

Yorkshire GREEN Project

Environmental Impact Assessment

Preliminary Arboricultural Impact Assessment
October 2021

nationalgrid

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Arboricultural Impact Assessment

1. Arboricultural Impact Assessment

1.1 Introduction

- 1.1.1 This report presents the preliminary assessment of the likely preliminary arboricultural impacts associated with key aspects of the Project including the likely extent of tree and tree group removals and areas of known impact to trees which could impact on tree health for specific operational areas of the Project.
- 1.1.2 The preliminary assessment is based on information obtained to date. It should be read in conjunction with the Project description provided in the Preliminary Environmental Information Report (PEIR) **Chapter 3: Description of the Project** and with respect to relevant parts of the following chapters:
- **Chapter 6: Landscape and Visual Amenity** (in relation to the loss of trees and proposed mitigation measures); and
 - **Chapter 8: Biodiversity** (in relation to the loss or impact of trees and hedgerows).
- 1.1.3 This preliminary arboricultural impact assessment describes:
- the legislation, policy and technical guidance that has informed the assessment (**Section 1.2**);
 - consultation and engagement that has been undertaken and how comments from consultees relating to arboriculture have been addressed (**Section 1.3**);
 - the methods used for baseline data gathering (**Section 1.4**);
 - overall baseline (**Section 1.5**);
 - embedded measures relevant to arboriculture (**Section 1.6**);
 - the scope of the assessment for arboriculture (**Section 1.7**);
 - the methods used for the assessment (**Section 1.8**);
 - the preliminary assessment of arboricultural impacts (**Section 1.9**);
 - an outline of further work to be undertaken (**Section 1.10**).

Project overview

- 1.1.4 In summary Yorkshire GREEN comprises the following new infrastructure within the draft Order Limits:
- Shipton North and South 400kV cable sealing end compounds (CSECs);
 - The YN 400kV overhead line (north of the proposed Overton Substation);
 - Overton 400/275kV Substation;
 - Two new sections of 275kV overhead line south of Overton Substation: the XC 275 kV overhead line to the west and the SP 275kV overhead line to the east;
 - Tadcaster Tee West and East 275kV CSECs; and

- Monk Fryston 400kV Substation (adjacent to the existing substation).

1.1.5 Works to existing infrastructure within the draft Order Limits would comprise:

- Replacement of one pylon on the 2TW/YR 400kV overhead line;
- Works to the existing XC/XCP Monk Fryston to Poppleton overhead line comprising a mixture of decommissioning, replacement and realignment east of Moor Monkton and reconductoring works south of Moor Monkton. This overhead line would be reconfigured at its southern end to connect into the new substation at Monk Fryston;
- Replacement of one pylon on the Tadcaster Tee to Knaresborough (XD/PHG) 275kV overhead line route;
- Reconfiguration and removal of a short span of the Monk Fryston to Eggborough 400kV 4YS overhead line to connect this overhead line into the new substation at Monk Fryston; and
- Minor works at Osbaldwick Substation comprising the installation of a new circuit breaker and isolator along with associated cabling, removal and replacement of one gantry and works to one existing pylon. All works would be within existing operational land.

1.1.6 Please refer to **PEIR Chapter 3: Description of the Project** and **PEIR Figures 1.1** and **1.2** for an overview of the different components of the Project.

Limitations and assumptions

- 1.1.7 The information provided in this Arboricultural Impact Assessment is preliminary, the final assessment of likely arboricultural impacts will be reported in support of the Environmental Statement (ES).
- 1.1.8 Due to the extensive nature of the Site and land access requirements, detailed tree surveys are ongoing and will be completed (subject to obtaining land access) to inform the Arboricultural Impact Assessment that will accompany the DCO (see **Section 1.10**). Tree surveys are being targeted to focus on those areas where trees are likely to be impacted.
- 1.1.9 At this stage and based on the current Project design, it is proposed not to undertake detailed tree surveys for those areas within the draft Order Limits where works will not impact on tree canopies or Root Protection Areas (RPA). Instead high-level baseline data set illustrating tree cover has been used to inform the assessment (based on Lidar and aerial imagery) as set out in section 8.7 of the Scoping Report. This high-level baseline dataset generally includes vegetation above 5m in height and therefore may exclude some formally maintained or lower growing hedgerows. For the updated assessment which will support the DCO application, habitat mapping produced as part of the Ecological Phase 1 Report (**Appendix 8C** of the PEIR) will be used to map hedgerow features and to evaluate associated impacts from the Project in areas where detailed tree surveys are not otherwise required.
- 1.1.10 At this stage, only partial detailed tree survey data is available for some areas of the Study Area (the area located within the draft Order Limits where detailed surveys are considered necessary). Where detailed data is not currently available, the high-level baseline data set illustrating tree cover has been relied upon and as such for these areas no consideration of tree quality or value is currently possible. Therefore, impacts are assessed in terms of the area of tree canopy cover (in m²) likely to be removed or at risk of removal or impact.

1.2 Relevant legislation, planning policy and technical guidance

1.2.1 This section identifies the legislation, planning policy and technical guidance that has informed the assessment of preliminary impacts with respect to arboriculture. Further information on policies relevant to the Project is provided in **Chapter 5: Legislation and Policy Overview** of the PEIR.

Legislation

1.2.2 A summary of the relevant legislation is given in **Table 1.1**.

Table 1.1 Legislation relevant to the arboriculture assessment

Legislation	Legislative context
Town and Country Planning Act 1990 (as amended) ¹ and; Town and Country Planning (Tree Preservation) (England) Regulations 2012 ²	The law on Tree Preservation Orders (TPOs) is contained within Part VIII of the Town and Country Planning Act 1990 as amended and in the Town and Country Planning (Tree Preservation) (England) Regulations 2012 which came into force on 6 April 2012. Section 192 of the Planning Act 2008 made further amendments to the 1990 Act which allowed for the transfer of provisions from within existing Tree Preservation Orders to regulations. Part 6 of the Localism Act 2011 amended section 210 of the Town and Country Planning Act 1990 concerning time limits for proceedings in regard to non-compliance with Tree Preservation Order regulations. A Tree Preservation Order is an order made by a local planning authority in England to protect specific trees, groups of trees or woodlands in the interests of amenity.
The Forestry Act 1967 ³	The Forestry Act creates the legal framework for the felling of trees in England and also includes provisions for restocking requirements. A licence is required to fell any growing trees unless an exception applies. Exceptions include; the removal of less than 5 cubic metres of timber per calendar quarter, felling trees smaller than 8cm diameter or coppicing trees of 15cm diameter, the removal of trees in churchyards, gardens or public open spaces, felling trees to abate a nuisance or prevent a danger, felling trees immediately required to implement full planning consent, felling trees to satisfy an obligation in accordance with an act of parliament and tree removals by or necessary tree removals on behalf of a statutory undertaker.

