the motorway but adjacent to Severn Trent site so likely to have a strong grid

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			connection; major interchange M6/M42; rail link to Cov and Birmingham
24	Anstey Park	Coventry and Warwickshire	Not brownfield but hub development already planned here; major interchange; several large employment areas (industrial and commercial); primary substation onsite; link into Coventry
25	Binley Services	Coventry and Warwickshire	Not brownfield but EV charging infrastructure development already planned onsite; not at a major interchange but between two A46 jns; close to industrial park and Coventry airport
26	The Shires	Coventry and Warwickshire	Major road and interchange; close to substation; large retail/industrial sites with distribution centres; new housing development nearby; land available for development appears limited; easy access to Warwick and Leamington Spa
27	Blythe Valley Business Park	Greater Birmingham & Solihull	Large employment site; new residential development adjacent; no substation onsite; several other large business parks nearby; land available to develop seems limited and not brownfield; logistics company onsite; at M42 interchange; link into Solihull
28	UK Central Hub	Greater Birmingham & Solihull	Large employment/leisure sites; airport; HS2 development and other rail links; interchange of M42; good grid connection; link between Birmingham and Coventry; could develop on existing car park or at HS2 site
29	Tyseley Energy Park	Greater Birmingham & Solihull	Low carbon recharging/fuelling station already planned onsite; strategic location between airport and Birmingham low carbon power plant onsite; large employment site; area of land for development seems limited and potentially too residential nearby; rail link
30	Heartlands Park - M6 Jn 6	Greater Birmingham & Solihull	Large area of brownfield, close to high traffic flow major junction, access to substation the other side of the motorway, proximity to large industrial and commercial sites and Star City leisure park, easy access into Birmingham
31	Rugeley Power Station	Greater Birmingham & Solihull	Zero carbon development on brownfield land (residential, but with on-site renewables generations); large employment site nearby; at interchange but not particularly major; train link between Stoke on Trent and Lichfield
32	Wolstanton Junction	Stoke on Trent & Staffordshire	Large area of brownfield land; no substation but site of former sewer works so potential for good grid connection; large retail sites other employment sites nearby, between 2 major junctions leading to Stoke on Trent
33	Trentham Lakes North	Stoke on Trent & Staffordshire	Brownfield site; between several major interchanges of A50; large retail/commercial/leisure sites and distribution centres nearby; no substation onsite

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34	Redhill Business Park	Stoke on Trent & Staffordshire	Next to major M6 interchange; large employment site; link between Stafford and Stoke on Trent; no substation onsite; not brownfield
35	Moseley Green (i54)	Stoke on Trent & Staffordshire	Large brownfield site and large development happening at nearby i54 site; near to primary substation; several large employment sites nearby; between two junctions of M54; link between Wolverhampton and Stoke on Trent;
36	Bilston (Meadwood Industrial Estate)	Black Country	Large area of brownfield land; at major road interchange; close to several large employment sites; close to Midland Metro station (Wolves to Bham); no primary substation nearby but potentially a good grid connection due to proximity to tram; position potentially too close to residential areas
37	Phoenix 10	Black Country	Large area of brownfield with local development plans, close to major interchange, access to Walsall and West Brom, near to industrial estates and retail park, potential for new train station
38	Great Barr - M6 Jn 10	Black Country	Major interchange with large traffic flow; large area of brownfield land; access to Walsall & West Brom; no substation nearby and no attractions/employment sites; potential issues with access to site being through residential areas
39	Merry Hill	Black Country	Brownfield site/large carparks nearby; large retail/leisure sites; major road and near to interchange; not close to substation but appears to have good grid connection; potentially too residential and restricted with developing site beyond the initial 10 acres
40	Kidderminster Stourport Road Business Park	Worcestershire	Brownfield land available; major road between Kidderminster and Stourport but not a major interchange; no substation onsite; large employment site and proximity to large fleets;
41	Hartlebury Trading Estate	Worcestershire	Site of large industrial estate; proximity to major road but not an interchange; not brownfield land; train station onsite, no substation onsite
42	Park Farm Industrial Estate	Worcestershire	Large industrial estate; substation onsite; not brownfield and limited land for development; at major interchange; potentially too close to residential areas; links to Redditch/Bromsgrove/Stratford upon Avon
43	Vale Business Park - Evesham	Worcestershire	Several large employment sites; major road; no substation onsite but proximity to solar farm; no brownfield land
44	Worcester Sixways	Worcestershire	Known interest in development at site although area for development appears limited; near to several major employment sites; at major M5 jn; used to be P&R, no substation onsite
45	Rotherways Industrial Estate	The Marches	No brownfield land for development; large employment sites and distribution centres; not close to major interchange but within easy access of A49; substation not onsite
46	Telford Services	The Marches	At major interchange of M54; close to large retail/leisure and employment sites (including University); already a service station at junction; no substation onsite; no brownfield land