¹ The Town and Country Planning Act 1990 (as amended) (online) available at <https://www.legislation.gov.uk/ukpga/1990/8/contents> (Accessed 15 September 2021)

² The Town and Country Planning (Tree Preservation) (England) Regulations 2012 (online) available at <https://www.legislation.gov.uk/uksi/2012/605/made?view=plain> (Accessed 15 September 2021)

³ The Forestry Act 1967 (online) available at <https://www.legislation.gov.uk/ukpga/1967/10?view=extent> (Accessed 15 September 2021)

Legislation

Legislative context

The Hedgerow Regulations 1997⁴

The Hedgerow Regulations (1997) protect agricultural or countryside hedgerows which meet the requirements of an 'important hedgerow'. These include a minimum length of 20m (or meets another hedge at each end) and a minimum age of at least 30 years. A wide range of other ecological and archaeological/heritage features can constitute an important hedgerow and further advice from a qualified ecologist is recommended in advance of any planned works which could impact established hedgerows on or bordering agricultural or countryside land. Prior to the removal or destruction of a protected hedgerow an application must be made to the Local Planning Authority. Full planning consent is an exemption to this requirement.

Occupiers Liability Act 1957⁵

The Occupiers Liability Act 1957 confers a duty on an occupier to take reasonable care to ensure that visitors to the property are safe from harm. In 1984 the scope of the act was extended to include uninvited visitors including trespassers. This duty to the uninvited is limited to those dangers which the occupier is aware of, those dangers that the uninvited are likely to be foreseeably exposed to (i.e. they will be in the area near hazardous trees) and those dangers which the occupier could be reasonably expected to take steps to protect visitors (invited or otherwise) from. The 1957 Act also indicates in section 2(3) (a) that occupiers need to be prepared for the fact that children may not be as risk aware or as careful as adults and finally it includes a consideration of the nature and circumstances of the occupier(s) and the reasonableness of any steps to help prevent injury. Prosecutions under this act are generally restricted to civil law cases and fall under the tort of negligence.

Planning policy

1.2.3 A summary of the relevant national and local planning policy is given in **Table 1.2**.

Table 1.2 Planning policy relevant to the arboriculture assessment

Policy

Policy context

National planning policy

⁴ The Hedgerow Regulations 1997 (online) available at <https://www.legislation.gov.uk/ukxi/1997/1160/regulation/12/made> (Accessed 15 September 2021)

⁵ The Occupiers Liability Act 1957 (online) available at <https://www.legislation.gov.uk/ukpga/Eliz2/5-6/31/section/2> (Accessed 15 September 2021)

Policy	Policy context
Overarching National Policy Statement for Energy (EN-1) ⁶	<p>The main points of the Government’s biodiversity strategy are to ensure a halting, and if possible, a reversal of declines in priority habitats and species, with wild species and habitats as part of healthy, functioning ecosystems; and the general acceptance of biodiversity’s essential role in enhancing the quality of life; and to take account of the context of the challenge of climate change.</p> <p>In relation to Ancient Woodland the policy states that the Secretary of State should not grant development consent for any development that would result in its loss or deterioration unless the benefits (including need) of the development, in that location outweigh the loss of the woodland habitat. It also provides for the consideration of aged or ‘veteran’ trees where found outside Ancient Woodland considering their value particularly for biodiversity and stating that their loss should be avoided.</p>
National Policy Statement for Electricity Networks Infrastructure (EN-5) ⁷	<p>Section 2.8.5 sets out guidelines for the routeing of new overhead lines based on the Holford Rules (developed by Lord Holford in 1959). The guidelines have been subsequently reviewed and updated and should be followed by developers when designing new overhead lines. The Holford Rules requirements in relation to trees include routing overhead lines to maximise the screening benefit of trees.</p> <p>Section 2.8.11 identifies mitigation for new overhead lines which can include off site tree and hedgerow planting to provide screening and to soften visual impacts, although this would require agreement with relevant landowners.</p>
National Planning Policy Framework (NPPF) ⁸	<p>The NPPF seeks to ensure that new development is sustainable and underlines the importance of Green Infrastructure, of which trees form an integral part. This encompasses a recognition of the importance of trees in relation to the management of air, soil and water quality along with other associated ecosystem services and climate change adaptation. The NPPF also seeks to achieve the protection and enhancement of landscapes and a net gain in biodiversity. Finally, it specifically identifies veteran and ancient trees and woodland as a highly valuable and irreplaceable habitat and that planning permission should be refused for any development that would result in any loss or damage to trees of this nature unless there are ‘wholly exceptional’ circumstances.</p>

⁶ Department of Energy and Climate Change (2011) Overarching National Policy Statement for Energy (EN-1) (online) available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf (Accessed 15 September 2021)

⁷ Department of Energy and Climate Change (2011). *National Policy Statement for Electricity Networks Infrastructure (EN-5)*. [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/37050/1942-national-policy-statement-electricity-networks.pdf [Accessed 31 March 2021].

⁸ Ministry of Housing, Communities and Local Government (2021) National Planning Policy Framework (online) available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf (Accessed 15 September 2021)

Policy**Policy context**

Local planning policy

Harrogate District Local Plan, 2014-2035⁹

Policy NE7 Trees and Woodlands states that development must protect and enhance existing trees of value unless there are “clear and demonstratable” reasons why tree removal is preferential for development.

Proposals which cause damage or loss to ancient or veteran trees and/or trees subject to a tree preservation order will not be permitted unless there is an overriding need for the development and where there is no alternative for the development’s location.

Policy NE7 states the requirements for new tree planting to mitigate against tree removal, to be required on-site. Where this is not feasible, off-site planting may be undertaken.

Harrogate Borough Council, Tree and Woodland Policy, 2016-2021¹⁰

Policy 45 states that the Council will refer to the Trees & Design Action Group (TDAG) 2014 publication “Trees in Hard Landscapes – A Guide for Delivery”¹¹ when commenting on applications for development.

Policy 46 requires planning applications relating to trees to be submitted in accordance with BS5837:2012¹².

Tree retention is identified as being secured by three primary actions in Policy 47, through the creation of Tree Preservation Orders (TPO); through conditions of planning permission; and by ensuring planning conditions include replacement planting which will be monitored and enforced.

Policy 48 requires all new tree planting to be in keeping with local landscape character; planted in accordance with BS 8545:2014¹³; and to be replaced where any new tree planting fails within five years of development completion.

Hambleton Local Development Framework: Core Strategy Development Plan Document, 2007¹⁴

CP16 states that development will be support where the District’s natural assets are enhanced, with particular support to improve the natural environment where it is poor and lacking in diversity. Development will not be supported which has a detrimental impact on the interests of natural assets, with mitigation and/or compensation required to address harmful implications of development.

⁹ Harrogate Borough Council (2020). *Harrogate District Local Plan 2014-2035*. (online). Available at: <https://www.harrogate.gov.uk/planning-policy-guidance/harrogate-district-local-plan-2014-2035> (Accessed 31 March 2021).

¹⁰ Harrogate Borough Council (2016) Harrogate Borough Council Tree and Woodland Policy 2016-2021 (online) available at <https://www.harrogate.gov.uk/downloads/file/2724/trees-and-woodland-policy-2016-2021> (Accessed 15 September 2021)

¹¹ Trees and Design Action Group (2014). *Trees in Hard Landscapes – A Guide for Delivery*. (online) available at: https://www.tdag.org.uk/uploads/4/2/8/0/4280686/tdag_tihl.pdf (Accessed 29 September 2021).

¹² British Standards Institute (2012) BS5837 Trees in relation to design demolition and construction – Recommendations. BSI.

¹³ British Standards Institute (2014) *Trees: from nursery to independence in the landscape – Recommendations*. BSI

¹⁴ Hambleton District Council (2007) *Hambleton Local Development Framework Core Strategy Development Plan Document* (online) available at <https://www.hambleton.gov.uk/downloads/download/277/core-strategy-development-plan-documents> (Accessed 15 September 2021)

Policy	Policy context
Hambleton Development Policies Development Plan Document, 2008 ¹⁵	Policy DP10 identifies that permission for development will only be granted where it respects, by protecting or enhancing, the intrinsic qualities of open areas that have particular importance in contributing to the identity or character of settlements, including protected trees and woodlands.
Hambleton Local Plan – Publication Draft, 2019	<p>Section 6.40 identifies the importance of protecting and enhancing ancient woodland and veteran trees. Their loss will only be permitted “<i>where the benefits of development in that location can clearly be demonstrated to outweigh their loss.</i>”</p> <p>Policy E4 identifies that the Council will seek to protect existing green infrastructure, secure improvements to its safety and accessibility and secure net gains to green infrastructure provision.</p> <p>Policy E7 states that proposals will be supported where they seek to conserve and enhance any existing tree, hedgerow or woodland of value that would be affected by development.</p> <p>Policy E7 requires that mitigation from harm to trees by development is to be achieved through new tree planting; and sustainable tree management programmes.</p> <p>Section 6.74 identifies that the Council will encourage proposals which seek to increase the planting of trees, woodland and hedgerows</p>
York 2005 Draft Development Control Local Plan (approved for the purpose of making development control decisions)	<p>Section 2.32 identifies the requirement for the retention of important trees in new developments.</p> <p>Policy NE1: Trees, Woodlands and Hedgerows states that development will be refused which results in loss or damage to trees; will require the adequate protection of trees and hedgerows which are to be retained; and important trees will be protected through the creation of TPOs.</p> <p>Policy NE1 requires appropriate replacement planting for tree removals, with development required to make provision for planting of new trees as part of landscaping schemes.</p> <p>Section 3.11 further states the requirement for mitigation for tree loss stating “<i>...conditions will be attached to require both replacement planting to compensate for any trees lost as a result of development activity on the site, and a replacement scheme for any protected trees on the site, which die within a specified time period following development (usually 5 years). In many cases a financial contribution, in the form of a bond, will be required from developers towards the protection of trees during construction and the implementation of the approved landscaping</i></p>

¹⁵ Hambleton District Council (2008) Hambleton Development Policies DPD (online) available at <https://www.hambleton.gov.uk/downloads/download/281/development-policies-dpd-documents> (Accessed 15 September 2021)

Policy	Policy context
<p>City of York draft Local Plan - Publication Draft, 2018</p>	<p><i>scheme. This bond would then be returnable on completion of the development.”</i></p> <p>Policy GI4 Trees and Hedgerows states: <i>Development will be supported where it:</i></p> <ul style="list-style-type: none"> <i>i. recognises the value of the existing tree cover and hedgerows, their biodiversity value, the contribution they can make to the quality of a development, and its assimilation into the landscape context;</i> <i>ii. provides protection for overall tree cover as well as for existing trees worthy of retention in the immediate and longer term and with conditions that would sustain the trees in good health in maturity;</i> <i>iii. retains trees and hedgerows that make a positive contribution to the character or setting of a conservation area or listed building, the setting of proposed development, are a significant element of a designed landscape, or value to the general public amenity, in terms of visual benefits, shading and screening.</i> <i>iv. does not create conflict between existing trees to be retained and new buildings, their uses and occupants, whether the trees or buildings be within or adjacent to the site; and</i> <i>v. supplements the city’s tree stock with new tree planting where an integrated landscape scheme is required</i>
<p>Minerals and Waste Joint Plan (North Yorkshire CC, York City Council, North York Moors National Park Authority)¹⁶ - Draft Publication</p>	<p>Policy D07 Biodiversity and Geodiversity, section 3 states: <i>Development which would have an unacceptable impact on the notified special interest features of a SSSI or a broader impact on the national network of SSSIs, or the loss or deterioration of ancient woodland or aged or veteran trees, will only be permitted where the benefits of the development would clearly outweigh the impact or loss.</i></p>
<p>Leeds City Council: Saved UDP 2001¹⁷ and UDP Review 2006 policies¹⁸¹⁹</p>	<p>Policy N20 identifies that removal of trees within a Conservation Area will be resisted.</p> <p>Section 4.3.6 identifies that all development is subject to considerations including the retention of trees and should avoid environmental intrusion and loss of amenity. Development should reflect concepts of sustainability.</p>

¹⁶ North Yorkshire County Council, York City Council, North York Moors National Park Authority (2017) Minerals and Waste Joint Plan (online) available at <https://www.northyorks.gov.uk/minerals-and-waste-joint-plan> (Accessed 15 September 2021)

¹⁷ Leeds City Council (2001) Unitary Development Plan (online) available at <https://www.leeds.gov.uk/planning/planning-policy/adopted-local-plan/unitary-development-plan> (Accessed 15 September 2021).

¹⁹ Leeds City Council (2006) Unitary Development Plan Review (online) available at <https://www.leeds.gov.uk/planning/planning-policy/adopted-local-plan/unitary-development-plan> (Accessed 15 September 2021)

Policy	Policy context
Leeds City Council Natural Resources and Waste Local Plan, 2015 ²⁰	Policy Land 2: Development and Trees states that development should conserve trees wherever possible and include new tree planting in designs. Where trees are to be removed, an expected replacement standard of three to one will be required on the site, forming part of the landscaping scheme. Where this cannot be achieved, either off site planting or agreed financial contributions will be required.
Leeds City Council Supplementary Guidance No. 25 Greening the built edge ²¹	Section 3.4 identifies that tree surveys should extend up to 10m beyond the site boundary to take due account of off-site features. Section 9.7 identifies that trees, either existing or proposed, may be protected by a TPO.
Leeds City Council Core Strategy (as amended by the Core Strategy Selective Review 2019) Leeds Local Plan, 2014 ²²	Policy G1: Enhancing and Extending Green Infrastructure states that development proposals should ensure that green infrastructure and/or corridors are retained and improved; the green infrastructure is extended; that opportunities are taken to increase woodland cover; and provision of biodiversity and its retention are identified. Policy G2: Creation of New Tree Cover states that development which results in harm to, or the loss of Ancient Woodland and Veteran Trees will be resisted.
Selby District Local Plan (saved policies), 2005 ²³	Policy ENV1 identifies that when considering granting planning permission, the potential loss of and impact to trees will be considered.
Selby District Core Strategy Local Plan, 2013 ²⁴	Policy SP15 Sustainable Development and Climate Change Section B. Design and Layout of Development states: In order to ensure development contributes toward reducing carbon emissions and is resilient to the effects of climate change, schemes should where necessary or appropriate: e) Include tree planting, and new woodlands and hedgerows in landscaping schemes to create habitats, reduce the ‘urban heat island effect’ and to offset carbon loss.

Technical guidance

1.2.4 A summary of the technical guidance for arboriculture is given in **Table 1.3**.

²⁰ Leeds City Council (2013) Leeds City Council Natural Resources and Waste Local Plan (online) available at <https://www.leeds.gov.uk/planning/planning-policy/adopted-local-plan/natural-resources-and-waste-local-plan> (Accessed 15 September 2021).

²¹ Leeds City Council (1996) Supplementary Planning Guidance No. 25 Greening the Built Edge (online) available at: <https://www.leeds.gov.uk/docs/Greening%20the%20built%20edge%20SG%20No%2025.pdf> (Accessed 15 September 2021).