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47	Halesfield	The Marches	Large employment (industrial) site; near major interchange; no brownfield land; substation onsite; road link Telford/Kidderminster
48	Meole Brace P&R	The Marches	Existing P&R site; at major road interchange; close to large retail and leisure site; no substation onsite; not brownfield
49	Battlefield Enterprise Park	The Marches	ERF facility and substation onsite; large employment areas; close to major road interchange; existing P&R onsite; retail and leisure facilities onsite; no brownfield land but development already happening here
50	Mile End Services	The Marches	Major road interchange linking Wales and Chester; service station (with EVSE) already onsite; adjacent to large employment and retail sites; no brownfield land; substation in opposite industrial site

7 Appendix B: Feedback on shortlist by LEP

LEP	Feedback
Black Country	Shortlist accepted without additional feedback
Coventry and Warwickshire	Shortlist accepted without additional feedback
D2N2	Agreement on criteria. General approval of shortlist with suggestion of some reordering due to planning for another development by the council at the Spondon site (Site 14). If this site were removed, then the Bassetlaw Garden Village site (Site 10) would be in the top 3 ranked sites for D2N2.
Greater Birmingham and Solihull	Agreement on criteria weighting and approval of shortlist
Greater Lincolnshire	Shortlist accepted without additional feedback
Leicester and Leicestershire	Approval of shortlist and suggestion of a further pass over shortlisted sites to determine which would be the sites best situated for a network of hubs according to the distance between them.
The Marches	Shortlist accepted without additional feedback
Stoke on Trent and Staffordshire	Agreement on criteria weighting and approval of shortlist
Worcestershire	Shortlist accepted without additional feedback

8 Appendix C: List of stakeholders

The following list of stakeholders were captured during stage 1. In the stage review meeting, it was agreed that this project's time should be focused on the site identification and ranking, and so the list is reported here to support any future work.

- Olly Frankland (Regen)
- Energy Capital
- Birmingham Airport
- Solihull UK Central
- WMCA/TfWM
- Midlands Connect
- Harjot Rayet (Telford & Wrekin Council)
- Adrian Cooper (Shropshire Council)
- Chris Styche (Black Country LEP)
- Oliver Thomas (Wolverhampton)
- Notts Transport Officers Group
- Karen Johnson (Bassetlaw Garden Village)
- Richard Lovell (Derbyshire)
- Tom Goshawk (Infinity Park)
- Tony Gascoigne (Derby)
- David Horsefall (Tyseley Energy Park)
- Birmingham Energy Institute
- ENGIE
- Richard Vaughan (Herefordshire Council)
- University of Wolverhampton
- University Centre Shrewsbury
- Veolia
- Clive Thomson (Staffordshire Council)
- Andrew Brooks (Lincolnshire Council)
- Business members of the Low Carbon Steering Group:
 - Arup
 - Adelan
 - Baxi
 - Bryt Energy
 - Cadent
 - Centrica
 - CNG Services
 - Ecuity Consulting
 - E.ON
 - Faraday Battery
 - FuturEnergy
 - IPV Flexgen
 - McCamley
 - Ablaze Green Energy Solutions
 - National Grid
 - PyroGenesysSinergia UK
 - Tonik Energy)
 - Gazeley (Magna Park)
 - East Midlands Airport
 - Pete Mathieson (Notts CC)
 - Leicester/Leicestershire Council land ownership
 - AceOn
 - Chris Carter (Nottingham)
 - Martin Rowe (Worcestershire)



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Transport



Energy
Infrastructure



Knowledge
& Enterprise

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