²² Leeds City Council (2014) Leeds City Council Core Strategy (as amended by the Core Strategy Selective review 2019) (online) available at <https://www.leeds.gov.uk/planning/planning-policy/adopted-local-plan/core-strategy-introduction> (Accessed 15 September 2021).

²³ Selby District Council (2005) Selby District Council Local Plan (saved policies) (online) available at <https://www.selby.gov.uk/selby-district-local-plan-sdlp-2005> (Accessed 15 September 2021).

²⁴ Selby District Council (2013) Selby District Council Core Strategy Local Plan (online) available at https://www.selby.gov.uk/sites/default/files/Documents/CS_Adoption_Ver_OCT_2013_REDUCED.pdf (Accessed 15 September 2021).

Table 1.3 Technical guidance relevant to the arboriculture assessment

Technical guidance document	Context
British Standards BS5837:2012 Trees in relation to design, demolition and construction - Recommendations ¹²	Gives recommendations and guidance on the relationship between trees and design, demolition and construction processes taking account of current practice regarding planning for the management, protection and planting of trees in the vicinity of structures, and for the protection of structures near trees. It sets out the principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and structures.
National Joint Utilities Group (NJUG) Vol 4 Issue 2 – Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees. 2007 ²⁵	Technical guidance to allow the co-existence of trees and utility apparatus where they are required to share available space both above and below ground.
BS3998:2010 Tree Work - Recommendations ²⁶	Guidance on the management options for established trees and overgrown hedges including the impact of that work both on the individual tree and in relation to neighbouring trees.
BS8545:2014 Trees: from nursery to independence in the landscape - Recommendations ¹³	This British Standard gives recommendations for transplanting young trees successfully from the nursery, through to achieving their eventual independence in the landscape, specifically covering the issues of planning, design, production, planting and management.

1.3 Consultation and engagement

- 1.3.1 A Scoping Opinion was adopted by the Secretary of State, administered by the Planning Inspectorate, on 28 April 2021. A summary of the relevant responses received in the Scoping Opinion in relation to arboriculture and confirmation of how these have been addressed within this report to date is presented in **Table 1.4**.
- 1.3.2 It should be noted that the information provided in this report is preliminary and therefore not all of the Scoping Opinion comments have been addressed at this stage. All comments will be addressed prior to application submission.

²⁵ National Joint Utilities Group (NJUG) (2007) Vol 4 Issue 2 – Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees. (online) available at <http://streetworks.org.uk/wp-content/uploads/V4-Trees-Issue-2-16-11-2007.pdf> (Accessed 15 September 2021).

²⁶ British Standards Institute (2010) Tree work – Recommendations. BSI

Table 1.4 Summary of EIA Scoping Opinion responses for arboriculture

Consultee	Consideration	How addressed in this PEIR
Planning Inspectorate	Osboldwick Substation was proposed to be scoped out of the assessment as it is existing operational land. The scoping response highlighted that as a worst case land to the east of the Substation may be impacted by the Project and therefore should be included in the Arboricultural Impact Assessment.	Trees at Osboldwick Substation are considered as part of the preliminary Arboricultural Impact Assessment and will be considered for detailed tree surveys to inform future reporting.
Planning Inspectorate	The Planning Inspectorate highlight that the ES should set out how the Project has been developed to avoid trees and requires that where tree loss is unavoidable the ES sets out construction will avoid or minimise damage.	The preliminary Arboricultural Impact Assessment will identify likely areas of impact to important arboricultural features. Following feedback from consultation, design amendments will be proposed to reduce or avoid significant impacts where possible/appropriate and a comprehensive Arboricultural Impact Assessment will be completed for the ES (as set out in Section 1.10).
Planning Inspectorate	The Planning Inspectorate highlight that Ancient Woodland <2Ha may not be included on the Ancient Woodland Inventory and request that the ES should assess significant effects on Ancient Woodland and seek to avoid direct impacts to Ancient Woodland and veteran trees and ensure no increase in the fragmentation of these habitat types.	Information and survey results supporting Chapter 8: Biodiversity of the PEIR will be consulted to identify any areas of woodland <2ha which may qualify as Ancient Woodland. A minimum buffer of 15m will be added to these features where identified, and this will be achieved through further design work post Section 42 consultation. The preliminary Arboricultural Impact Assessment will identify any instances within the study area where known Ancient Woodland or veteran trees are at risk of impact by the Project. Following feedback from consultation, design amendments will be proposed to reduce or avoid significant impacts where possible/appropriate.
Planning Inspectorate	The Planning Inspectorate accept the proposed approach to scope out reconductoring areas from the detailed tree survey and to rely on	Trees at Osboldwick Substation are considered as part of the preliminary Arboricultural Impact Assessment and will be considered for detailed

Consultee	Consideration	How addressed in this PEIR
	high level tree assessment data and guidance on working methodologies, however the requirement to consider a detailed tree survey at Osbaldwick is reiterated.	tree surveys to inform the Arboricultural Impact Assessment as part of the ES.
North Yorkshire County Council	Generally supportive of the proposed approach for arboriculture and reiterates that the assessment should adhere to BS5837 ¹² and stresses the importance of considering existing vegetation in relation to the ongoing screening of the Site.	The assessment adheres to the principles of BS5837 ¹² . Consideration of the potential screening impacts associated with any loss of tree features will be taken into account in Chapter 6: Landscape and Visual Amenity of the PEIR and ES.
Natural England	Natural England highlight that ancient woodland is irreplaceable and that the ES should give regard to the guidance in the NPPF which states that development resulting in the loss or deterioration of ancient woodland or veteran trees should be refused unless there are wholly exceptional reasons, and a suitable compensation strategy is in place.	The preliminary Arboricultural Impact Assessment will assess the likely impact on known veteran or ancient trees and ancient woodland and where features of this nature are at risk following feedback from consultation, design amendments will be proposed to reduce or avoid significant impacts where possible/appropriate.

1.4 Data gathering methodology

Study Area

- 1.4.1 The wider arboriculture Study Area (**Figure 1.1 to 1.5**) encompasses the operational components (substations, new overhead line, CSECs) and other components (access, existing overhead lines to be reconducted) of the Project.
- 1.4.2 As described in **Section 1.1**, new infrastructure proposed as part of the Project falls within three broad areas: North West of York Area, Tadcaster, and Monks Fryston Area (**Chapter 3: Description of the Project** of the PEIR, specifically **Section 3.2** provides more information on these three areas).
- 1.4.3 Other components forming the Project that have informed the definition of the wider Study Area are:
- Minor works at Osbaldwick Substation comprising the installation of a new circuit breaker and isolator along with associated cabling, removal and replacement of one gantry and works to one existing pylon. All works would be within existing operational land.
 - Works to the existing XC/XCP Monk Fryston to Poppleton overhead line comprising a mixture of decommissioning, replacement and realignment east of Moor Monkton and reconducting works south of Moor Monkton with line reconfigured at its southern end to connect into the new substation at Monk Fryston.

- Replacement of a suspension pylon with a proposed tension pylon on the existing Tadcaster Tee to Knaresborough (XD/PHG) 275kV overhead line at Tadcaster.
- Reconfiguration and removal of a short span of the Monk Fryston to Eggborough 400kV 4YS overhead line to connect this overhead line into the new substation at Monk Fryston.

1.4.4 The arboricultural Study Area comprises temporary construction locations as well as permanent operational infrastructure. Works at the existing Osbaldwick Substation have been included, however, reconductoring of existing overhead lines is currently excluded from the assessment as arboricultural impacts are likely to be able to be managed with reference to high level tree assessment data and careful working methodologies as set out in section 8.7 of the Scoping Report. Where this is not possible an assessment of potential impacts (of reconductoring) will be included in future reporting supporting the ES.

1.4.5 The arboricultural Study Area is shown on **Figure 1.1 to 1.4**.

Desk study

1.4.6 A summary of the organisations that have supplied data, together with the nature of that data is outlined in **Table 1.5**.

Table 1.5 Data sources used to inform the arboriculture assessment

Organisation	Data source	Data provided
Department for Environment and Rural Affairs (DEFRA)	MagicMAP ²⁷	Statutory and Non-statutory designations relating to trees such as Ancient Semi Natural Woodland (ASNW), Sites of Special Scientific Interest (SSSI), Biodiversity Action Plan (BAP) Priority Habitats.
Woodland Trust	Ancient Tree Inventory ²⁸	Online mapping resource highlighting the approximate position of recorded ancient, veteran or notable trees.
Bluesky Ltd	National Tree Map (NTM) dataset ²⁹	Proprietary mapping showing tree canopy cover and heights based on lidar and aerial imagery.
York City Council TPO online mapping	York City Council ³⁰	Online mapping resource identifying the location of trees subject to TPO.

²⁷ Defra. (2021). *Multi-Agency Geographic Information for the Countryside (MAGIC) website*. (Online) Available from: <https://magic.defra.gov.uk/magicmap.aspx> (Accessed 16 February 2021)

²⁸ Woodland Trust (2021). *Ancient Tree Inventory website* (Online). Available from: <https://ati.woodlandtrust.org.uk/> (Accessed 16 February 2021)

²⁹ Bluesky (2021). *National Tree Map* (Online). Available from: <https://www.bluesky-world.com/ntm> (Accessed 15 September 2021)

³⁰ York City Council. (2021). *TPO online mapping* (Online). Available from: https://cyc.maps.arcgis.com/apps/Embed/index.html?webmap=80019297f50a489599184a8279f513ea&extent=-1.1918,53.9249,-0.9518,54.0047&home=true&zoom=true&scale=true&search=true&searchextent=false&details=true&legend=true&active_panel=%20legend&di sable_scroll=false&theme=light (accessed 16/02/21)

Organisation	Data source	Data provided
Hambleton District Council TPO online mapping	Hambleton District Council ³¹	Online mapping resource identifying the location of trees subject to TPO.
Harrogate District Council TPO online mapping	Harrogate District Council ³²	Online mapping resource identifying the location of trees subject to TPO.
Selby District Council TPO online mapping	Selby District Council ³³	Online mapping resource identifying the location of trees subject to TPO.
Leeds City Council TPO online mapping	Leeds City Council ³⁴	Online mapping resource identifying the location of trees subject to TPO.

Survey work

1.4.7 Tree surveys compliant to BS5837¹² were undertaken in August and September 2021. Surveys completed to date have focused on land within the northern section of the draft Order Limits and at the extreme southern extent near Monk Fryston. Further tree surveys will continue to be undertaken in 2021 and early 2022 in relevant areas subject to land access. Trees have been visually inspected via a walkover ground level survey carried out by qualified arboriculturists. For each tree feature assessed the following attributes have been recorded:

- tree number;
- species (for groups the primary species are listed);
- life-stage (young, semi-mature, early-mature, mature, over-mature or veteran);
- height (for groups an average height is recorded);
- stem diameter (trunk thickness) measured at 1.5m (for groups a maximum diameter is recorded);
- crown radius (recorded at the four cardinal points);
- height of first branch and direction;
- physiological and structural condition (good/fair/poor/dead)
- Tree reference number;

³¹ Hambleton District Council (2021). *TPO online mapping* (Online). Available from: <https://www.hambleton.gov.uk/planning/trees-conservation/1> (Accessed 16 February 2021)

³² Harrogate Borough Council (2021). *TPO online mapping* (Online). Available from: <https://secure.harrogate.gov.uk/inmyarea/property/?uprn=100052003563> (Accessed 16 February 2021)

³³ Selby District Council. (2021) TPO online mapping (Online). Available from: <https://selby-dc.maps.arcgis.com/apps/webappviewer/index.html?id=def3546e04184c3a852d3ec02cd1d5d1> (Accessed 16 February 2021)

³⁴ Leeds City Council. (2021). TPO online mapping (Online). Available from: <https://leedscouncil.maps.arcgis.com/apps/MapSeries/index.html?appid=daeefe7a292b4f80a0ee284afe0926e4> (Accessed 16 February 2021)

- estimated remaining contribution in years;
- quality category (A – high quality, B – moderate quality, C – low quality, or U-unsuitable for retention for more than 10 years); and
- subcategory (1- arboricultural value, 2 – landscape value or 3 – cultural or conservation value).

1.4.8 Tree positions were determined using GPS, aerial imagery and National Tree Map positional data as appropriate. Where trees exhibited features associated with veteran status, they were recorded as veteran trees and have been assigned a greater Root Protection Area (equivalent to a radius of 15 x stem diameter).

1.5 Overall baseline

Current baseline: Current land use

- 1.5.1 The draft Order Limits are dominated by agricultural land with a high proportion of arable land which is divided into fields of varying size. Typically, managed hedgerows form field boundaries with occasional individual trees. Some individual trees, likely remnant of old field boundaries are present within larger fields and are also noted along highways crossing the site. Woodland groups provide a break from the repetition of agricultural fields together with smaller tree copses generally close to watercourses or adjacent to farmsteads.
- 1.5.2 Within the Tadcaster Area, the tree population includes sections of plantation woodland whilst within the Monk Fryston Area, deciduous woodland groups are present to the southern and eastern boundaries with small tree groups also present to the south of the existing Monk Fryston Substation. The existing Osbaldwick Substation is surrounded to three sides by dense deciduous tree planting, whilst in the remainder of the Study Area mature trees appear along field boundaries and along the edge of the A64.
- 1.5.3 Initial data from the tree survey has identified that trees are generally in good to fair condition and consist predominantly of the following species: English oak (*Quercus robur*), beech (*Fagus sylvatica*), Scots pine (*Pinus sylvestris*), ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), Lombardy poplar (*Populus nigra var Italia*), white willow (*Salix alba*) and crack willow (*Salix fragilis*).
- 1.5.4 Sixty-four Category A (high quality), 102 Category B (moderate quality) and 110 Category C (low quality) tree features have been recorded. In addition, 26 trees which are unsuitable for retention for more than 10 years have also been identified (Category U).

Current baseline: Statutory Designations applicable to trees

- 1.5.5 A number of TPOs have been identified within the draft Order Limits (or directly along the outer edge) which are administered by City of York Council, Hambleton District Council and Selby District Council (see **Table 1.6**). Although all the TPOs present within the draft Order Limits will be considered, TPOs that are located within residential gardens that will not be affected by the Project have been excluded.

Table 1.6 TPOs located within the wider Study Area

LPA	TPO Ref	TPO Name / Location	TPO Type	Species
York	1985/77	Moorlands Lodge, Skelton	Individual	Oak
York	1989/137	Moorlands, Skelton	Woodland Group	Various Various
York	1990/158	By River Ouse, Skelton	Area	N/A
			4x Individual	N/A
York	1989/125	Fairfields,	16x Individual	Oak, Beech, Lime, Sweet Chestnut, Willow, Sycamore, Yew, Horse Chestnut
Selby	2/2006	1 Garnet Lane, Tadcaster	Individual	Beech
Selby	9/1988	Inholmes Lane, Tadcaster	Individual	Sycamore
Selby	1/1980	Lord's Plantation, Leeds Road, Tadcaster	Woodland	Mixed, mainly Sycamore, Silver Birch, Beech, Ash and Scots Pine
Selby	9/1984	Peckfield Lodge South Milford	Woodland	Sycamore, Ash, Horse Chestnut, Oak, Laburnum, Beech, Silver Birch, Poplar, Thorn, Larch.
Selby	3/1991	Toulston Polo Ground, Toulston, Tadcaster	Area	Beech, Sycamore, Ash, Oak, Chestnut, Lime, Sorbus and Birch
Selby	6/1993	Field OS No 3571 Toulston, Tadcaster	Woodland	Beech, Sycamore, Oak, Chestnut and Ash
Hambleton	20/00003/TPO2	North East of Stable Barn, Overton	Individual	Sycamore

LPA	TPO Ref	TPO Name / Location	TPO Type	Species
Hambleton	1991/13	Yorburgh, Station Lane, Shipton by Beningbrough	Individual	Oak

Conservation Areas

- 1.5.6 Two Conservation Areas are located within the wider Study Area, Skelton Conservation Area, which is located to the south-east of North West of York Area and the eastern extent of Nether Poppleton Conservation Area which is also within the North West of York Area (see **Figure 7.2** of the PEIR).
- 1.5.7 The very southern extent of Nether Poppleton Conservation Area, along Ouse Moor Lane, extends into the preferred corridor for the new 400kV YN overhead line. No other conservation areas lie within the draft Order Limits or the preferred corridor for the new overhead line and its associated components.

Current baseline: Non-Statutory Designations applicable to trees

Ancient Woodland

- 1.5.8 The Ancient Woodland Inventory identifies woodlands that have had continuous woodland cover since 1600. These woodlands are typically more ecologically diverse and of a higher nature conservation value than those developed recently or those where woodland cover on the site has been intermittent. These woodlands may also be culturally important. The Ancient Woodland Inventory places woodland into one of four categories: Ancient Semi-Natural Woodland (ASNW); Plantation on Ancient Woodland Sites (PAWS); Restored Ancient Woodland Sites (RAWS) and Ancient Woodland Site of Unknown Category (AWSUC).

Table 1.7 Ancient Woodland within the wider Study Area

Name / Location	Total Area of Ancient Woodland (ha)	Woodland Classification
Overton Wood	47.75	PAWS
Redhouse Wood	48.06	PAWS
Nova Scotia Wood	1.81	PAWS
Shire Oaks	11.79	ASNW
Shire Oaks	3.07	PAWS
Smaws Wood	2.64	ASNW
Bullen Wood	2.51	PAWS
Castle Hill Wood	3.56	PAWS
Huddleston Old Wood	3.38	ASNW

Name / Location	Total Area of Ancient Woodland (ha)	Woodland Classification
Huddleston Old Wood	38.20	PAWS

1.5.9 All areas of Ancient Woodland are considered to be irreplaceable. Standing advice from Natural England and the Forestry Commission³⁵ sets out that a minimum buffer of 15m is typically required between Ancient Woodland and any new development. In addition, the guidance identifies that the current quality of Ancient Woodland should not influence its status. **Table 1.7** identifies the areas of recorded Ancient Woodland within or immediately adjacent to the draft Order Limits.

1.5.10 The Ecology Phase One assessment has not identified any additional Ancient Woodland sites (beyond those recorded on the Ancient Woodland Inventory) within the arboriculture Study Area for the PEIR.

Veteran Trees

1.5.11 Veteran Trees are trees that, because of their age, size or condition, are considered to have exceptional cultural, landscape or nature conservation value.

1.5.12 Any veteran trees are considered to be irreplaceable. Standing advice from Natural England and the Forestry Commission³⁶ sets out that for veteran trees a buffer should be maintained which is an area equivalent to a radius of 15 x the stem diameter (measured at 1.5m) or the canopy spread plus 5m (whichever is greater). In addition, the guidance³⁶ identifies that trees with future veteran potential should also be taken into account and protected.

1.5.13 The survey work completed to date has identified a number of potential veteran trees within the Study Area as shown in **Figure 2**.

Ancient Tree Inventory

1.5.14 The Ancient Tree Inventory³⁷, administered by the Woodland Trust is a mapping tool recording the oldest and most important trees in the UK. There are three categories of trees recorded which are ancient, veteran and notable. Notable trees are included as they are usually mature trees which stand out in the local environment.

1.5.15 There are a number of trees recorded in the Ancient Tree Inventory within the wider Study Area which are summarised in **Table 1.8**. No additional ancient trees have been identified by the tree survey completed to date.

Table 1.8 Trees Recorded on the Ancient Tree Inventory within the wider Study Area

Location	Veteran Status	Species
West of Wigginton / North York	Veteran	Beech

³⁵ Forestry Commission and Natural England (2018) Ancient Woodland, Ancient Trees and Veteran Trees Protecting them from Development. Available at: <https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences> (accessed 06/10/21).

³⁶ Forestry Commission and Natural England (2018). *Ancient woodland, ancient trees and veteran trees: protecting them from development* (Online), Available from: <https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences> (Accessed September 2021).

³⁷ Woodland Trust, Ancient Tree Inventory, available at <https://ati.woodlandtrust.org.uk/> (accessed 06/10/21)

Hutton Wandesley	Veteran	Pedunculate Oak
Hutton Wandesley	Notable	Oak
Hull Road / Osbaldwick Site	Notable	Atlas Cedar

National Tree Map

- 1.5.16 This preliminary Arboricultural Impact Assessment utilises the National Tree Map (NTM) dataset from the data providers Bluesky International Ltd³⁸. NTM is a digital map layer and database that accurately depicts and records the location and extent of trees. NTM data is generated from a combination of high-resolution aerial photography, Digital Surface Models (DSM) and Digital Terrain Models (DTM). It provides approximate tree canopies and heights for individual tree features.
- 1.5.17 Canopies are delineated based upon processing of the RGB values within aerial photography and the identification of a distinct treetop. Where trees are closely spaced or have a very homogenous height, then a single NTM feature can cover multiple trees. As it is based upon an airborne dataset, any trees obscured from above, for example a small tree growing under the canopy of a much larger tree, will not be recorded. It is impossible to have a 100% accurate dataset and trees can also be missing for a number of reasons including: temporal (size or presence of tree has changed since survey); distortions due to steeply sloping terrain; or shadow effects from tall structures.
- 1.5.18 Tree heights are based upon a Digital Height Model (DHM) which is created by looking at the difference between a DSM and DTM. This provides a maximum height attribute for each generated tree feature.
- 1.5.19 AECOM's in-house tree survey database³⁹ includes over 16,000 individual trees that have been surveyed in detail (in accordance with 'BS5837:2012: Trees in relation to design demolition and construction – Recommendations¹²'). This database has formed the baseline data for the assessment to ascertain the approximate maximum average stem diameter for defined tree height ranges. These were then used to calculate the maximum average Root Protection Area (RPA) radius for these height ranges (calculated as per BS5837:2012¹², Chapter 4.6 "...RPA should be calculated as an area equivalent to a circle with a radius 12 times the stem diameter.").
- 1.5.20 This data is then used to apply the respective RPA buffer zones for each individual tree's height. Merged into a single layer this forms the 'Approximate RPA Buffer Constraint Zones'.

Future baseline

- 1.5.21 Trees change over time. It is an inevitable process which will occur across the Study Area regardless of the Project. Natural events such as storms, including high winds and flooding, can significantly impact trees, as can the progression of pests and diseases (such as Chalara Ash Dieback). The contribution of individual trees will also change in value as they mature as well as when they eventually die.

³⁸ Bluesky International Ltd. National Tree Map available at <https://www.bluesky-world.com/ntm> (accessed 06/10/21)

³⁹ AECOM's database comprises all the trees that have been surveyed on AECOM led projects. The dataset is used to base assumptions on the expected size/girth of trees of a given height (height provided by the NTM Bluesky data) and to enable a buffer zone to be assigned.

1.5.22 Human activity can also result in change to any tree population through changes to land use and through management activities.

1.6 Embedded measures

1.6.1 A range of environmental measures have been embedded into the Project. **Table 1.9** outlines how these embedded measures will influence the arboriculture assessment.

Table 1.9 Summary of the embedded environmental measures

Receptor	Potential changes and impacts	Embedded measures	Compliance mechanism
Construction			
Ancient woodland and veteran trees	Potential loss or impact to Ancient Woodland and veteran trees from construction or operation.	The site selection and draft Order Limits have been developed to avoid ancient woodland and known veteran trees, where possible. Within the draft Order Limits, Limits of Deviation (LoD) will be included to allow for siting of working areas should post consent surveys indicate that minor amendments are required to avoid sensitive sites including Ancient Woodland and veteran trees. Further design work will seek to amend the Project to exclude areas of significant trees where possible.	LoD included on works plans forming part of the DCO.
Trees	Where tree loss is unavoidable and is to be mitigated with replacement planting this provides an opportunity to increase the resilience of the local tree stock (in terms of climate change and pests/disease risk) and maximise the appropriateness of any new tree planting.	Existing species range and diversity will be considered to help inform planting, as appropriate, in accordance with BS8545:2014 Trees: from nursery to independence in the landscape - Recommendations ¹³ .	Landscape management plan, secured via DCO requirement.

Receptor	Potential changes and impacts	Embedded measures	Compliance mechanism
Trees	Potential impact and damage to retained trees from construction operations.	The site selection and draft Order Limits have been developed to avoid significant trees and woodland where possible. An Arboricultural Method Statement will be developed in support of the Outline Construction Environmental Management Plan (CEMP) to ensure the protection and retention of significant individual trees and groups as fully as possible. Further design work will seek to amend the Project to exclude areas of trees where possible.	Outline CEMP, secured via DCO requirement.

1.7 Scope of the assessment

The Project

- 1.7.1 Individual arboricultural features, their quality and the spatial constraints associated with them will be identified through on-site walkover survey using the methodology set out within BS:5837:2012 Trees in relation to design, demolition and construction - Recommendations¹². This will focus on the areas with the most extensive construction works (i.e. the new 400kV and 275kV overhead line installations, new substation and CSECs within the North West of York Area and the substations and CSECs at the Tadcaster Area and Monk Fryston Area). At this stage, the scope excludes the reconductoring of the 275kV XC/XCP (Poppleton to Monk Fryston) overhead line as it is assumed that the works to this existing overhead line would be managed via a precautionary working methodology and comprise reconductoring of wires, replacement of steelwork and the replacement of a limited number of pylons in predominantly open agricultural land locations. As such, works are unlikely to result in extensive tree removals or other arboricultural impacts. Notwithstanding this, the appropriate reviews will be undertaken as engineering design is progressed. Should the works to the existing 275kV XC/XCP overhead line require tree removal this would be reviewed and can be considered as part of the assessment submitted in support of the DCO application.
- 1.7.2 To address concerns raised during scoping (**Table 1.4**), trees in proximity to proposed accesses and the installation of a circuit breaker and isolator at the existing Osbaldwick Substation will also be considered.
- 1.7.3 The likely arboricultural impacts are summarised in **Table 1.10**.

Table 1.10 Likely arboricultural impacts

Receptor	Reason for consideration
Trees in proximity to construction operations	Tree removal or pruning of branches or roots for, but not limited to, land preparation, earthworks or excavation.
Retained trees in proximity to construction and enabling works	Negative impacts on tree health or amenity value due to dust, soil compaction or tree pruning for clearance.
Arboricultural features located beneath or adjacent to overhead lines	Height reduction (pruning) or removal of trees to achieve clearances of overhead lines.
Retained trees in proximity to operational access areas	Access clearance requirements resulting in pruning or removal of tree features.

1.8 Assessment methodology

1.1.1 This preliminary arboricultural impact assessment applies the general assessment methodology set out in BS5837. The layout for the Project is overlaid onto the Tree Constraints data which shows tree survey data and high-level tree constraint data. A desk-based review is then carried out to understand where there are conflicts between trees and the position of new features or working space. An evaluation is then completed to determine if a given tree feature can be successfully retained or whether it requires removal. Where it may be feasible to retain trees, but these trees may still be impacted by the works (e.g. subject to pruning or carefully managed access within an RPA) they have been identified as at risk of removal or impact.

1.9 Preliminary assessment of arboricultural impacts

1.9.1 Based on the work and surveys undertaken to date (specifically, excluding re-conducting works) within the defined Study Area, the Project is likely to require the removal of 154,033m² of tree canopy⁴⁰. **Table 1.11** summarises the level of canopy cover to be removed or canopy cover at risk of removal or impact.

Table 1.111 Canopy Cover Removed or at Risk of Removal based on preliminary surveys

Project Area	Canopy Cover Removed	Canopy Cover at Risk of Removal or Impact
North West of York	107,182.0m ²	15,743.3m ²
Tadcaster	21,605.8m ² .	10,357.6m ²

⁴⁰ Note this excludes formally maintained hedgerow features below 5m, which are excluded from this preliminary arboricultural assessment but will be considered as part of future reporting, when further data is made available.

Project Area	Canopy Cover Removed	Canopy Cover at Risk of Removal or Impact
Monk Fryston	23,764.2m ²	1,462.87m ²
Osbalwick	1,481.01m ² .	3,957.15m ²

- 1.9.2 107,182.0m² of tree canopy cover is to be removed for the Overton Substation, new 275kv and 400kv overhead line and Shipton North and South 400kV CSESCs along with associated infrastructure and working space.
- 1.9.3 A further 21,605.8m² of tree canopy cover for the Tadcaster Tee East and West 275KV CSESCs and associated infrastructure, access and working space within the Tadcaster Area is to be removed, 23,764.2m² for the proposed substation, associated infrastructure and working space at Monk Fryston and 1,481.01m² to facilitate access and associated infrastructure at the existing Osbalwick Substation
- 1.9.4 Removals are required where tree positions conflict with the proposed position of new substations, CSESCs, new 275kV and 400kV overhead lines (and associated limits of deviation), compounds, pylon working areas, restringing areas, permanent and temporary access routes, bellmouths, scaffolding and associated infrastructure and working space.
- 1.9.5 Approximately 31,521m² of tree canopy is at risk of removal or impact from proposed access routes and indicative visibility splays which do not directly conflict with the assumed position of trees (which would otherwise justify their removal) and this includes 15,743.3m² at North York and Overton, 10,357.6m² at Tadcaster, 1,462.87m² at Monk Fryston and 3,957.15m² at Osbalwick.
- 1.9.6 Impacts will be reduced or avoided where visibility splays can be further refined or discounted and where access routes can be repositioned or where alternative construction methodologies (such as the use of proprietary 3D raft or tile systems installed using no dig techniques) are acceptable. Further design work post Section 42 consultation will seek to achieve a reduction, where possible.
- 1.9.7 Those trees considered likely to require removal to facilitate the Project which have been subject to detailed tree surveys are set out in **Table 1.12**. Further surveys are in progress and this data therefore represents a snapshot of the assessment and reporting on the likely loss of canopy cover, based on surveys undertaken to date. A more comprehensive dataset will be developed and assessed as part of future reporting, and therefore the numbers recorded in the table below are likely to increase as further surveys are undertaken.

Table 1.12 Surveyed trees likely to be removed

Tree Category	Category A⁴¹	Category B⁴¹	Category C⁴¹	Category U⁴¹
Surveyed individual trees to be removed.	22	45	18	15
Surveyed tree groups to be removed in full	1	5	17	-
Surveyed tree groups to be removed in part	1	4	9	-
Surveyed hedgerows to be removed in full	-	1	3	-
Surveyed hedgerows to be removed in part	-	-	3	-

Likely impacts to recorded Ancient Woodland

- 1.9.8 Based on initial design work, a new permanent access route is proposed within the minimum 15m buffer of Overton Wood to the south-west of the proposed Overton Substation as shown on **Figure 2**. This route follows an existing unsurfaced farm access track and has therefore likely been subject to a degree of disturbance and soil compaction over time. The proposed surfacing would likely result in increased compaction and would also require excavation, which could impact on the health and condition of nearby woodland trees and associated flora and fauna (including those in the soil). Following feedback from consultation, design amendments will be proposed to reduce or avoid impacts where possible/appropriate.
- 1.9.9 In addition, a new temporary access route is proposed to the south of Redhouse Wood; however, the route is approximately 20m beyond the minimum 15m buffer of this Ancient Woodland and therefore no negative impacts are considered likely. The trees within the woodland can be robustly protected with temporary tree protection fencing.

Likely impacts to veteran trees

- 1.9.10 No veteran or ancient trees identified by the Woodland Trust's Ancient Tree Inventory are considered likely to be removed or impacted by the Project.

⁴¹ quality category (A – high quality, B – moderate quality, C – low quality, or U- unsuitable for retention for more than 10 years)

- 1.9.11 Based on initial design work, six veteran trees have been identified by the detailed tree surveys completed to date and these are identified on **Figure 2**. Of these, one tree to the south of Shipton North and South 400kV CSESCs is likely to require removal due to a conflict with the footprint of the limits of deviation for the new overhead line.
- 1.9.12 A further two trees (one at North Hall Moor, east of Shipton North and South 400kV CSESCs and one north of Thickpenny Farm to the south west of the Overton Substation) are at risk of an incursion within their notional Root Protection Area (RPA) (equivalent to 15 x stem diameter) for new access routes (one of which is only affected on the extreme outer edge of its RPA). Excavation for new hard surfacing could result in root severance and soil compaction; veteran trees are particularly sensitive to changes in local conditions and are less tolerant of disturbance.
- 1.9.13 Following feedback from consultation, design amendments will be proposed to reduce or avoid significant impacts where possible/appropriate. Design amendments will take place post Section 42 consultation, and will be presented within the final application.

Likely impacts to trees subject to Tree Preservation Order

- 1.9.14 In the vicinity of Overton (1,500m to the south of Overton Substation) a single tree subject to a Hambleton District Council TPO (Ref: 20/00003/TPO2) is located circa 40m to the south of the draft Order Limits and will therefore not be impacted.
- 1.9.15 To the north of the Tadcaster Area at High Moor Farm, a new permanent access route is proposed immediately adjacent to a woodland (located to the north of the access route) which is subject to a Selby District Council TPO (ref 1/1980). This area has not been subject to a detailed survey at this stage; however, a detailed survey will be completed prior to the submission of the DCO application to allow a full understanding of the likely RPA of trees in this woodland group and to determine any potential impact and associated mitigation measures. A preliminary desk-based assessment indicates that the proposed access does incur within the notional buffer zone applied to the high-level tree assessment tree features in this location.
- 1.9.16 Following feedback from consultation, design amendments will be proposed to reduce or avoid significant impacts where possible/appropriate. This could include alternative construction methodologies, such as the use of proprietary cellular confinement systems to avoid any requirement for excavation which will be considered where appropriate.
- 1.9.17 In addition, indicative visibility splays are proposed along the existing A659 with the potential to impact TPO 1/1980 at High Moor Farm to the east and TPO ref 3/1991 at Toulston Polo Ground to the west. This may require pruning or in extreme cases tree removal where the visibility splay of the existing road is insufficient. However, the final visibility requirement in this area is to be reviewed in detail and where necessary more detailed tree survey data captured to allow a full understanding of any required pruning or removal in this area.

Likely impacts to trees within Conservation Areas

- 1.9.18 No trees located within or near to Conservation Areas are impacted by the Project.

Likely impacts to trees within Sites of Special Scientific Interest

- 1.9.19 No trees located within or near to SSSIs are impacted by the Project.

1.10 Further work to be undertaken

- 1.10.1 The information provided in this report is preliminary, the final assessment of likely arboricultural impacts will be reported in future assessment work. This section describes the further work to be undertaken.

Baseline

- 1.10.2 Detailed tree surveys will be completed on those areas of the draft Order Limits where tree loss or impact is likely to be required (where land access is available). A Tree Constraints Plan will be developed along with a schedule of surveyed trees which will be included within future reporting.
- 1.10.3 Hedgerows identified in the Phase 1 Habitat survey (see **Appendix 8C** of the PEIR) will be added to the tree survey baseline for areas where detailed tree surveys haven't mapped hedgerow features and where they are not identified by the high-level tree assessment due to heights below 5m.

Assessment

- 1.10.4 A comprehensive Arboricultural Impact Assessment of the Project will be carried out to identify trees to be removed or trees subject to a likely direct or indirect impact. This will be based on detailed tree survey data for all accessible areas where direct impacts are considered likely. Set back from these areas, the high-level tree assessment dataset will be used to demonstrate that trees will be unaffected and where tree protection measures are appropriate.
- 1.10.5 A Tree Protection Plan will be produced to identify trees to be removed and to show how retained trees are to be protected.
- 1.10.6 A Project wide assessment of tree heights in relation to the overhead lines will be carried out using high level tree height information (based on Lidar) and an assessment of the likely extent of tree growth and potential pruning will be carried out factoring in general growth rate expectations over a five-to-ten-year period.
- 1.10.7 An Arboricultural Method Statement will be developed to set out the specification for tree protection measures and to address how sensitive works within RPAs are to be completed.

Environmental measures

- 1.10.8 The design will be reviewed, and amendments considered where feasible to avoid, reduce or mitigate arboricultural impacts, particularly those to trees of known high value including Ancient Woodland, veteran trees and trees subject to TPO.
- 1.10.9 An Arboricultural Method Statement will be developed to set out the specification for tree protection measures and to address how sensitive works within or close to RPAs are to be completed.

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